AGENDA
CITY OF LARAMIE, WYOMING
WORK SESSION
CITY HALL
April 26, 2016 6:00 pm

1. SPECIAL MEETING

1.A. Memorandum of Understanding to Amend Development Agreement with LEDC
[Loos]

Documents: Cover Sheet for MOU Amendment 4-26-16.pdf, 2016 MOU FINAL.pdf, Attachment A ~Development Plan.pdf, Attachment B~ Signed Grant Application.pdf, Attachment C(a) ~ WBC Agreement.pdf, Attachment C(b) ~ WBC Agreement, Amendment 1.pdf, Attachment D ~ Contingency Agreement.pdf

2. Public Comments

3. WORKSESSION

3.A. WORK SESSION: Bill Nye Western Corridor Study: Presentation of Final Draft
[HUNT, CD Dir]

Documents: 1.Cover Sheet.pdf, 2.Bill Nye Corridor Study Draft Report.pdf, 3.Appendix A-Improvement Plans_FinDft.pdf, 4.Appendix B-Public Meetings.pdf, 5.Appendix C-Presentations.pdf, 6.Appendix D-Cost Estimates.pdf, 7.Appendix E-Traffic Analysis.pdf, 8.Appendix F.pdf

3.B. WORK SESSION: Presentation of the Pavement Management System

Documents: CS Pavement Management System Presentation.pdf, Presentation Power Point 4.26.16 LCC.pdf

3.C. WORK SESSION: Laramie Public Art Coalition Update
[LPAC/Guerin]

Documents: LPAC Update Cover.pdf, LPAC Update to Council Presentation.pdf

4. City Council Updates/Council Comments

5. Agenda Review

6. Public Comments

CITY OF LARAMIE COUNCIL SPECIAL MEETING April 26, 2016

Agenda Item: Agreement - Intergovernment

Title: Memorandum of Understanding to Amend Development Agreement

Recommended Council MOTION:

I move to approve the Memorandum of Understanding and authorize the Mayor and Clerk to sign.

Administrative or Policy Goal:

Fulfill contractual obligation.

Background:

In 2012 the City of Laramie and LEDC entered into a Development Agreement for Cirrus Sky. The Agreement called for the City to retain ownership of Cirrus Sky through infrastructure completion, at which point the City would transfer Cirrus Sky to LEDC. Cirrus Sky infrastructure is now completed. LEDC requested that we close on this transfer before May 1 in order for them to benefit on discounted title insurance. The City agreed to place hold a special meeting prior to the work session on April 26 to assist LEDC.

Responsible Staff: City Manager City Attorney

Attachments: MOU and attachments

_____ City Manager _____ City Attorney _____ Choose an item.

MEMORANDUM OF UNDERSTANDING—CIRRUS SKY TECHNOLOGY PARK
&
AMENDMENT TO CONTINGENCY AND DEVELOPMENT AGREEMENT

COME NOW the Parties, the City of Laramie, a Wyoming municipal corporation located in Albany County, (hereinafter referred to as "**City**"), whose address is 406 Ivinson Avenue, Laramie, Wyoming 82070, and the Laramie Economic Development Corporation **("LEDC")**, a Wyoming non-profit corporation and Community Development Organization (a "CDO") in the State of Wyoming, whose address is 800 South Third Street, Laramie, Wyoming 82070, and do hereby enter into this Memorandum of Understanding—Cirrus Sky Technology Park & Amendment To Contingency And Development Agreement (hereinafter the "MOU & Amendment").

WHEREAS, in 2012 the Parties collaborated to apply to the Wyoming Business Council for a Business Ready Program award under the Community Readiness funding category for the purchase and development of a technology-office business park located between 22nd Street and 30th Street, more particularly defined by the attached **Exhibit "A"** as the Cirrus Sky Technology Park project site;

WHEREAS, the efforts of the Parties resulted in execution of that certain Contingency & Development Agreement (hereinafter the "Development Agreement") dated October 2, 2012, a copy of which is attached hereto as **Exhibit "D"** and incorporated herein by this reference;

WHEREAS, pursuant to the Development Agreement, each party agreed to perform certain tasks. For example, the **City** agreed to apply for a Business Ready Grant with the Wyoming Business Council. The grant was awarded, and the **City** then undertook construction of certain improvements and infrastructure at Cirrus Sky Technology Park. Under the Development Agreement the **City** agreed that once construction of the improvements and infrastructure at the park were completed that it would transfer title to the property to **LEDC** not later than January 1, 2015. For various reasons, the **City's** construction took longer than anticipated. However, construction of the infrastructure and improvements is complete, and the **City** is to now transfer title to the property to **LEDC**;

WHEREAS, pursuant to the Development Agreement, **LEDC** agreed to prepare a marketing budget to promote the development of the project, and **LEDC** has completed this task. **LEDC** also agreed to prepare an operational business plan (copy attached hereto) for the technology park in order to specify how the recapture of grant funds from development of the technology park would be reinvested and recaptured to further promote economic development and public investment, and **LEDC** completed this task;

WHEREAS, since the Development Agreement was executed, the **City** and **LEDC** agreed to use a portion of the real property at Cirrus Sky Technology Park for placement of a business commonly known as Underwriters Laboratory ("UL"). The parties agreed that with respect to

the parcel of real property that houses the UL building that such property would not be transferred to **LEDC**, but that the **City** would be entitled to retain title to that portion of the Cirrus Sky Technology Park. The Parties also agreed to cooperatively build a project commonly known as the Spec Building on a portion of the Cirrus Sky Technology Park property. The Spec Building is the subject of a separate agreement between the Parties, and is not affected by this Memorandum of Understanding & Amendment (however a copy of that agreement is attached hereto for reference);

WHEREAS, since the 2012 Development Agreement was put in place, **LEDC** has associated with the Laramie Area Chamber of Commerce so as to promote efficiency in overhead and staffing of the areas where the two agencies may have had duplicate efforts. However, **LEDC** remains an authorized and registered CDO under Wyoming law and maintains its corporate existence and governance structure;

WHEREAS, substantial cash grant funding from both the Wyoming Business Council and the **City** was used to install certain infrastructure in and around the Cirrus Sky Technology Park project site in accordance with the details provided in the grant application for the purpose of causing substantial public benefit returns to the City of Laramie, in the form of job creation, expansion of the tax base, and increased economic development opportunities for the **City** and its residents; and,

WHEREAS, the Parties agreed the **City** would transfer the Cirrus Sky Technology Park project site by way of Warranty Deed to **LEDC** as set forth in the Development Agreement, and the Parties intend for this MOU & Amendment to confirm the status of certain issues, to schedule the transfer of title to the Cirrus Sky Technology Park but without the UL lot, and amend the Development Agreement as set forth herein.

NOW, THEREFORE, in exchange for the mutual promises contained herein, and other good and valuable consideration, the Parties agree as follows:

1. COMPLETION & ACCEPTANCE OF IMPROVEMENTS BY CITY

The **City** has accepted the public improvements and infrastructure at Cirrus Sky Technology Park including 22nd Street, 30th Street, sanitary sewer and water.

LEDC agrees to take ownership of Cirrus Sky Technology Park as described and shown in Exhibit A hereto, which the Parties acknowledge excludes the UL building and its associated real property. The UL Building and real property shall be retained by **City**. The Development Agreement is hereby amended to reflect the retention of the UL building and real property by **City**. The Parties have arranged for a closing of the transaction to take place. The Parties agree that the transfer of title is now warranted and such transfer shall take place at a closing between the Parties. At closing, the **City** shall execute and deliver a good and sufficient statutory

warranty deed in favor of **LEDC**, free and clear of all leases and tenancies, all liens and encumbrances, except:

i. Liens for special improvements disclosed to **LEDC** in writing;

ii. Building and zoning regulations;

iii. City, County and State subdivision laws;

iv. Reservations, restrictions, covenants and easements of record in the real estate records of the grantor-Grantee index within the Albany County Clerk's office as of the date hereof; and

v. The UL Building and real property as shown in Exhibit A.

Moreover, the Parties acknowledge that **City** has reserved out-lots for construction of a public green belt trail and appurtenances through the Cirrus Sky Technology Park project site, and secured funding to construct the public greenbelt. That portion of Cirrus Sky Technology Park shall remain titled in **City**, and will continue to be constructed, controlled and maintained by **City** at **City's** expense. The Development Agreement is hereby amended to reflect the retention of the UL Building and real property, as well as the greenbelt out-lots. The UL Building and real property is part of a separate agreement between UL and the **City,** but a copy of that project development agreement is attached hereto for reference).

LEDC has determined to acquire title insurance to the property, and will bear the premium for the expense of same.

2. LEDC CORPORATE STATUS

LEDC agrees that it shall not dissolve or cause the dissolution of its corporate charter and community development organization/economic development organization status during the reporting period and term of the WBC Grant. Specifically, **LEDC** shall maintain its current non-profit corporate and community development organization status for purposes of the Cirrus Sky Technology Park Project. In the event **LEDC** fails to maintain its corporate charter, dissolves, or fails to maintain its status as an economic development organization pursuant to the provisions of Wyoming Statute § 9-12-301, et seq. the **City** shall have the right to declare a breach of the agreement and require that **LEDC** remedy such breach by restoring the charter of **LEDC** or the City and LEDC agree to assign LEDC's obligations under this MOU & Amendment to another qualified community development organization. In the event of a failure by **LEDC** to cure any such breach within thirty (30) days of receipt of notice and opportunity to cure, then title to the Property, whether real, personal or mixed, shall be transferred to the **City** upon demand. **LEDC** shall comply with the demand for transfer within 30 days after the cure period expires.

As the owner of the Cirrus Sky Technology Park project site, **LEDC** agrees to act in good faith and use all best and reasonable efforts to further develop, market, promote and sell or lease the property to businesses which will make the best use of that property for the purpose of furthering

economic development, with specific preference to be given to those businesses creating or retaining primary jobs at the Albany County mean and/or median wage.

LEDC agrees to support and facilitate the **City's** construction of the greenbelt trail at Cirrus Sky Technology Park as was contemplated in the development plan for the project site, including providing access and easements as might be necessary.

Upon all plat filings or site-plan review filings for Cirrus Sky Technology Park, **LEDC** agrees to ensure proper notice is provided to benefiting property owners that will accrue future benefit from the public infrastructure paid for with public funds including recaptured funds, in accordance with Laramie Municipal Code 15.18.100 *et seq*. **LEDC** agrees to comply with this code section and any other applicable municipal code sections relating to reimbursement obligations of other landowners.

3. USE OF PROCEEDS AND SALE.

After taking title to Cirrus Sky Technology Park, **LEDC** confirms that it will shall manage and utilize expenses and revenues from ownership of Cirrus Sky Technology Park project site in accordance with the Grant Application submitted to the Wyoming Business Council **(Exhibit "B")** and the terms of the *Business Ready Community Grant And Loan Program Grant Agreement Between The Wyoming Business Council and The City of Laramie* **(Exhibit "C").**

The Parties acknowledge that the grant agreement between the **City** and Wyoming Business Council requires retention of records related to the Cirrus Sky Technology Park Project for a ten (10) year period starting on the date that the Wyoming Business Council gives notice to **City** of the closeout of the Grant. **LEDC** agrees to retain all of its records relating to the project so as to allow **City** to be able to provide required records to the Wyoming Business Council for said period. **LEDC** will maintain said records at its business office, and such records will be made available to the **City** and the Wyoming Business Council during regular business hours upon request.

The Parties acknowledge that the Cirrus Sky Technology Park project was funded with public grants from both the Wyoming Business Council and the **City**. Moreover, **LEDC** committed substantial effort and funding to its portion of the project, and will continue to expend funds on the Project. **LEDC** agrees the Recapture Agreement between the Parties dated October 10, 2012 will remain in effect for five (5) years after the completion of Cirrus Sky Technology Park Project. **LEDC** agrees to manage the Cirrus Sky Technology Park Project property for the originally intended public purposes and uses and that it is obligated to properly account for and expend funds which are received by **LEDC** from the sale or lease of Cirrus Sky Phase I real property, as set forth in the Recapture Agreement. Specifically, the Recapture Agreement (a copy of which is attached), but which is also incorporated herein by this reference, provides in part as follows:

The priority for expenditure of recaptured funds resulting from the sale or lease of the Cirrus Sky property shall be for the further development of the property, including for a period specified below [5 years] for all of the approved phases of development during the duration of [the Recapture] agreement. Not less than eighty percent (80%) of the recaptured funds as received from Phase I shall be devoted to the further development of the Cirrus Sky Phase I property and the specified match for grants to assist in the development of the specified improvements.

The priorities for the expenditure of the identified 80% of the recaptured funds shall be as follows for the period specified below [5 years]:

A. Completion of the development of the Cirrus Sky project, as defined in the application to the Wyoming Business Council.

B. Matching any grant funds for any further development of the property adjoining the Cirrus Sky project which is situate to the West to the Laramie River, East to 45th Street or to the North as part of a similar development for a period not to exceed five (5) years from the completion date of the Cirrus Sky property as specified elsewhere in [the Recapture Agreement].

The remaining percentage of recaptured funds shall be used for the below listed priorities:

A. Marketing and promotion of the Cirrus Sky property.
B. Marketing and promotion of the other facets of property within the community which is available for economic development purposes.
*C. Administrative costs of **LEDC**.*
*D. Other economic development projects and programs by **LEDC** within Albany County which have been approved by the **City**.*

*The recaptured funds shall be accounted separately by **LEDC** during the entire period of the five years beyond the completion date of the Cirrus Sky property as recognized by the **City** by resolution. That accounting shall be in the form of an annual report due to the **City** on or before not less than 30 days prior to May 1 of each year.*

LEDC agrees to receive, review and submit in a timely fashion Wyoming Business Council grant reports upon request of the **City**.

The Parties agree that § 5.13 of the Development Agreement pertaining to default shall apply according to the terms of the Development Agreement.

4.0 GENERAL PROVISIONS

Amendments. Either Party may request an amendment, change, modification or revision of this MOU & Amendment, but no amendment shall be effective unless approved by both Parties. Any amendment, change, modification or revision to this MOU & Amendment which is mutually agreed upon by and between the Parties shall be incorporated by written instrument, and shall become effective only when signed by both Parties. With regard to the **City**'s approval of any such amendment, change, modification or revision, the **City** shall comply with any applicable procedural or public notice requirements.

The other provisions of all other applicable agreements pertaining to Cirrus Sky Technology Park shall not be affected by this MOU & Amendment.

IN WITNESS WHEREOF, the Laramie City Council has caused this MOU & Amendment to be signed and executed in its behalf by its Mayor, and duly attested by its City Clerk, and **LEDC**, has signed and executed this MOU & Amendment, the day and year first written above.

CITY OF LARAMIE, WYOMING

By: _____
David Paulekas, Mayor and President of the City Council

Attest:
Angie Johnson, City Clerk

ACKNOWLEDGMENT

STATE OF WYOMING)
)ss.
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by David Paulekas and Angie Johnson, the Mayor and City Clerk of the City of Laramie, Wyoming, this ___ day of _____, 2016

Witness my hand and official seal.

_____
Notary Public

My Commission Expires: _____

LEDC

By: _____
Dan Furphy, CEO

By: _____
Ray McElwee, Chair Board of Directors

ACKNOWLEDGEMENT

STATE OF WYOMING)
) ss
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Dan Furphy and Ray McElwee, known to me to be the CEO and Board Chair of LEDC, respectively, on this _____ day of _____, 2016.

Witness my hand and official seal.

_____
Notary Public

My Commission expires _____

Cirrus Sky Technology Park

Development Plan

August 13, 2012

Laramie WYOMING

Community Builders, Inc.
Coffey Engineering
BHA Design
TMNG Global

Table of Contents

Table of Contents 2
Executive Summary 4
Project Description 5
Site Description 5
Proposed Uses for Site 6
Applicability of Plans & Codes 8
Laramie Profile 12
Business Environment 12
Planning Considerations & Influences 14
North Laramie Expanded Study Area 14
Casper Aquifer Protection Plan 15
Natural Features 16
Existing Development and Man-Made Features 16
Existing City Zoning 17
Data Center Buffer Requirements 18
City Comprehensive Plan 19
Future Connectivity Plan 24
Future Streets 24
Street Design Overview 25
Future Trails, Greenways and Parks 27
Phase I – Cirrus Sky Technology Park 29
Future Fiber Telecommunications Plan 31
Infrastructure Improvements 33
Phase I Site Public Infrastructure Plan 33
future development 35
Phase I parcel (Exhibit F) 35
Wet Utility Overview 35
Phase I Parcel (Exhibit F) 35
Future Development 36
Drainage Design Overview 36
Development Costs 37
Funding Recommendation 38

Funding Sources 39
Wyoming Business Council – Business Ready Community Program 39
Wyoming DATA CENTER RECRUITMENT FUND 41
Wyoming Business Council – Community Development Block Grant Program 43
Revenue Bonds 43
State Loan and Investment Board 43
Mineral Royalty Grants (MRG) 44
Wyoming Joint Powers Act Loans (JPA) 44
Abandoned Mine Lands (AML) 45
U.S. Department of Commerce/Economic Development Administration 46
Capital Facilities Tax 48
Phasing Plan 48
Potential Incentives 49
Business Ready Community (BRC) Grants 49
Managed Data Center Cost Reduction Program 49
Sales Tax Exemptions 49
Workforce Training Grants 50
Industrial Development Revenue Bonds 51
Local Incentives 51
Economic Impact Analysis 51
Summary of Economic Impacts 60
Strategic Marketing Plan 61
Vision 61
Objectives and Goals 62
Target Industries and Companies 63
Marketing Data NEEDED 63
Maps and Exhibits 65
Map 1 - Streets, Trails and Parks
Map 2 - Future Land Use Plan
Exhibit A – Overall Phasing
Exhibit B – Sanitary Sewer
Exhibit C – Waterlines
Exhibit D – Storm Sewer
Exhibit E – Streets
Exhibit F – Phase one parcel infrastructure improvements

Executive Summary

The City of Laramie has many assets and strengths that would be attractive to data centers and technology-driven companies. It lacks one thing: A shovel-ready site. This Concept Plan addresses that need and, if followed, will prepare the City to effectively compete against other communities for this highly sought after industry. The Cirrus Sky Tech Park will become a highly successful business park that strengthens the local economy, creates hundreds of jobs, and builds the local tax base.

Phase I of the Cirrus Sky Tech Park will be located on the north side of Laramie on a 149-acre parcel that is under contract to be sold to the City. The site (and the surrounding area) has been studied, planned, and engineered by the team of consultants that prepared this report: Community Builders, Inc.; Coffey Engineering & Surveying; BHA Design; and TMNG Global. As discussed in this Concept Plan, the site is ideal. It is large enough to accommodate several new businesses, can be affordably served with streets, water/sewer, and other utilities, and is perfectly situated to be connected to multiple long-haul fiber telecommunication routes that are nearby. Once that work is complete, the City of Laramie will become very competitive in data center siting decisions.

The planning, land purchase, and infrastructure development will cost approximately $5.8 million. The City has committed $500,000 in cash to the project, and the current landowner is willing to accept a discounted price for the land, essentially making a $626,000 contribution to the project. Together, that $1,126,000 represents 19.3% of the total project cost. Grants from the Wyoming Business Council (about $4.7 million) will pay for the balance of the costs.

It will take 10-15 years for the Cirrus Sky Tech Park to be fully built. During that time, companies will invest approximately $255 million, generating 3,499 construction jobs with a payroll of $131 million, creating a $369 million economic impact. State and local taxes of $3.6 million will result from construction. Once these companies become operational, 273 jobs will be created with a payroll of $10.5 million, generating a $34 million economic impact. During operations, about $1.4 million in additional state and local taxes will be generated from this project. Clearly, the Cirrus Sky Tech Park will have a significant impact on the local economy.

Project Description

Recently the City of Laramie has been identified by more than one Fortune 500 company as a highly desirable location for siting of a Data Center or Technology Park. Based on factors including a cool climate, consistent power source, land availability, and educated workforce, Laramie has key components required in making a Data Center or Tech-Park viable within the community.

Laramie's location provides competitive strengths for this kind of project. Cool, dry mountain air can help to lower cooling costs. There are eleven "long haul" fiber telecommunication lines already in the ground within 10 miles of the site, providing fast, redundant access to both national communication hub points and the World Wide Web. Electric power, natural gas, and other utilities are abundant and cost competitive. Interestingly – and perhaps compellingly, for the hyper "green" sensitive data center industry – the study area is very close to wind power farms. Transportation is convenient, with Interstate 80, U.S. Highway 287, and Interstate 25 providing quick access to other Front Range locations. Denver International Airport is 2-3 hours away.

Although a high level of interest has been shown, the City of Laramie has not yet been selected as a future new location. The Laramie community believes shovel-ready site(s) with all necessary power, fiber, water, sewer, roads, and other infrastructure in place are the principal missing keys to doing so. A proactive planning process is needed in order to provide core infrastructure and development necessities for a prospective Data Center or Tech-Park. This plan addresses those needs, including land use planning, infrastructure development, and phasing. Fully implemented, this plan can be the catalyst in making the siting of a Data Center or Tech-Park a reality, while simultaneously improving fiber and power infrastructure to help existing businesses grow.

SITE DESCRIPTION

This is a general concept plan for development of an area of approximately 2,000 acres north of the current City of Laramie boundary, generally located east of U.S. Hwy. 287 and west of the future northerly extension of 45th Street (the "study area"). A more focused and detailed plan is provided for an identified smaller area within the general concept plan. The smaller area is approximately 149 acres in size, generally located east of the future northerly extension of 15th Street and west of the future northerly extension of 30th Street and south of a future east-west collector, adjacent to the current City boundary (referred to as the "Phase One Site").

The study area is largely undeveloped. However, there are several existing uses:

- Solid Waste Management Facility – the City of Laramie operates its municipal Solid Waste Management Facility at the north end of the study area. The facility does not currently have electricity, water, or sanitary sewer on site. The capacity of the Solid Waste Management Facility is extensive, with a new lined cell expansion beginning soon. No plans are on the table for relocation of the Solid Waste Management Facility.
- Ranching – much of the study area is owned and used for ranch purposes by the Warren Livestock LLC and/or its subsidiaries.
- Residential – one large parcel within the study area includes a home and auxiliary structures.
- Utilities – a federal agency, the Western Area Power Administration (WAPA), owns and operates a large regional substation (Snowy Range), just north of the Phase I Site that

feeds three high voltage power lines traversing the study area. One of those WAPA power lines leads to a nearby substation operated by Rocky Mountain Power, which provides power to much of the Laramie community.

The properties surrounding the study area include residential and various commercial uses. There is also one adjacent parcel that is currently owned by the local school district, although it is not currently used nor are there plans for future school-related uses.

To the east of the property lies the City of Laramie's Casper Aquifer Protection Overlay Zone, an area encompassing approximately seventy-two square miles. This area is vulnerable to contamination from most types of development. The Casper Aquifer supplies approximately 60% of the City's drinking water and 100% to those homeowners that fall within the recharge area. Since 2002, the community has relied on the Casper Aquifer Protection Plan to protect this important water supply.

Along the south edge of the study area, a prominent ridge overlooks the entire community. The community would like to protect the appearance of that ridge by minimizing development along its edge.

Currently, there are three public roadways in the study area:

- Ninth Street/Rogers Canyon Road – paved surface road that cuts north/south through the study area to the solid waste management facility and beyond.
- 30th Street – dirt road that runs north/south to the east of the Phase I Site
- Asphalt Lane – dirt road that runs east/west to the north of the Phase I Site, connecting 9th and 30th Streets

There are no water or sewer utilities within the study area. However, there is a major water line (14") roughly aligned with 30th Street, which brings water from one of the City's wells into the community. The nearest sanitary sewer line is located in the residential neighborhood just to the south of the Phase I Site. Electric power appears to be abundantly present (Note: needs further study). Natural gas and fiber/copper telecommunications are present just to the edge of the study area.

PROPOSED USES FOR SITE

The primary purpose of developing the Phase One Site and the larger study area is to create a shovel-ready site to attract at least one large data center that serves the rapidly growing "cloud computing" traffic market. Additional types of data centers are desired, as are other technology-driven companies, although the immediate market demand appears to favor cloud computing data centers. Regardless of the market trends, the Laramie site will be designed and prepared for all types of data centers (cloud computing and enterprise), since both are included in the broader tech market that Laramie is well positioned to recruit.

Many data center companies prefer to be located on large land parcels, providing a buffer from other uses. There are specific concerns about being too near residential neighborhoods (they test run their backup diesel generators on a regular cycle, which can be noisy), schools (traffic concerns), and airport glide pathways (security). Therefore, the concept plan for the study area

includes light industrial and commercial uses surrounding the existing solid waste management facility, but no schools or residential neighborhoods.

This project, including the specific proposed uses for the Cirrus Sky Tech Park, is entirely consistent with existing economic development plans and strategies. The number one strategic priority of Laramie Economic Development Corporation (LEDC) is business development, including the marketing of the study area to mega data center companies. The existing plan is to develop a marketing strategy, to include attending trade shows and visiting prospective clients. In spite of its many strengths, LEDC has found that data center companies are choosing to locate to communities that already have shovel-ready sites, as opposed to Laramie where there is none. This issue is the driving force for this development project.

Beyond the lack of a shovel-ready site for data centers, Laramie's inventory of available building lots is minimal, and the lots themselves are too small for many technology companies. LEDC has not been able to recruit several specific opportunities for the community, including at least 37 technology prospects. According to LEDC's list of these prospects, more than 1,000 technology jobs and millions of square feet of new facilities have been lost. Therefore, it is important that the Cirrus Sky Tech Park be designed to accommodate such firms, so that the community can effectively compete for all kinds of technology businesses.

The regional economic development strategy also supports this project. The High Plains Economic Development District is the regional economic development organization for Laramie (including Albany, Goshen, Laramie, and Platte Counties) The district has a current Comprehensive Economic Development Strategy (CEDS), in which the top goal is economic diversification. Within that goal, the first project is to encourage data centers to relocate to Southeast Wyoming. Another goal is to improve public infrastructure, including enhancements to business parks for new businesses and recruitment efforts.

APPLICABILITY OF PLANS & CODES

During the preparation of this plan, City plans and codes were considered and City staff provided an outline of potential issues. These issues have been identified and addressed, including the following specific points:

Laramie Comprehensive Plan – 2007

a. Chapter 3 – Community Character: The proposed concept plan is designed to fit well into existing community desires for land use and development. A new zoning district, the Technology Office District, is currently being developed by the City of Laramie and will be available for the Cirrus Sky Tech Park site. The City also anticipates imposing a 100-foot buffer of green space/parks along the ridgeline, to protect the visual appearance of that area and to enhance walkability.

b. Chapter 4 – Parks and Recreation: Parks and recreation are highly scrutinized parts of any land use plan. The Cirrus Sky Tech Park land use plan includes for full build out includes a couple of proposed "neighborhood" parks (10 acres) and one larger park (about 40 acres). The concept plan also proposes that the ridgeline on the south side of the study area become a walking/biking trail, connecting 30th Street to U.S. Highway 287. This trail area would serve as an excellent buffer between the Cirrus Sky Tech Park developments and the residential neighborhoods to the south, while protecting the appearance of the ridgeline for the entire community.

c. Chapter 7 – Urban Growth: When the City moves forward with annexation of the Phase I Site property and/or the study area, compliance with the requirements of this Chapter will be required, including possible amendment of the Urban Growth Area Plan.

d. Chapter 8 – Transportation: The Cirrus Sky Tech Park concept plan contemplates a mix of transportation modalities (car/truck, bike, and pedestrian, but not rail). Special effort has been made to design streets to help divert traffic (especially trucks) to/from U.S. Highway 287, in order to minimize driving through residential neighborhoods. Rights of way have been designed to comply with the requirements of Chapter 8.

e. Chapter 10 – Public Safety: Development of a new fire station (or moving existing Fire Station #2) in the study area would be beneficial, but not necessary, for the success of this project. Fire Station #2 is the current fire station that would serve Cirrus Sky Tech Park. The City of Laramie should consider the benefits and costs of relocation to the study area.

f. Chapter 11 – Conservation: The proposed use for the study area (primarily for data centers) means that the area will become a massive energy consumer. However, the industry is particularly sensitive to its power usage and is therefore continually seeking ways to become more efficient. Other than security concerns, there are no particular needs for evening lighting for technology uses, so light pollution concerns should not be an issue. However, the City of Laramie should consider the impact of potential wind turbine towers, as it is clear that some data center companies are finding them to be highly beneficial. Wind turbine towers typically use a flashing light system to warn approaching aircraft, although some communities require wind farm operators to use synchronized blinking lights and/or a radar-activated switch system to minimize the use of such lights.

Albany County Comprehensive Plan – 2008

a. The planning team met with David Gertsch (Albany County Planner) about the plan and implications. His concerns and suggestions have been incorporated, including a concern that 9th Street has been recently rebuilt and there is no desire to tear it up again (to move it or otherwise).

b. The growth area located within one mile of the city is consistent with the City Comprehensive Plan. Both City and County plans reflect the same growth desires in the area, which makes the two plans very complementary.

Unified Development Code (UDC) – 2010

a. Chapter 15.06 Review Procedures: This chapter details review procedures and approval criteria for development applications. It will take 4 months to revise the zoning code (if needed) or to rezone land (if required by a particular business). The platting process contemplated by this plan is designed to maximize flexibility while preparing for an expedited process for prospective businesses to develop new facilities, by anticipating land adjustments (moving lot lines) and lot consolidations (combining lots). Subsequent adjustments like these can be accomplished administratively, in a matter of weeks. If the property is owned by the City, State Statutes provide for an expedited annexation process. This could provide a fast-track annexation time frame.

b. 15.06 – Once the property is annexed, subdivisions are typically completed in two steps including a Preliminary and a Final Plat. Using the final plat process to establish lot sizes tailored to each individual need or request provides the greatest degree of flexibility in this process. The key is that the Final Plat does not create more lots than what was preliminarily platted. The UDC also provides for a 10% change in size and number window without kicking in the full review process. A Land Adjustment or Lot Consolidation can be used to change the configuration of the already recorded plat, provided no public infrastructure or easements are modified. Both of these processes take about a week for administrative approval.

c. 15.10 - Use Regulations: The UDC does not currently have a "Tech Park" use designation. An amendment to this section to include a Tech Park and similar uses should be considered.

d. 15.14 – Development Standards: This section will play a part in how each lot site will develop, since the Cirrus Sky Concept Plan uses existing zoning definitions/districts. Parking, setbacks, landscaping, building design, fencing, and signage requirements should be shared with prospective companies looking to build there. Trails (greenways) have been incorporated into the concept plan to accommodate pedestrian circulation. Parks have been planned, including the eastern part of the study area where residential development will occur. Parkland dedication is not required for non-residential uses. Commercial and Industrial Design standards found in section 15.14.090 would not allow a large building with

only a few design elements to be built. The City of Laramie is considering a new Sign Code which will need to be complied with, along with fencing code compliance (15.14.100)

e. 15.16 Subdivisions: This section outlines specifically what is required with submittal of subdivision plats and explains the process and timing.

f. 15.18 Reimbursement for Improvements: Section 15.18.100D discusses the City's right to seek reimbursement for oversized public improvements that benefit other landowners. Section 15.18.110 covers agreements for development and delayed improvements.

Major Street Plan – 2011

The Cirrus Sky Tech Park concept plan is consistent with and builds upon the City/County street plan certified by WYDOT. Rights of way are proposed to be put on straight lines, located on already established section lines and quarter sections, and do not necessarily following natural topographic lines. This allows developers to know up front who is responsible for ROW dedications. Roadways proposed follow the required ROW widths for Minor Arterials (80 feet) and Collectors (80 feet). Any changes to the Major Streets Plan will need to be considered and approved by the Urban Systems Advisory Committee.

General Planning Issues

a. A Comprehensive Plan Amendment will be required for the new planning area, including changes to Map 3.2, to incorporate Future Land Use changes.

b. A Comprehensive Plan Amendment will be required for the new planning area, including changes to Map 7.2, Urban Growth Area, since areas of the immediate development area planned are outside the already established growth area.

c. A code amendment will need to occur that allows Comprehensive Plan Amendments at any time, versus the current bi-annual time frame. This is in keeping with the "shovel-ready" needs of potential data centers and other businesses looking to relocate to Laramie.

d. An amendment to the Albany County Comprehensive Plan will be needed to change future land use and growth areas. Creation of a new commercial node may also be necessary if the county feels that is appropriate.

e. This plan takes a long-term, big picture approach in regards to improving water and sanitary sewer for the study area, so that service is improved for the entire north end of the community.

f. Surface water drainage has been considered and appropriately planned as part of this proposal. Consideration has been given to the need for regional detention areas at either end of the study area. These areas have been strategically placed and designed to become a "green" component of the plan; using such areas to create buffers within the planning area.

g. This plan is respectful of the City's huge investments in the solid waste management facility, and proposes uses that are compatible with the solid waste management facility's ongoing

operation. The concept plan creates an industrial/commercial buffer entirely around the solid waste management facility site.

h. Railroad connectivity is neither needed nor desired by the types of businesses targeted for the Cirrus Sky Tech Park.

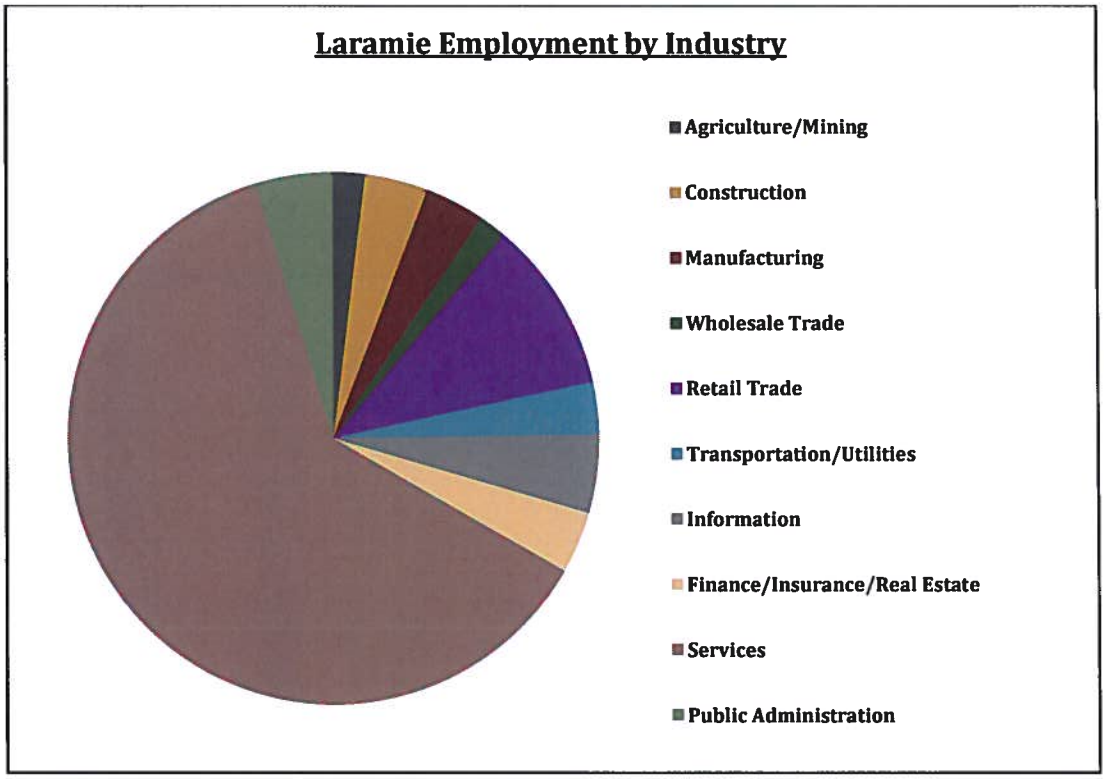
i. One of the smaller power lines that traverses the Phase I Site (i.e., the Rocky Mountain Power local feeder line that feeds the WAPA substation) should be moved so that it is immediately adjacent to the large WAPA power line that runs westerly out of the WAPA Snowy Range substation. Moving that line allows larger lots to be created when the Phase I Site is subdivided, making the development much more efficient and less costly.

Laramie Profile

The City of Laramie, Wyoming, is a municipality of approximately 31,000 residents. It sits on the eastern edge of the Laramie Plains plateau, surrounded by the Snowy Range Mountains to the west and the Laramie Mountains to the east. Laramie is located 45 miles west of Cheyenne, Wyoming along the I-80 corridor at an elevation of 7,220 feet. Laramie is home to the University of Wyoming, Laramie County Community College (Albany County Campus) and the Wyoming Technical Institute. The strong influence of academia provides a very progressive and global character to Laramie's identity.

BUSINESS ENVIRONMENT

The towering presence of the University of Wyoming and other secondary education institutions is clearly evident in the significance of the Service sector in the local economy. The graph below shows that 62% of local employment is in the Service sector.



Source: Wyoming Department of Workforce Services.

A key goal, therefore, of the Cirrus Sky Tech Park is to diversify the economy. By targeting technology industries – including the more specific target of data centers – the community hopes to diversify and stabilize the local economy. The technology sector was chosen in part because of the growing presence of technology companies in Laramie that benefit from the expertise and graduates emanating from the University. Special efforts are currently being made to purposefully build linkages between existing technology firms, educational institutions, and the infrastructure needed to support a technology economic cluster. Development of a

shovel-ready site will necessitate more infrastructure improvements (fiber and power especially) and more linkages – all designed to further advance this important industry cluster.

In 2011, the Wyoming Department of Employment reported that there were 4,650 technology-related jobs in Wyoming, which paid an average annual wage of $59,535. In contrast, Albany County's average annual wages are $36,582 (61% of the wages paid in technology fields).

In addition to the growing technology sector in Laramie, many businesses benefit, or even depend upon, high-speed telecommunications. These businesses have expressed a strong desire to access faster bandwidth and higher capacity. Development of redundant fiber optic rings that connect the community to any of the eleven long haul telecommunication fiber routes just outside of the city could greatly help all such existing businesses grow.

COMMUNITY PRIORITIES

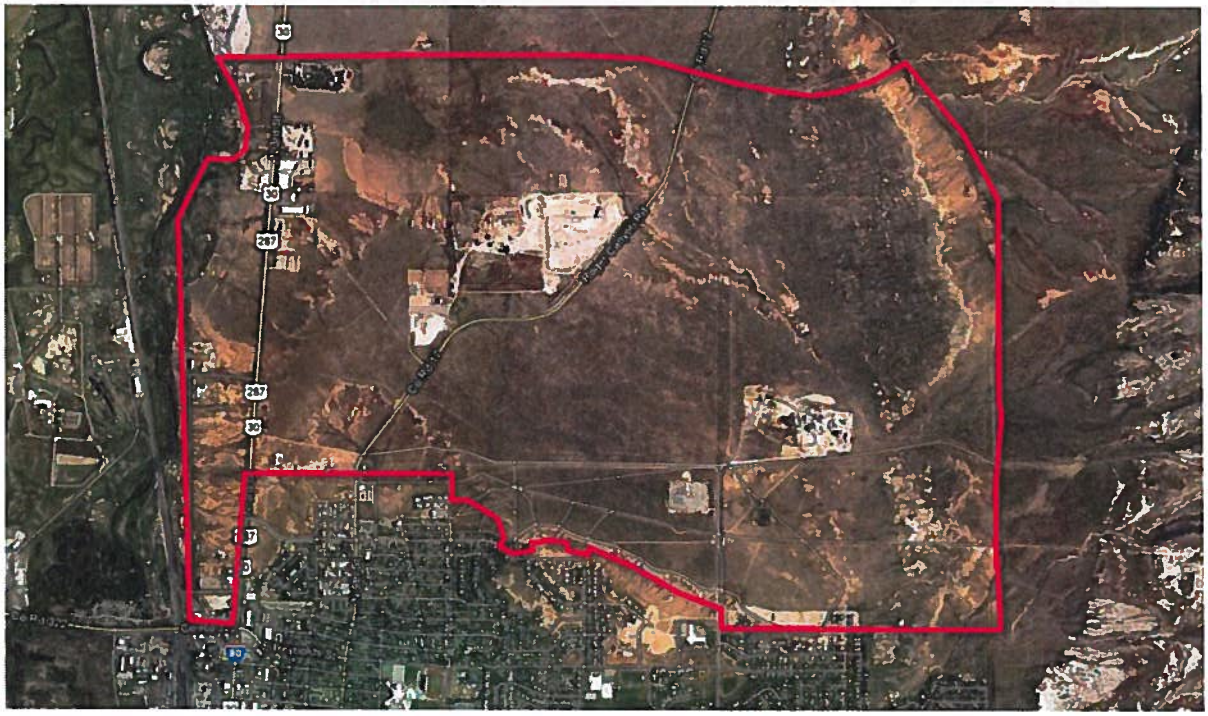
The City of Laramie has identified several priorities for the community. A strong downtown, a diversified economy, good infrastructure, and "green" environmentally friendly development are common themes. The community has several projects that are underway to improve its streets, the solid waste management facility, the University, and the airport. Accordingly, this project will need to identify and pursue grant funding to develop the Cirrus Sky Tech Park in a manner that does not disrupt or jeopardize those other important projects.

Goals of the Future Land Use Plan

a. Create a business environment in north Laramie that is suitable and attractive to: data centers; high tech businesses; research & development institutions; and other compatible uses.
b. Maximize flexibility to allow for a variety of development options.
c. Add value to greatest amount of property with an efficient extension of the public infrastructure
d. Make available a series of "shovel ready" and "business-ready" sites.
e. Incorporate existing natural features into the plan.
f. Extend the existing city trail system through proposed green spaces, along roadways and into developed areas providing a safe alternative to driving.
g. Allow people to live close to their workplace.
h. Promote sustainability.
i. Create a source of community pride and build upon Laramie's community values

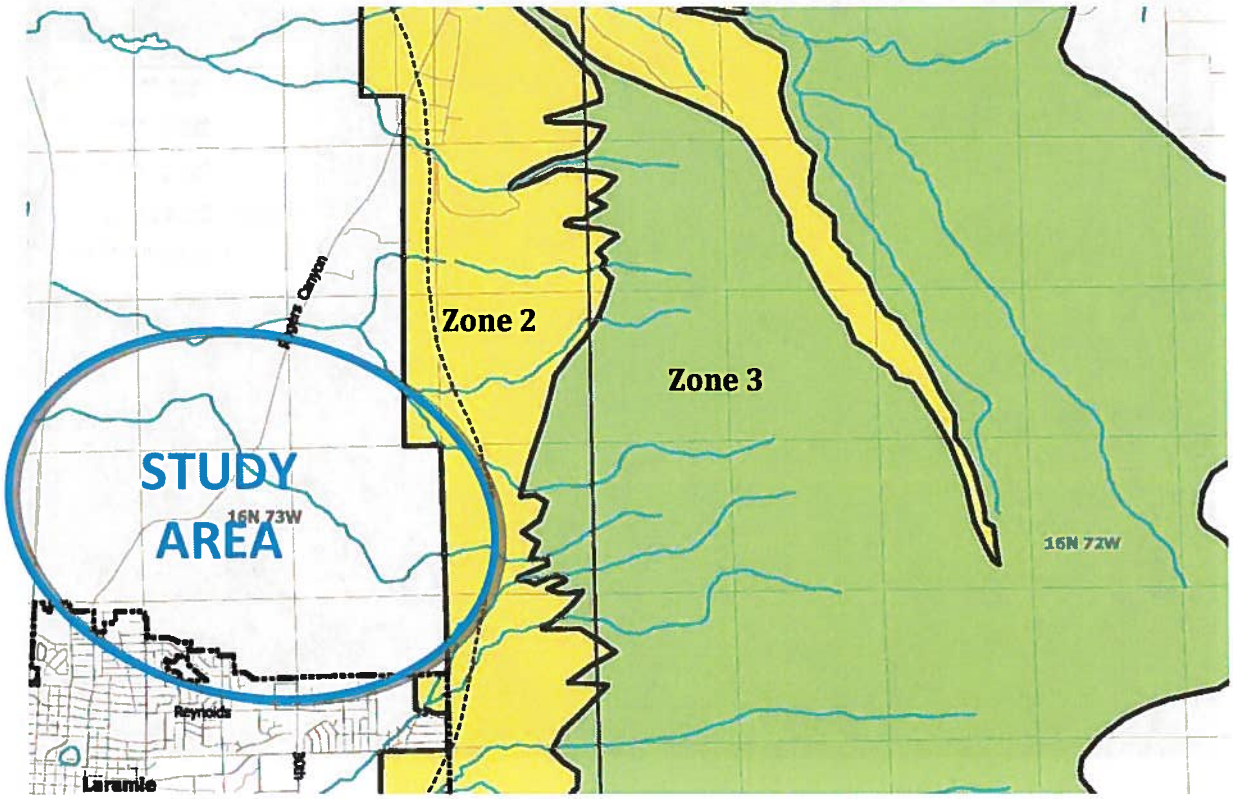
Planning Considerations & Influences

NORTH LARAMIE EXPANDED STUDY AREA



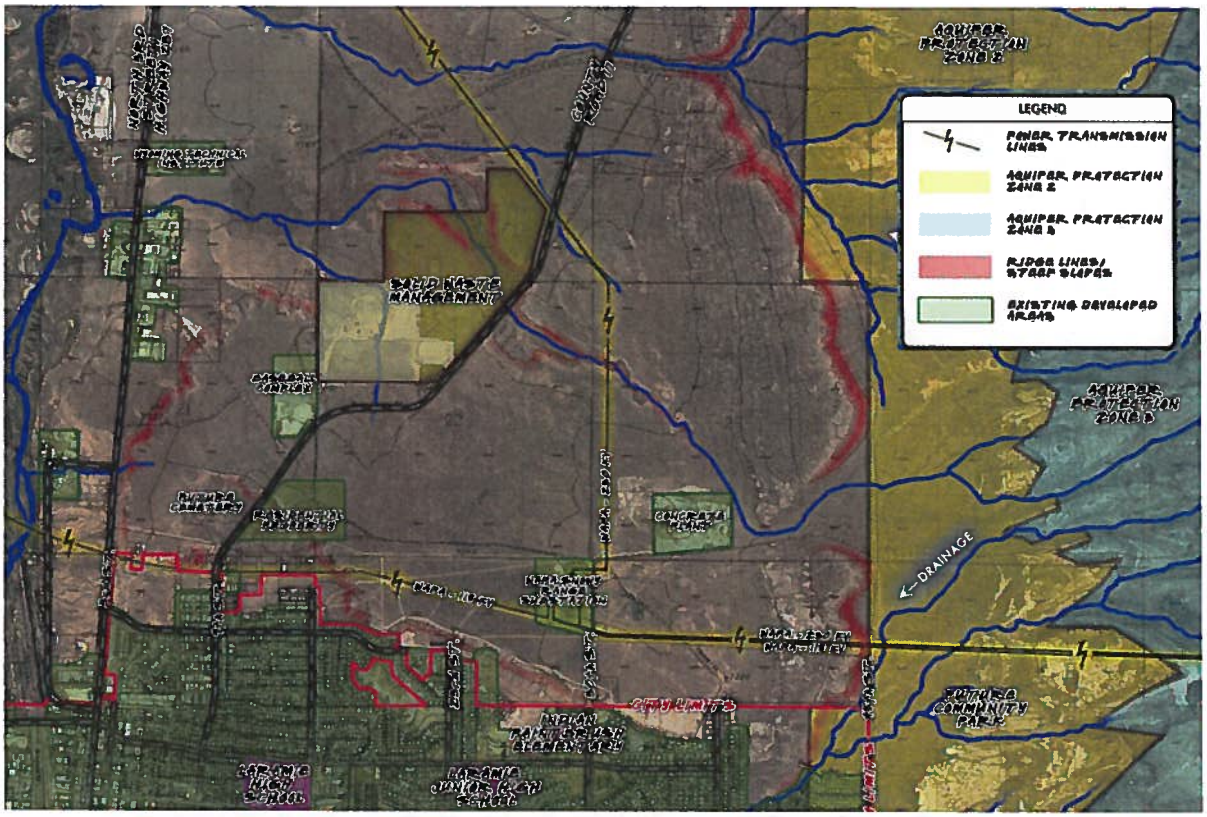
- West Boundary –The Laramie River
- North Boundary – Approximately 1.5 miles north of the existing city limits. Generally follows northern boundaries of City of Laramie Solid Waste Management Facility and Cathedral Home for Children properties
- South Boundary – Existing City Limits
- East Boundary – 45th Street

CASPER AQUIFER PROTECTION PLAN



The Casper Aquifer Protection Plan (CAPP) illustrates areas designated as Zone 2 and Zone 3 abutting the east edge of the North Laramie study area. Zones 2 and 3 are designated as the "primary and secondary zones of protection, respectively." Accordingly, development is not illustrated within these areas.

The purpose of the CAPP is to protect the recharge area of the Casper Aquifer, which supplies all of the water to rural residences in Albany County and approximately 60% of Laramie's water supply on an annual basis. The Casper Aquifer Protection Area encompasses approximately 72 square miles that lie east of the City of Laramie and extends to the crest of the Laramie Range. The north and south boundaries are approximately 5 and 6 miles north and south, respectively, of Laramie city limits. The full CAPP Plan report can be found on the City of Laramie's web site using the following link: http://www.ci.laramie.wy.us/index.aspx?NID=226



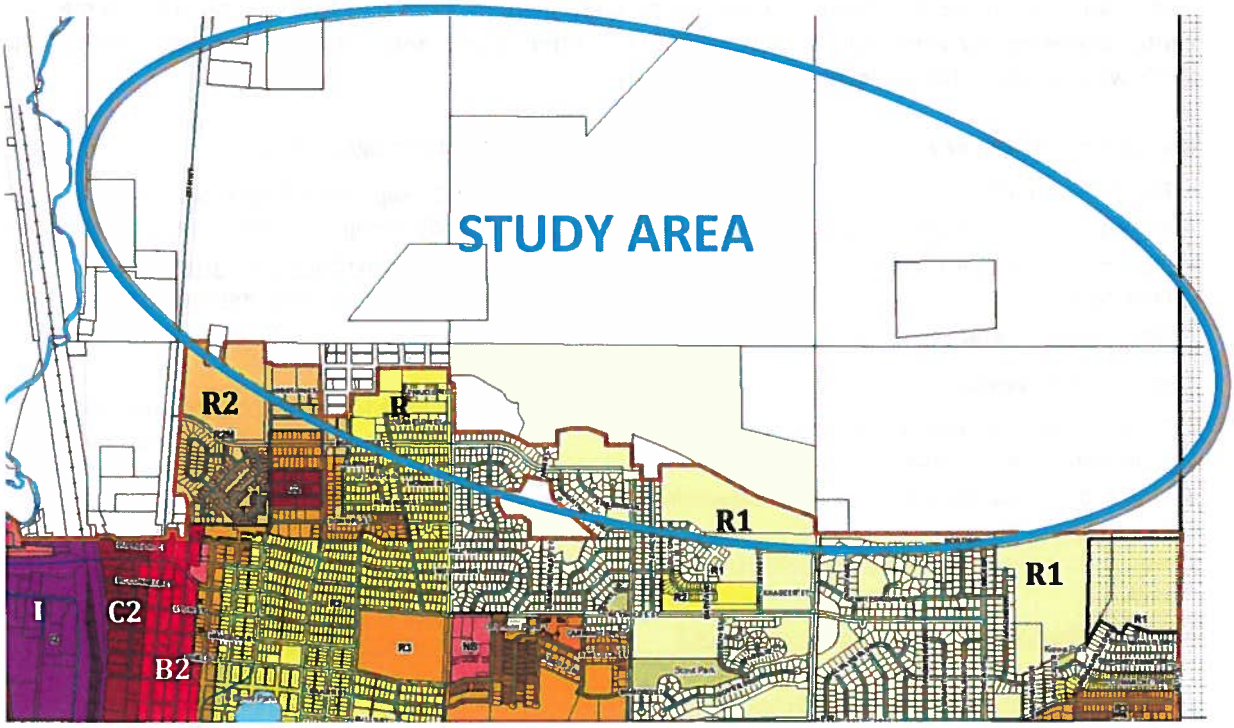
NATURAL FEATURES

The study area includes several significant natural features that contribute to the character and visual interest of the area including: A ridge which forms the south edge of the study area; a pair of prominent hog backs/ridges in the eastern reaches of the study area; a meandering drainage way flowing between the hog backs extending to the northeast; and a sink, or closed drainage basin, that formed naturally east of 30th Street. The dominant landscape character is best described as "high plains grassland". Nearly all of the naturally occurring trees within the study area are found along the Laramie River corridor.

EXISTING DEVELOPMENT AND MAN-MADE FEATURES

- Power/Transmission Lines – Snowy Range Substation, WAPA Transmission Lines, RMP Lines
- Laramie Solid Waste Management Facility – Land Use Buffering and Visual Buffering needed
- Concrete Mix Plant
- Spur Wellfield Water Line –extending north along future extension of 30th Street
- Rogers Canyon Road – existing paved County road, recently improved.
- Baseball/Recreation Complex – property owner has plans for a future expansion.
- Steiner Property – open space with one single family residence.

EXISTING CITY ZONING



City of Laramie Zoning Map

- Existing zoning along the City of Laramie's northern boundary, east of Hwy 287, includes Residential uses (zones R1, R2, and R2M).
- Existing zoning along the City of Laramie's northern boundary, west of Hwy 287, includes Business (B2 - red), Commercial (C2 - maroon) and Industrial (I2 – purple) uses.

DATA CENTER BUFFER REQUIREMENTS

The Laramie Economic Development Commission collected data from past RFP's (5) regarding large data center preferences /restrictions/requirements, i.e., buffer zones. Below is the direct wording from the RFP's with regard to the preferred buffer distances.

Distance from highways:

- Project A – 1 mile
- Project B – Not less than 100 yards
- Project E – Cannot be closer than 1 mile from Interstate
- Distance from highways to Cirrus Sky - 2.5 miles

Distance from airports:

- Project B – Not less than 5 miles or more from 30 miles from an active airport runway
- Project D - Site cannot adjoin airport or be within a direct flight path
- Project E – Cannot be closer than 2 miles from an airport
- Distance from airport to Cirrus Sky – approx. 4.5 miles to dev. area
- Relation to flight paths – None within boundaries

Distance from railroads:

- Project A – 1 mile
- Project B – Minimum of .5 miles from an active rail line
- Project D – No railways allowed within 1 mile of the site
- Project E - Cannot be closer than 1 mile from long haul rail
- UPRR mainline crosses SW part of area; dev. Acreage 1.1 mi. to east

Distance from residential, school or churches:

- Project C - 1 mile
- Project E – .5 mile
- Distance from residential to Cirrus Sky – Adjoins southern project boundary; physical barrier (ridgeline) intervenes
- Distance from school to Cirrus Sky – Adjoins southern project boundary; physical barrier (ridgeline) intervenes
- Distance from churches to Cirrus Sky – Adjoins southern project boundary; physical barrier (ridgeline) intervenes

Distance from agriculture:

- Project C – Separation from agricultural uses – specifically during planting & harvest to avoid dust
- Distance from agriculture to Cirrus Sky – Ranchland adjacent; cropland over 3 mi. distant

Distance from flood plain:

- Project B - Not less than 100 yards from 100 year flood and 50 yards from 500 year flood hazard area.
- Project C – At least 10' above the 500-year flood plain
- Distance from flood plain to Cirrus Sky – 100 year and 500 year – western edge is Laramie River; developable acreage generally 0.5 miles or more to east

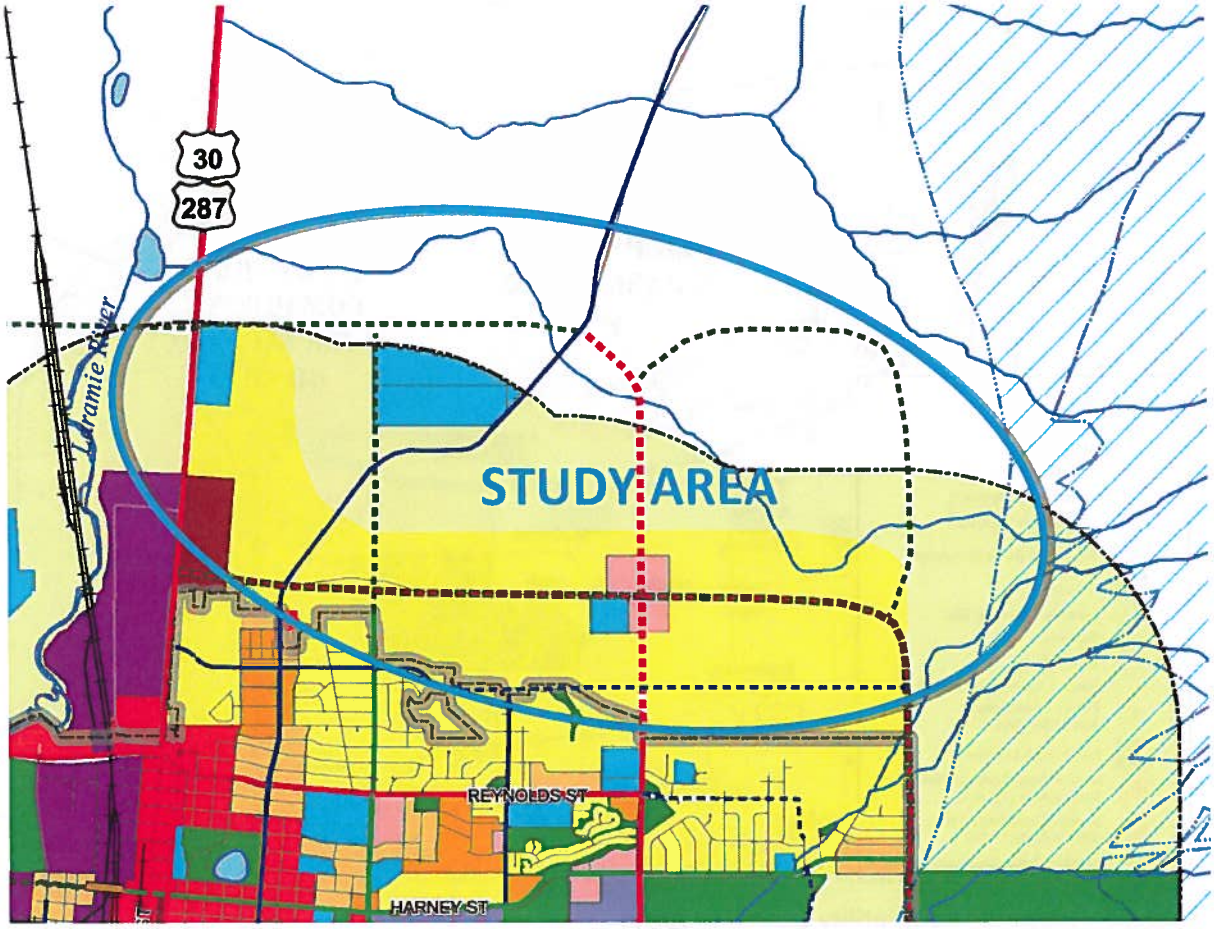
Distance from quarries/hazardous uses:

- Project A – 1 mile
- Project B - .5 miles from a nuclear power plant, .5 miles from industrial complexes that involve nuclear, biological or chemical hazards in their operations, and 5 miles from potential terrorist targets (political, military, historical and high profile locals).
- Project E – 1 mile
- Distance from quarries/hazardous uses to Cirrus Sky – None within 2.5 miles

With regard to natural disaster risks:

- Project B – Minimal risk to operations from floods, winds, tornadoes, hurricanes and seismic activity - Proximity to seismic activity, not less than 100 yards
- Project C – No seismic issues, threat of tornadoes, tsunami, hurricane, typhoon, dust storms
- Natural Disaster risk to Cirrus Sky: No natural disaster risks identified within 5 miles

CITY COMPREHENSIVE PLAN

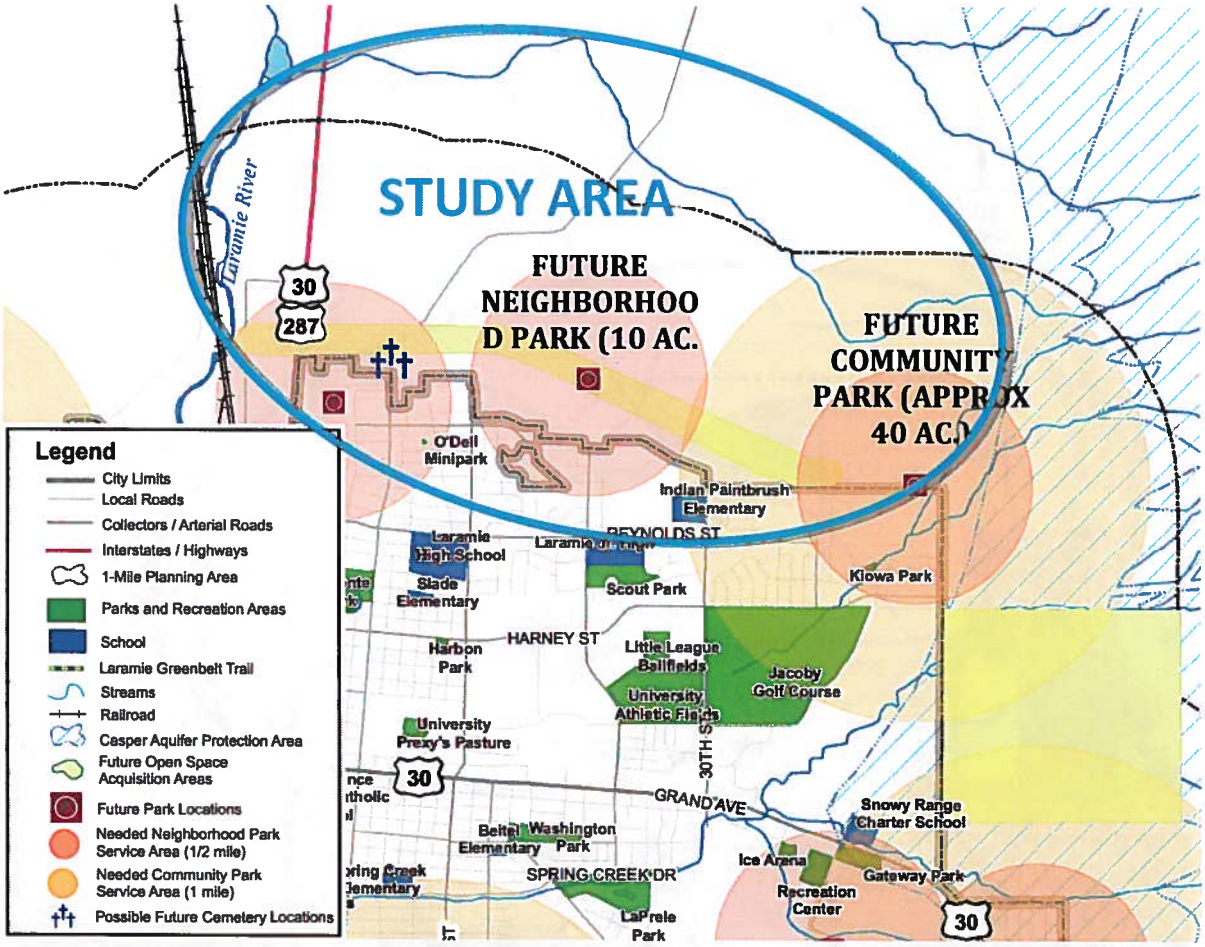


Map 3.2 – Future Land Use

Laramie's Future Land Use Map (above), found in the Comprehensive Plan, includes only a small portion of the study area, as much of the property is currently over 1 mile from the City's incorporated boundaries. The FLU Map currently envisions identified land uses within the study area as:

- "Suburban Residential" - yellow
- "Agriculture" - light green
- "Suburban Commercial" - pink.
- "Public/Institutional" (Land Fill, Switch Station) – blue

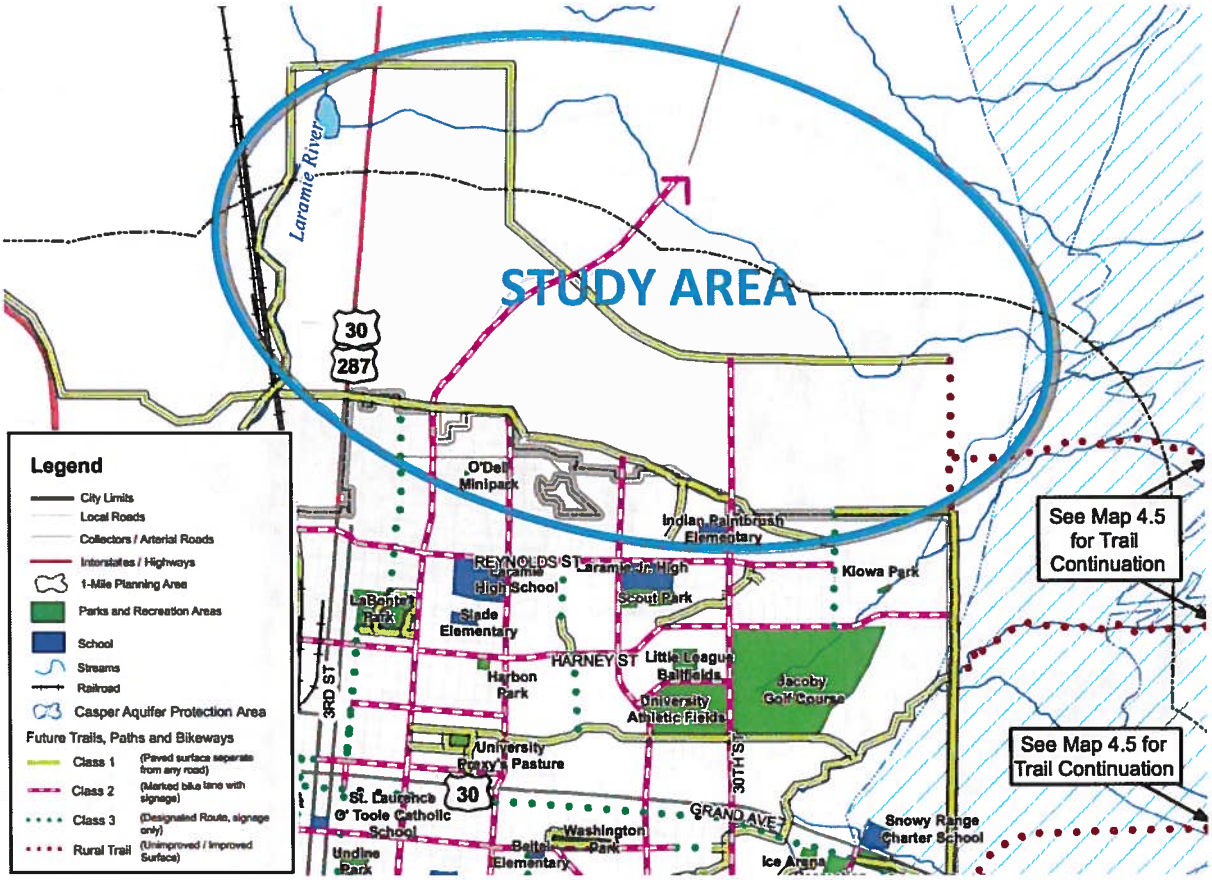
Recommendation – This map should be amended based on the revised Land Use Plan herein.



Map 4.3 – Proposed Park Facility Expansion Areas

Map 4.3 indicates that two public parks are needed and desired in the study area. One park should be a Community Park (~40 acres) and the other a Neighborhood Park (10 acre Minimum).

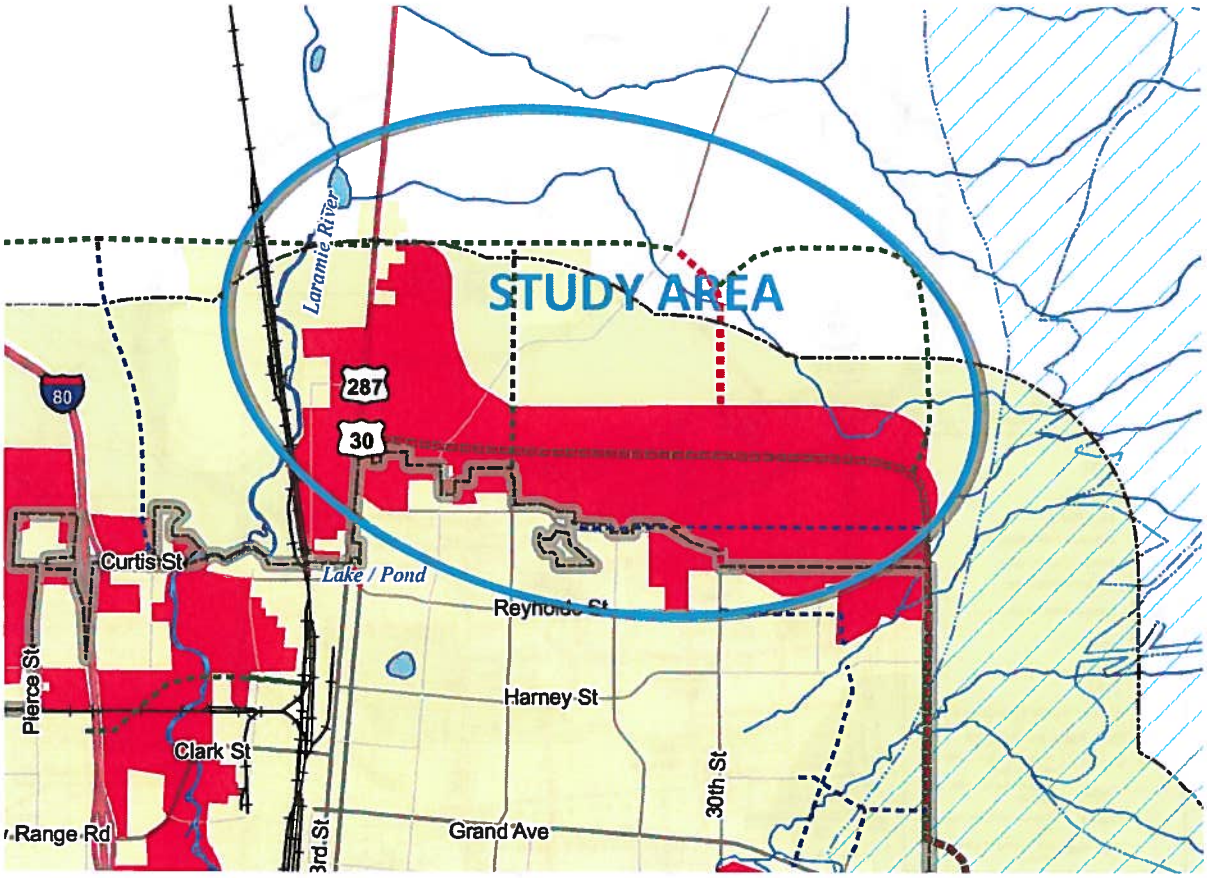
Note: an Ad Hoc Committee is presently examining future park and open-space needs in the City and vicinity, in preparation for an updated Parks, Trails and Recreation Master Plan; that Plan may modify these recommendations.



Map 4.4 – Bicycle and Trails Master Plan.

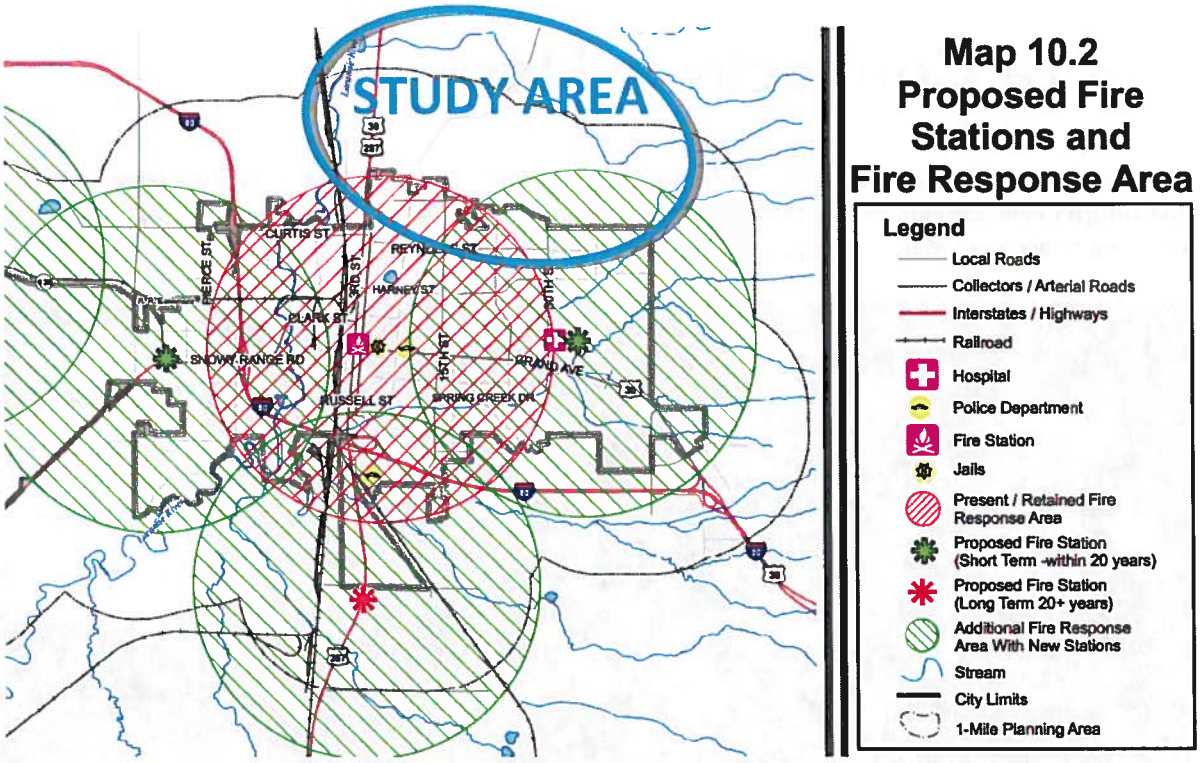
This map illustrates future trail connections within the study area. At the time the plan was developed, a "ridgeline" trail was desired and still is. However, with no enforceable code in place requiring construction of the trail, recent development proposals have reduced the possibility of a creating a continuous east/west tail along the ridgeline. A trail connection from 30th Street to 15th, 9th, or even North 287 is still desired.

Note: See note for Map 4.3. A principal landowner in the Cirrus Sky core area and the City have agreed that a trail connection along the ridgeline at the current north City boundary is an essential component of the project.



Map 7.2 – Urban Growth Area

Map 7.2 shows the areas that should be annexed and zoned if desired to be developed. The study area extends outside of the current Urban Growth Area as it is defined today. Amendments to this map will be needed as areas outside the UGA boundary are identified for immediate growth.



Map 10.2 Proposed Fire Stations and Fire Response Area.

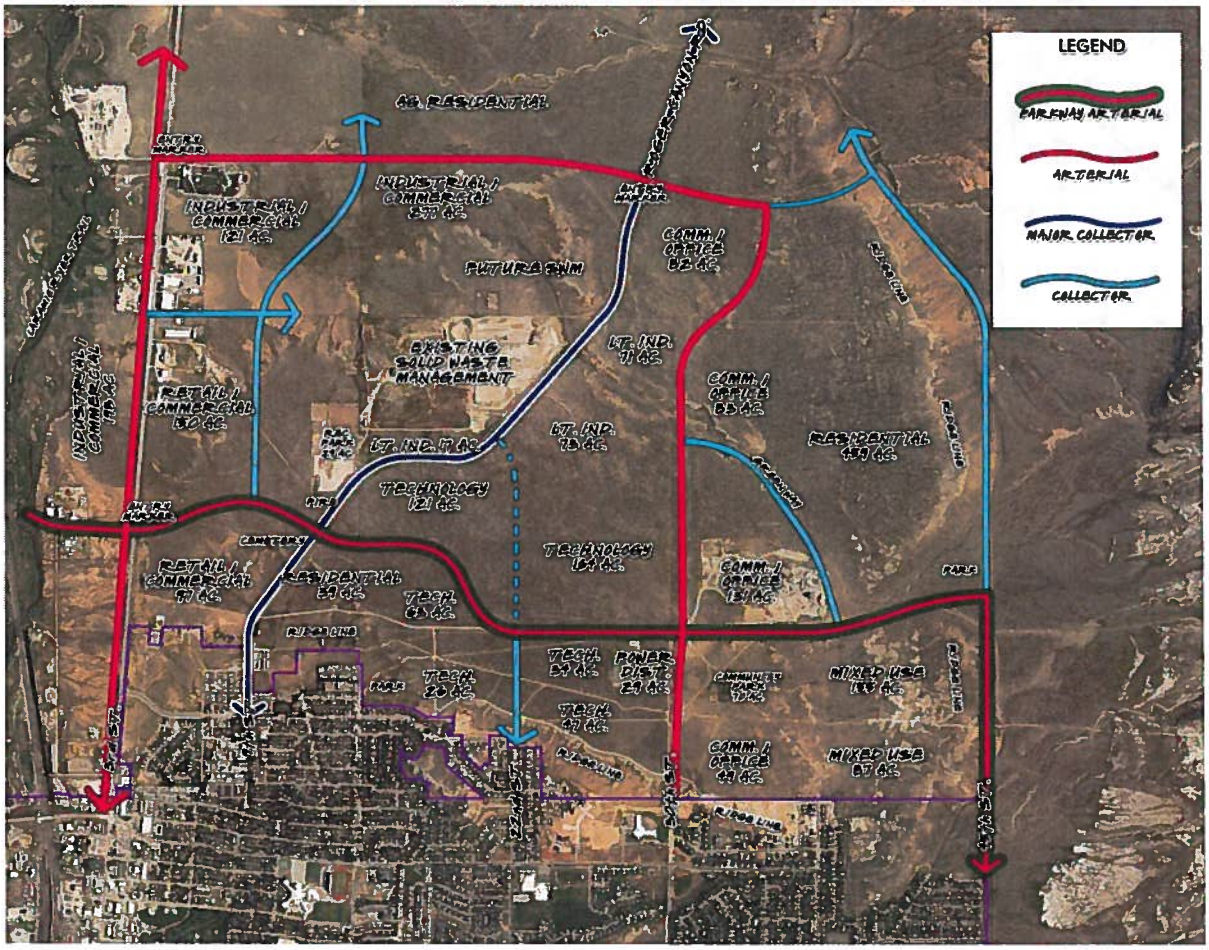
The majority of the North Laramie study area is outside of the proposed response areas as shown above. Fire Station #2, located at 1558 N. 23RD Street, currently serves the study area.

Recommendation - Any new fire station in the area should be planned in alignment with expected growth and development in this area.

Future Connectivity Plan

FUTURE STREETS

In order to properly plan streets for the Cirrus Sky Tech Park, it is important to study a larger area, so that future developments can be taken into consideration. Accordingly, streets will be properly aligned and sized to accommodate future growth, as suggested in the map below.



a. The image above illustrates the vision for the major street network in North Laramie. Additional collector and local streets will be required as development occurs.

b. The major street pattern has been planned with the goal of preserving large tracts of land allowing for a variety of development options and potential users.

c. Existing north/south city streets (22nd, 30th and 45th Street) will be extend north into the study area.

d. Asphalt Lane, a major east/west connection in the study area, is envisioned as a "Parkway Arterial" or "Boulevard" meaning that its character will have a greater emphasis on green spaces and landscape. Street improvement will include raised landscaped medians and broader setbacks.

e. Arterial Streets (illustrated in red) include Hwy 287, 30th Street and a proposed east/west street abutting the north edge of Cathedral Home for Children, which extends east to 30th Street.

f. Collector Streets (illustrated in light blue) include Rogers Canyon Road, 45th Street north of Asphalt Lane, 9th Street north of Asphalt Lane, 22nd Street.

g. Streets will be designed and constructed to meet the latest edition of the City Street Standards.

STREET DESIGN OVERVIEW

The proposed streets are oriented and designed to maximize connectivity through and around the master planned site (Exhibit E). Multiple roads will be constructed across the property having various widths and designations in order to maximize the connectivity to the City and areas to the north. A bike friendly environment is provided within the road sections. The majority of the roads will be constructed with future development. The road designations and their components are described below (See Figure 1).

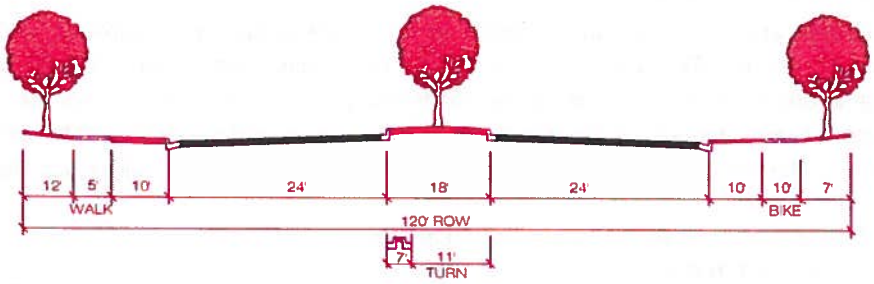
- Principal Arterial- Asphalt Lane Road (East - West
  - 120-ft ROW
  - Two 12-ft lanes in each direction
  - An 18-ft Boulevard section
  - A 10-ft detached bike path on one side
  - A 5-ft detached sidewalk on the other

- Secondary Arterial (30th Street (South – North)
  - 100-ft ROW
  - Two12-ft lanes in each direction
  - One 10-ft detached bike path on each side
  - One 5-ft detached sidewalk on the other

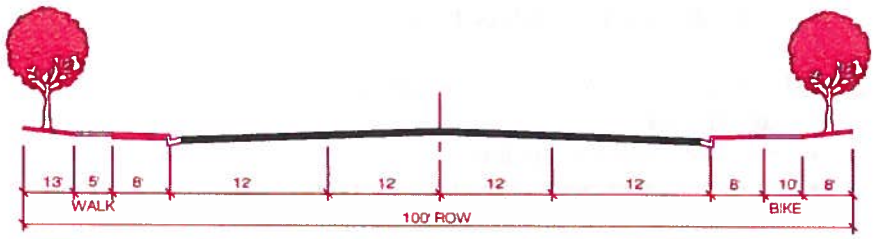
- Commercial Collector (22nd Street and others (South to North)
  - 72-ft ROW
  - One 11-ft travel lane in each direction
  - One 6-ft bike lane in each direction
  - 8-ft parking lane on both sides
  - 6-ft parkway on both sides
  - 5-ft detached sidewalk on both sides

- Local Street- (Access to WRI property from 287 and others) – typical City of Laramie Street
  - 60-ft ROW
  - One 12-ft travel lane in each direction
  - 8-ft parking lane on both sides
  - 5-ft attached sidewalk on both sides

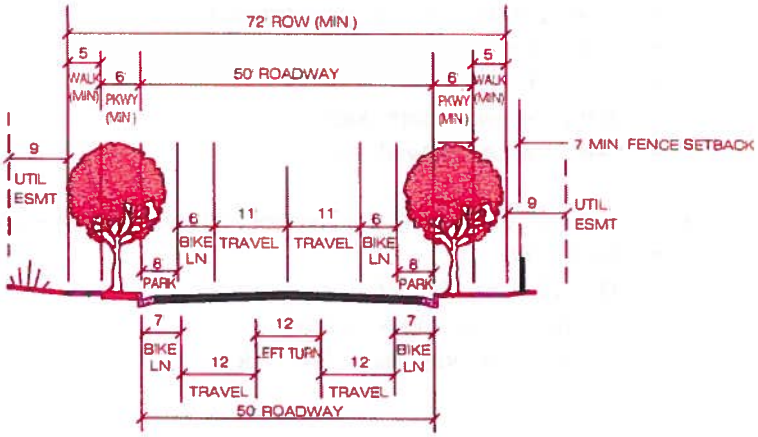
RECOMMENDED CROSS SECTIONS



PRINCIPAL ARTERIAL (PARKWAY)



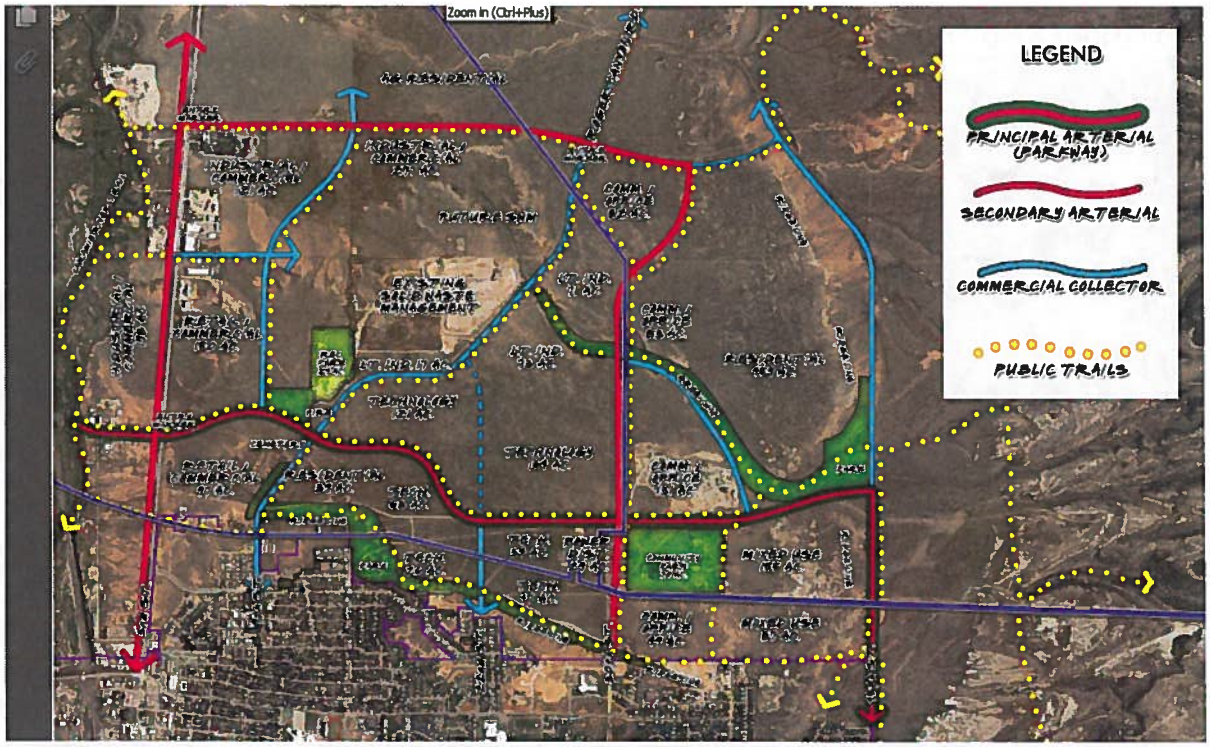
SECONDARY ARTERIAL



COMMERCIAL COLLECTOR

FUTURE TRAILS, GREENWAYS AND PARKS

Pedestrian and bicycle trails should be extended throughout the study area providing an alternate means of transportation, linking to the Laramie River Trail, Spring Creek Trail, open space east of the City and to existing developed areas within the city.



a. Greenways are planned along the ridge and the existing drainage way, providing trail links to public parks and to the surrounding residential and non-residential areas.

b. A community park is illustrated as a possible feature, along with other uses, in the low area southeast of the future intersection of 30th Street and Asphalt Lane. The existing topography is this area poses some challenges for urban development, but is well suited for a park.

c. Two Neighborhood Parks (10-acre min) are planned within the study area. One is located immediately southwest of the Phase I Site and the second is located northwest of the future intersection of 45th Street and Asphalt Lane. Both parks are located within or in close proximity to existing and future potential residential areas.

d. Land has been identified for an expansion of the existing Baseball Complex. The exact size, location, and programming associated with the expansion will be determined at a future date.

e. A comprehensive network of on-street and off-street trails are planned with the study area. Off-street trails are generally located along proposed greenways and within existing power line easements. The trail system provides links to the City's existing Greenbelt Trail system, including the Laramie River Trail and the Spring Creek Trail, and to trails within Albany County east of the City limits.

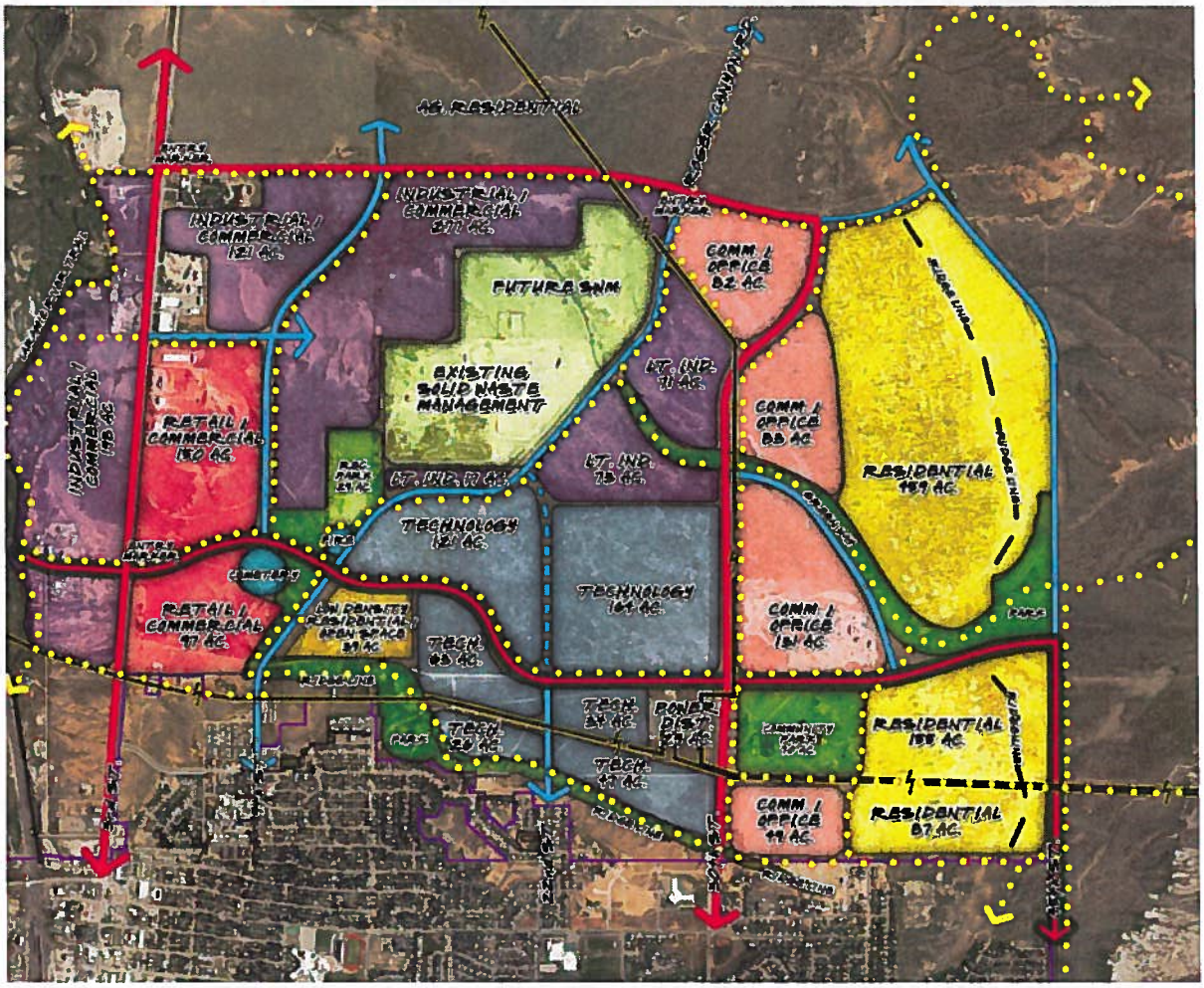
f. Bike trails/lanes associated with Arterial and Collector Streets are planned as follows:

- Principal Arterial (Asphalt Lane) – 10 foot detached bike path on one side
- Secondary Arterials (30th Street) – 10 foot detached bike path on one side

- Commercial Collectors (22nd, 45th Street, etc.) – On-street 6 or 7-ft bike lane in each direction.
- Local Streets – bicyclist share roadway with motorists

g. Greenway trails are envisioned as multi-purpose trails made up of a 10' wide paved surface and a 4' wide soft trail.

FUTURE LAND USE PLAN



a. Proposed land uses within the study area generally transition from Commercial and Industrial along Hwy 287, to Tech/Industrial/Commercial uses within the central area, to Residential uses in the east.

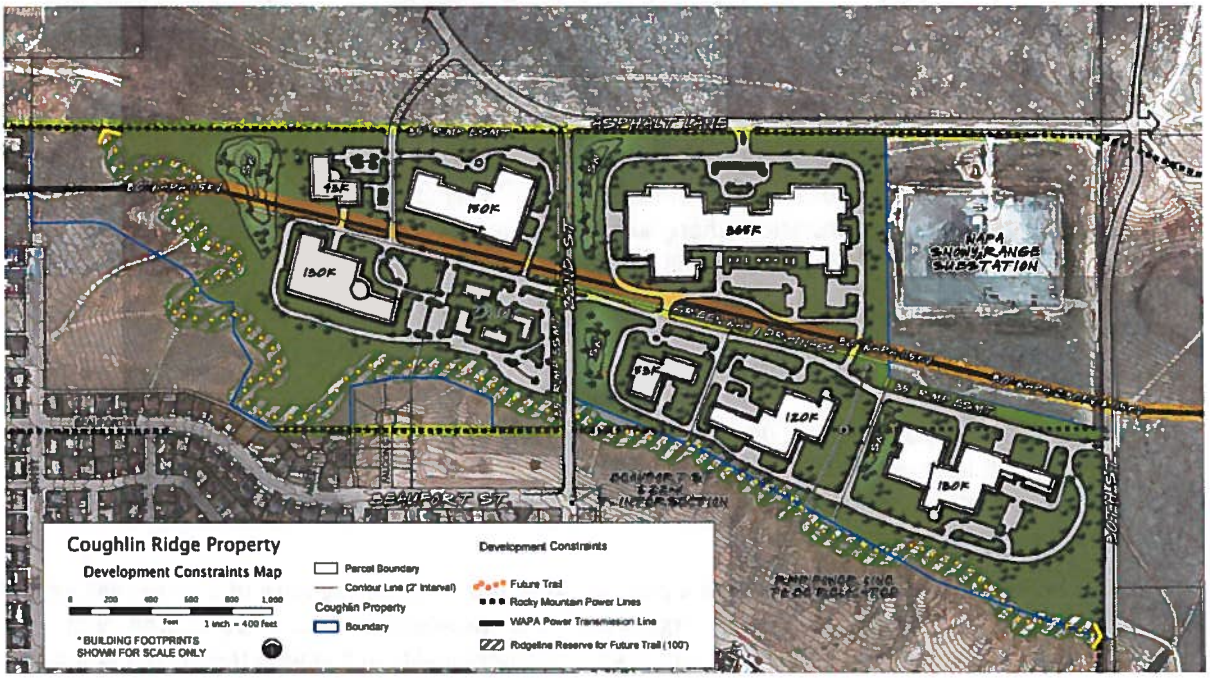
b. Generous buffers are provided between Tech uses and Residential/ Schools/Church uses

c. Tech uses are located in close proximity to the Snowy Range Substation.

d. A future fire station is illustrated near the intersection of Rogers Canyon Road and Asphalt Lane to improve protection and response times within North Laramie.

e. The City's Solid Waste Management Facility is ringed with industrial/commercial uses on the north, west, and south sides. A combination of berms, screen fencing, and landscaping should be provided along the entire boundary of the Solid Waste Management Facility to create an attractive edge along Rogers Canyon Road and to provide screening from adjacent development sites.

PHASE I – CIRRUS SKY TECHNOLOGY PARK



Phase I Design Considerations

a. The Phase I Site is approximately 150 acres in size, and the southern property line is contiguous with the existing city limits.

b. The City may want to consider dividing the Phase 1 site into 3 or 4 individual lots prior to annexation. Albany County allows 35 acre and greater lots to be created using a simple warranty deed, without lengthy subdivision requirements. A deed generally takes one day to process at the county. This approach could save great deal of time. This issue should be balanced against present and development future needs as may be required or desirable under the City's Unified Development Code (UDC).

c. Existing and proposed site features suggest potential lot line locations along 22nd Street extended and paralleling the WAPA Power line, creating 3 or 4 individual lots.

d. Subdividing the property would allow the City to annex individual parcels, or the entire property.

e. WAPA's Snowy Range Substation abuts the east edge of the property and provides a convenient and ideal power source for users with significant power needs.

f. A 115Kv WAPA power line extends northwest from the Snowy Range Substation through the Phase I Site, and is located within a 75' easement.

g. Rocky Mountain Power owns and operates two 13.2Kv power lines that run through and adjacent to the Phase I Site. Based on preliminary discussions, these lines are located within 35' easements. In order to maximize the developable area, it is recommended that the south line be relocated so as to generally parallel the WAPA line until meeting 22nd Street and then will follow the west ROW line of 22nd Street south and reconnect to the existing line heading west.

h. 22nd Street (80' ROW) will be extended north through the property to connect with Asphalt Lane, and possibly beyond in a future phase. Extending 22nd Street provides convenient access to the Cirrus Sky Tech Park from areas south of the ridge, as well as a direct connection to Fire Station #2.

i. 30th Street will also be extended north providing a second point of access for the Cirrus Sky Tech Park. The Phase One limits of the 30th Street extension will be based on proposed development. 30th Street phasing options include: 1) extending 30th north to the south property line of the WAPA Snowy Range Substation where it would connect with a local street within the property; and 2) extending 30th Street to Asphalt Lane.

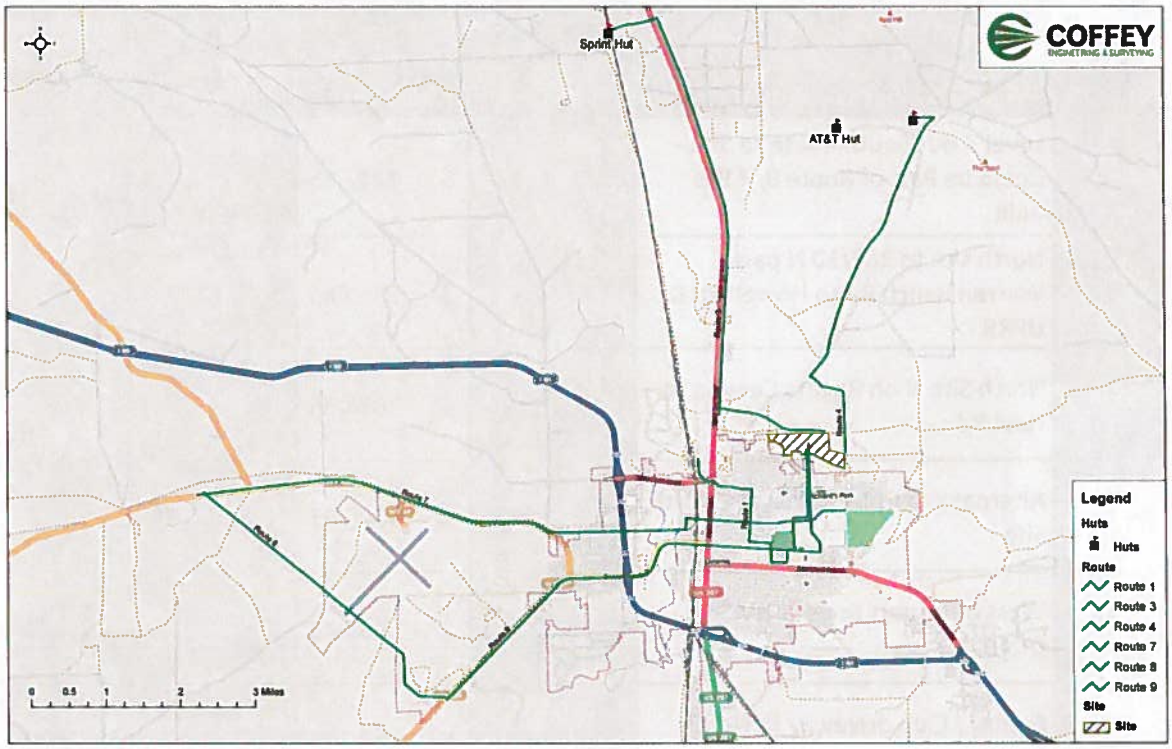
j. A greenway and trail will extend along the ridgeline at the south edge of the property within an approx. 100-foot wide corridor. "Private" trail connections, within the Cirrus Sky Tech Park, should be incorporated into future developments.

k. The Urban Land Institute developed ten innovative guiding principles for sustainable and integrated large-scale development with the aim of influencing future development. A few of these principles are echoed below and should be considered as implementation of the technology park moves forward.

- **Create Great Places.** Adopt a place-making approach through use of a place-making and sustainable approaches, large-scale new development can work well with the surrounding area to create a character and personality in line with the district vision.
- **Open up public spaces/Provide accessible public open space.** Public spaces in private developments are usually of higher quality than other public open spaces, but may not be accessible to the public at all times. Developers gain concessions for providing public spaces in private projects, so these areas should be clearly identified, and physically and visually accessible from the street. Public open space should also be provided at grade and linked to open space at upper levels. If it is not possible to provide a direct view of the public areas at upper levels, a clear wayfinding system should be provided.
- **Promote Sustainability** - Go beyond sustainable building design. During planning, the focus should not be solely on the sustainability of buildings within the development; it should also consider the development's integration with the adjacent areas, and its impact on the district and the city as a whole.
- **Manage, Control, and Coordinate** - Implement coordinated management control. A development with multiple owners can contribute to diversity, but one owner with multiple designers can also contribute to diversity. The key is coordinated management control, whether that management is by the public or private sector, or involves a single developer or multiple developers.

Future Fiber Telecommunications Plan

Several fiber routes, connecting the Cirrus Sky Tech Park to the long-haul fiber routes that currently run through or near the City of Laramie, have been designed by TMNG Global. Depending on a prospective company's needs, one or more of the routes can be developed very quickly (3 to 4 months), if they are pre-planned (including development of engineered drawings, rights of way, easements, and permits). These routes are shown in the map below.



Any of the fiber routes shown above can be strategically routed through particular parts of the community to enhance existing broadband connectivity. That routing can be accomplished just before the fiber is actually installed (rather than now) to fully maximize the immediate impact of each route as it is developed.

Development costs for each fiber route is estimated in the table below, including a "best case," "high case," pre-plan and route assessment only estimates for planning purposes. These costs can be fine-tuned during the pre-planning effort (i.e., when each route is engineered and better costs estimates created).

SELECT FIBER ROUTES

Route #	Proposed Fiber Location	High Case	Best Case	Pre-Plan Only Case	Route Assessment Only
1	Level 3 Hut South Route to Site - Could be Part of Route 9, if 9 is built	$ 543,223	$ 484,615	$ 271,119	$ 8,279
3	North site to 287/30 N past Warren Ranch Rd to Howell Rd & UPRR	$ 752,900	$ 586,664	$ 64,350	$ 17,790
4	North Site N on Rogers Canyon to Haul Rd	$ 474,659	$ 367,485	$ 31,389	$ 7,958
7	Alternate to Rt 5 - Airport to North Site	$ 1,149,823	$ 922,797	$ 84,370	$ 17,673
8A	West of Airport to Country Club Driveway	$ 438,977	$ 365,446	$ 70,313	$ 8,330
9	Country Club driveway to North Laramie Site	$ 778,740	$ 617,260	$ 86,205	$ 11,962
	Totals	$ 4,138,324	$ 3,344,271	$ 607,748	$ 71,992

Infrastructure Improvements

Coffey Engineering, TMNG Global, and the City of Laramie have worked together to plan for various improvements to the water, sewer, and drainage of the Cirrus Sky Tech Park.

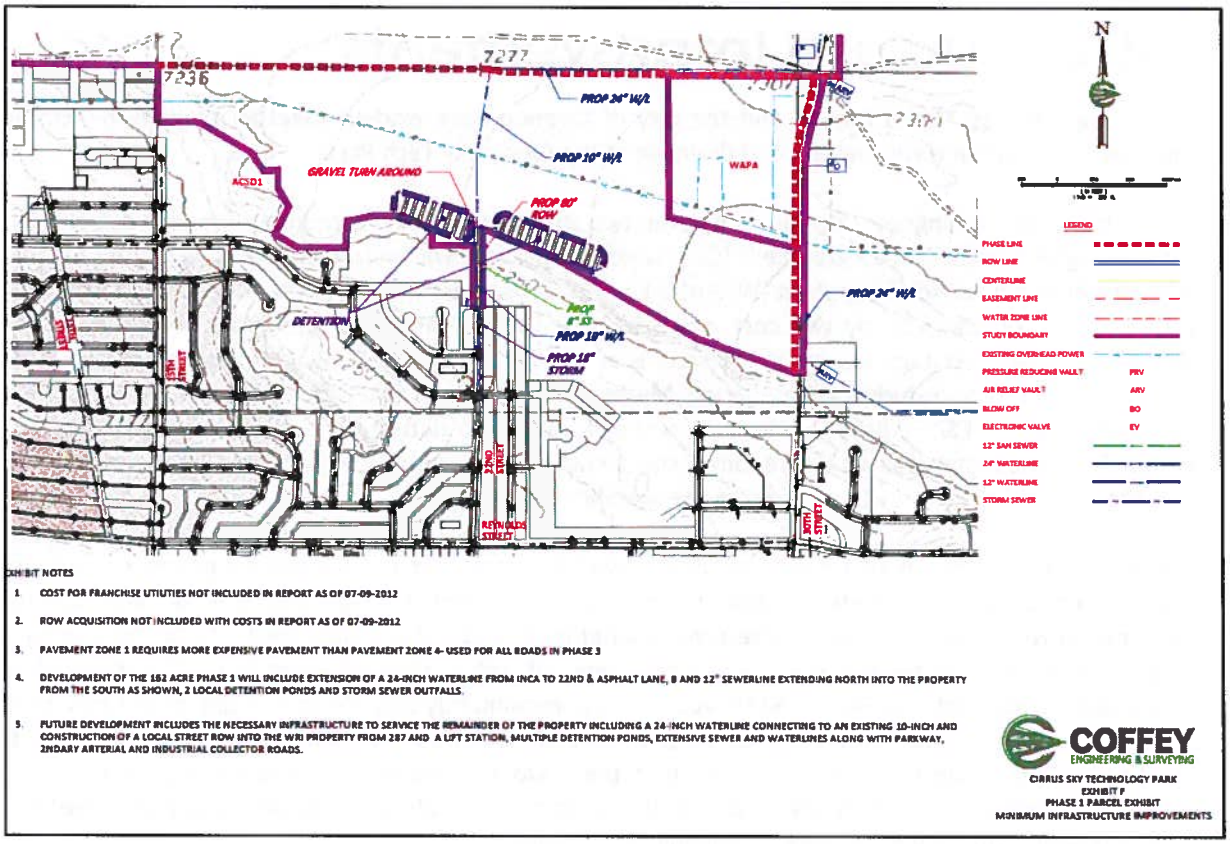
Before major power upgrades can be completed two studies are normally required for each option. The first an Engineering Services Agreement (ESA) which in this case will include cooperative studies by both Western Area Power Administration (WAPA) a Federal Government Agency and Rocky Mountain Power (RMP). This combined Study will cost approximately $80,000 and will verify that sufficient power, including during an outage of any one source, is available to meet the anticipated needs of Cirrus Sky Tech Park. The second study an Engineering, Materials and Procurement Agreement (EMPA) is generally required after the ESA indicating adequate power available to determine timing and costs to build a feeder from the substation to the required site allowing developers to understand when and at what cost the power source can be delivered to the specific site.

Preliminary discussions with Rocky Mountain Power indicate that the Secondary power engineering "agreement" Engineering, Materials and Procurement Agreement (EMPA) would only be needed if the City or a known customer is ready to determine whether the 115kV or 230kV feed is to be designed and to pre-select a site for the privately owned customer substation should be decided. This study which would also involve both WAPA and RMP would cost approximately $45,000 in addition to the ESA when needed. It should be noted that due to the proximity of the Cirrus Sky Tech Park development area to the Snowy Range Substation and the fact that there would be only one landowner (the Tech Park Owner) involved in Easements the cost and timing to build would be minimal for a 230kV feeder – generally well within any data center's building time frames.

Additionally, a RMP power line that currently bifurcates the site should be moved, so that it runs adjacent and parallel to the existing WAPA lines on the property. Moving that power line will cost approximately $115,000.

PHASE I SITE PUBLIC INFRASTRUCTURE PLAN

Streets, water, sanitary sewer, and drainage improvements have been planned by Coffey Engineering & Surveying, as indicated on the map below.



The overall study area has an approximate area of 2,136 acres. There will be future build out east of the study area up to the ridgeline, which is not considered in this report other than to make note that it may occur in the future. The ultimate build out of the area will include the following.

- Multiple north south arterial and collector roadways
- Multiple east west collector and local roadways
- Extension of waterlines from the east (City of Laramie Zone 3) west across the area looping into a waterline that extends west across the Laramie River from the City lift station
- Extension of sanitary sewer lines east from the lift station as well as lines extending north from Reynolds Street
- Extension of a storm sewer east from the Laramie River to a proposed regional detention pond located in a low area on the east side of the WAPA power facility on North 30th Street
- Extension of a force main north on 287 to service the northern portions of the area that cannot be served by a gravity main due to topographic constraints
- Multiple regional detention ponds located along an existing drainage located in the northern portion of the study area, which slopes from east to west with outfall into the Laramie River between Wyotech and the Cathedral Home for Children. A 30-inch culvert conveys the stormwater under WY Highway 287.

The planning has been broken down into the following phases (Exhibit A).

- The Phase I Site, which has an approximate area of 149 acres.
- Future Development north and west of the Phase I site (1,974 acres)

FUTURE DEVELOPMENT

Infrastructure included in the areas designated as future development will include the remaining required infrastructure for build out of the study area including the following.

- 24-inch waterline from 22nd and Asphalt Lane to the WRI property in the Asphalt Lane ROW
- 12-inch sewer line from 22nd and Asphalt Lane to Phase 2 in the Asphalt Lane ROW
- 48-inch and 60-inch storm sewer from the Laramie River east to a regional detention pond located on the east side of the 30th Street Extension across from the WAPA power facility
- Extensive road construction through and around the property
- Regional on-stream detention facilities on an existing drainage that slopes from east to west in the northern part of the study area
- A sanitary sewer lift station and force main to service areas of the property that cannot be served by the gravity sewer proposed in Asphalt Lane.
- Installation of 24-inch waterline to a 10-inch line that comes across the Laramie River north to the site and out to highway 287
- Construction of a local street section (60-ft ROW) from highway 287 into the WRI site

PHASE I PARCEL (EXHIBIT F)

Infrastructure included in Phase 1A will include the following.

- 24-inch waterline from Inca Drive to 22nd along Asphalt Lane
- 12-inch waterline north on 22nd to meet up with the 24" waterline in Asphalt Lane
- Construction of a collector road (80-ft ROW) that will extend 22nd Street north to a temporary gravel cul-de-sac on top of the Bluff.
- Construction of on-site detention and offsite storm sewer outfalls in 22nd Street
- Installation of a 12-inch sewer line from Beaufort Street north in 22nd Street to the temporary Cul-de-Sac

WET UTILITY OVERVIEW

Sanitary Sewer, Water, and Storm Sewer are the required wet utilities for this area to develop (Exhibits B-D). The sanitary sewer extensions north into the area will serve the Phase I Site with some possible extensions into the future development area. A combination of gravity main extended from west to east along Asphalt Lane and a mixture of gravity and force main will serve the Future Development area.

The majority of the site will be serviced by water from the City of Laramie Pressure Zone 3 by extending a 24-inch water main from Inca Drive west to the Laramie River and connecting to existing 10-inch water main at the river. This line will cross into City of Laramie Pressure Zones 1 & 2 requiring Pressure Reducing Vaults at any connections with water mains in these zones.

PHASE I PARCEL (EXHIBIT F)

Wet utility infrastructure in the Phase I will include the following.

- 24-inch waterline from Inca Drive to 22nd Street in Asphalt Lane
- 12-inch sanitary sewer line from Beaufort Street north in 22nd Street to the top of the bluff and the gravel cul-de-sac
- Installation of a 8-inch waterline from 22nd Street to a connection at Asphalt Lane

FUTURE DEVELOPMENT

Future Wet utility infrastructure will include the remaining required infrastructure for build out of the phase including the following.

- 24-inch waterline from 22nd and Asphalt Lane to WRI property in the Asphalt Lane ROW
- 12-inch sewer line from 22nd and Asphalt Lane to WRI Property in the Asphalt Lane ROW
- A sanitary sewer lift station and force main to service areas of the property that cannot be served by the gravity sewer proposed in Asphalt Lane Road.
- Installation of 24-inch waterline from a 10-inch line that comes across the Laramie River north to the site and out to highway 287
- Installation of a 12-inch sewer line from 30th Street to 22nd Street in Asphalt Lane
- Installation of a 12-inch waterline around the north and east perimeter of the Phase I Site in the Asphalt Lane and 30th Street ROW's respectively
- Installation of water and sewer lines in other ROW's and easement within the study area to service the future development.

DRAINAGE DESIGN OVERVIEW

The proposed development will be required to limit stormwater releases to historic levels or less (Exhibit D). Several regional detention ponds are proposed around the property to accomplish this within. In addition, a large storm sewer is proposed within the Asphalt Lane Road alignment to convey stormwater from a low area at the eastern edge of the study area near the WAPA facility that has no outlet currently. This low area will function as one of the regional detention areas.

Areas not served by the regional ponds will be required to provide on-site detention and release at a prescribed rate. The rate will be determined by master drainage study of the area. In general, a historic per acre release rate will be determined to size the local ponds for each lot that does not contribute stormwater through one of the proposed regional ponds.

A large diameter storm sewer will be required to intercept and convey stormwater from this southern part of the area to the Laramie River. The alignment of this storm sewer will follow Asphalt Lane Road paralleling the sewer and water mains. Additional storm sewers in the form of culverts under roadways will be required as outlets for the regional detention facilities located along an existing drainage within future development area. Some extensions of storm sewer south into the City are also proposed to minimize flows going directly into the existing street system, which is at capacity in this part of Laramie according the North Laramie Drainage Study prepared by SEH.

The Phase I Parcel will require onsite detention and storm sewer outfalls to the south and west. The approximate locations of these ponds are shown on Exhibit F. Coffey has included approximate costs of the ponds and their respective outfalls to the existing downstream storm sewer collection system.

Development Costs

The cost to acquire the land and develop infrastructure for the Cirrus Sky Tech Park is estimated to be $5,845,861, based on the land appraisal and estimates calculated by Coffey Engineering and TMNG Global. Those costs are summarized in the table below.

Cirrus Sky Tech Park Cost Estimate	Amount
Pre-Development Expenses	
Planning Study	$90,000
Subtotal Pre-Development Expenses	**$90,000**
Land Acquisition	
Appraised Value (149 $14,000/acre)	$2,086,000
Subtotal Land Acquisition	**$2,086,000**
Infrastructure Improvements:	
Streets/Roads	$308,267
Sanitary Sewer	$491,625
Water lines	$1,493,050
Drainage Improvements	$351,013
Engineering	$343,714
Mobilization/Contractor	$132,198
10% Contingency	$264,395
Subtotal Infrastructure Improvements	**$3,384,261**
Private Utility Improvements	
ESA power study (WAPA and RMP)	$80,000
Relocate electric power line	$115,000
Gas and other private utilities	unknown
Subtotal Private Utility Improvements	**$195,000**
Other Expenses	
Assessment of Fiber Routes 1, 3, and 4	$13,800
Project signage	$76,800
Subtotal Other Expenses	**$90,600**
TOTAL COSTS	**$5,845,861**

Funding Recommendation

Based on available funding resources, the costs to develop the Cirrus Sky Tech Park can be funded according to the recommendations included in the following table.

Cirrus Sky Tech Park Funding Recommendation	Amount
Match Contributions	
Planning Study (cash - paid)	$90,000
Option to Purchase Land (cash - paid)	$5,000
Value of Discounted Price (from landowner, pending sale)	$626,000
Additional contribution (cash - committed)	$405,000
Subtotal Match Contributions	**$1,126,000**
Grants	
WBC Community Readiness Grant	$4,669,861
WBC Planning Grant (power studies)	$50,000
Subtotal Grants	**$4,719,861**
TOTAL FUNDING	**$5,845,861**

The total Match Contributions identified above represent 19.3% of the total project cost. It should be noted that the Wyoming Business Council (WBC) Community Readiness grant listed above exceeds the amount that would normally be considered by the WBC (i.e., normally the WBC would only consider a $1 million Community Readiness grant, although large projects have previously been awarded up to $3 million). Therefore, special consideration will be needed. The WBC staff has been approached by the City, but it is unknown at this time whether such a large request is feasible. Many other funding sources have been considered before development of the recommendation above. If the WBC is not willing to entertain a $4.7 million grant, then other funding sources will be needed. Accordingly, other potential funding sources are discussed in the next section.

Funding Sources

There are several sources of funding potentially available for development of the Cirrus Sky Tech Park. This section of the plan identifies the potential financial opportunities to fund the development costs identified in the plan. Each funding source has restrictions that limit the types of projects it can fund, as well as restrictions as to which entities can be funded. The following funding sources have been considered, and will be discussed in priority order of likelihood of securing funds:

- Wyoming Business Council/Business Ready Community Grant & Loan program
- Wyoming Business Council/Community Development Block Grant Program
- Revenue Bonds
- State Loan & Investment Board (SLIB) Federal Mineral Royalty Grants, Consensus Funding, Wyoming Joint Powers Act Loans, and Abandoned Mine Land funds
- U.S. Department of Commerce/Economic Development Administration funds
- Capital Facility Tax (countywide excise tax)

Each of these potential funding sources has certain attributes to be considered, including their respective costs, uses, timing, and likelihood of availability. They will each be discussed below.

WYOMING BUSINESS COUNCIL – BUSINESS READY COMMUNITY PROGRAM

The Wyoming Business Council (WBC) Business Ready Community Grant & Loan (BRC) program provides financing for publicly owned infrastructure that serves the needs of businesses and promotes economic development within Wyoming communities. Cities, towns, counties, joint powers boards and both Tribes are eligible to apply for funding. Public infrastructure that is eligible for funding includes water; sewer; streets and roads; airports; rights of way; telecommunications; land; spec buildings; amenities within a business park, industrial park, industrial site or business district; landscaping, recreation and educational facilities; and other physical projects in support of primary economic and educational development.

Funds for the BRC program are appropriated by the State Legislature. The 2012-2013 biennium appropriation is $58.5 million. After the WBC staff and Board of Directors have reviewed funding requests and made their recommendations, final approvals are considered by the Wyoming State Land Investment Board at their bimonthly board meetings. The City of Laramie (or Albany County) would be an eligible applicant, and the WBC is likely to fund development of necessary and well-planned business parks.

To distribute funds for eligible projects, the BRC has developed six subcategories based on differing criteria and objectives. The subcategory that currently applies to the Cirrus Sky Tech Park is **Community Readiness** projects. This program is intended to assist in preparing a community through infrastructure improvements and expansions in support of primary economic development. The improvements have to be part of an approved comprehensive plan and the applicant must demonstrate that the potential exists for the creation of new primary jobs. It also must demonstrate that appropriate planning has been conducted and capacity exists to accommodate new business development in order to insure success for the project. As a Community Readiness project, grants are available for up to $1 million. A local match equal to

15% of the project will be required (Note: Local match of $176,471 required for maximum $1 million grant, for total project funding of $1,176,471).

There have been instances when the WBC has awarded larger grants for big projects. Typically, the WBC has limited such awards to a maximum of $3 million grants for the applicable subcategory. Thus, the limit for the Cirrus Sky Tech Park, as a Community Readiness project, would ordinarily be $3 million in grant funds (locally matched with $529,413, for total project funding of $3,529,413). Requests higher than that amount will require special consideration by the WBC, which may result in approval of less funding than the amount sought.

Other subcategories of BRC funding may be available. If a business is identified and committed to building a project in the Cirrus Sky Tech Park, then **Business Committed** grants are available for the project. This is important, since the maximum award for grants for Business Committed projects is $1.5 million, and the required local match is reduced to 10% of the project (i.e., to secure the maximum grant amount, a local match of $264,706 is required, for total project funding of $1,764,706). If previous actions of the WBC are indicative of what is possible for this project, then larger grants could be sought, for a total project cost of up to $5,294,118 ($4.5 million in BRC grants, plus $794,118 in local match).

The final BRC subcategory to consider for this project is Managed Data Center projects, although it is primarily intended to be an incentive so it will be discussed in the Incentives section below.

Recently, the Wyoming State Legislature authorized the WBC to begin using BRC funds for planning grants. The WBC has drafted rules for that use, and the WBC Board of Directors has approved the draft rules. Wyoming Governor Matt Mead is currently reviewing the draft rules, and is expected to approve them sometime before September 1, 2012. Once approve, the WBC expects to receive the first BRC planning grant applications by December 1, 2012 (and semi-annually thereafter).

The electric service analysis planning that needs to be completed by WAPA and Rocky Mountain Power would be excellent candidates for BRC planning funds. Under the draft rules, up to $25,000 is available for feasibility studies, and up to $50,000 is available for community-wide economic development plans and initiatives. A 25% local match is required for all BRC planning grants. The City of Laramie could write multiple grant applications (up to $100,000 per year maximum awards).

If a community-wide BRC planning application is made, the City might persuade the WBC to fund the grants since the electric service analysis:

- Will lead to improvements for the entire community;
- Will include improvements at the solid waste management facility, which serves the entire community; and
- Is part of a community-wide economic development initiative to improve infrastructure for business growth

WBC grant application deadlines are tied to the specific type of grant funding. BRC grants must be submitted by the first day of March, June, September, or December, with decisions made the following quarter. The Wyoming Business Council will not provide grant funds if the local match

project costs are not identified and secured. Involvement by Laramie Economic Development Corporation and the Regional WBC Director, Tom Johnson, will be critical to the success of WBC grants.

More information about the WBC Business Ready Community Grant and Loan program can be found online at http://www.wyomingbusiness.org.

A key consideration for all BRC grants is a plan to "recapture" revenue equal at least to the State's investment (i.e., the amount of the grant). There are several ways that the City of Laramie will recapture revenue in this project:

- Sale of lots – once the Cirrus Sky Tech Park become shovel-ready (i.e., subdivided, zoned, and all necessary infrastructure is in place), the land will be worth much more than it currently is worth. Based on comparable sales identified in the appraisal and on the value of the infrastructure improvements that will be developed, the land in the Cirrus Sky Tech Park will then be worth as much as $58,000 an acre (or $1.33 per square foot). Some of the Cirrus Sky Tech Park lots may be substantially discounted (to incentivize development), but perhaps half of the 139 developable acres will be sold, resulting in sales of up to $4 million. If these funds were dedicated to economic development, they could be counted as part of the recapture plan. They could also be dedicated to future business park development, including expansion of the Cirrus Sky Tech Park.
- Economic impacts – There will be significant enhancements for local governments and the state, based on future development of the Cirrus Sky Tech Park. Approximately $7.8 million in state and local tax revenue will be recaptured during construction. After construction, the new businesses to be located in the Cirrus Sky Tech Park will generate annual state and local taxes of $3.8 million. Those increases in tax revenues should be considered in the revenue recapture plan. They are discussed in detail in the Economic Impact Analysis section below.
- In-kind contributions – The current landowner has expressed a willingness to sell his property to the City of Laramie, in exchange for setting aside a portion of the site for parks and walking trails (especially along the popular ridgeline). The value of this discount, $626,000, can be used a match or as part of a revenue recapture.
- Fiber/broadband sales – This plan recommends that the City of Laramie consider owning the fiber and conduit that loops through the community through various routes to the Cirrus Sky Tech Park. The City of Powell, Wyoming, has done this successfully via a telecommunications provider that leases the infrastructure from the City and provides all operational and maintenance services. Depending on the route, timing, and long-haul carrier(s) that are chosen, this project could generate a significant amount of revenue.

WYOMING DATA CENTER RECRUITMENT FUND

The Wyoming Legislature recently authorized the Wyoming Governor to spend up to $15 million as grants for necessary public infrastructure to enable the recruitment and operation of data centers. The Legislature mandated that these funds be provided at the Governor's discretion for data centers that are committed (contracted) to locate in Wyoming and that the data center company construct a facility that costs at least $50 million. This fund is intended to help close deals for communities that have recruited a data center project. Therefore, although it may not

be appropriate to seek these funds for a community readiness project like Cirrus Sky Tech Park, this funding source may be an excellent incentive for Laramie to consider down the road. For example, this fund could help pay for the final construction of one or more specific fiber routes that are needed by the prospective data center.

WYOMING BUSINESS COUNCIL – COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

The primary intent of the Community Development Block Grant (CDBG) program is to provide funding to local governments to pay for community or economic development activities. The CDBG program is a federally funded pass through grant program funded by the United States Department of Housing and Urban Development and administered by the Wyoming Business Council (WBC). The WBC receives an annual CDBG funding allocation that has varied between $2.2 million and $3.75 million. The agency also has three subcategories for better allocation and distribution of the funds. The sub-category for this project is the Public Infrastructure grant, which can provide up to $500,000 in grant funds. There is not a required match; however, an integrated effort with matching funds would be desirable. CDBG funding is limited to cities, towns, counties, joint powers boards, and further income restrictions applied.

One of three national objectives must be met to qualify for CDBG funds:

- Benefit low and moderate income persons
- Aid in the prevention or elimination of slums or blight
- Activity designed to meet community development need having a particular urgency

There are two key reasons why CDBG funds should not be pursued for this project. First, the City of Laramie has many other infrastructure needs that are more appropriately funded with CDBG funds. Second, it may be difficult to meet any of the national objectives, especially because an important goal is to create high-paying high-skilled technology jobs.

The CDBG program also funds "planning only" projects. Planning funds will be important for this project because it will be necessary for WAPA and Rocky Mountain Power to conduct electric service analysis for extending electricity to and through the Cirrus Sky Tech Park. However, CDBG funds for that kind of study are limited, because they are considered feasibility studies (funding for which is capped at $15,000). Instead of CDBG planning funds, the City should seek BRC planning funds (addressed above).

REVENUE BONDS

The community may want to consider issuing municipal revenue bonds to allow for construction of new fiber routes and/or conduit that connects to nearby "long-haul" telecommunication carriers. The community could pledge future revenue from sales or leases to these fiber rings to finance bonds that would fund their construction. There are a number of quality firms within the State of Wyoming who, in anticipation of selling the bonds once the question passes, provide election assistance developing promotional brochures, framing the question and helping generate support for the project. Preliminary discussions with bond counsel and with the City of Powell (which has successfully completed a similar project) suggest that the City of Laramie could indeed construct a fiber loop network and/or conduit for such a network financed with bonds, and then work with a telecommunication company to operate the system to generate revenues.

STATE LOAN AND INVESTMENT BOARD

The Office of State Lands and Investments serves as a clearinghouse for many funding programs. They are responsible for receiving and processing funding applications through the following programs:

Mineral Royalty Grants (MRG)

The Federal Mineral Royalties and Bonus Payments provide funding pursuant to Wyoming Statute 9-4-604. The State Loan and Investment Board (SLIB) provides Federal Mineral Royalty Grant (MRG) funds. The MRG revenue stream is funded by the royalties from federal leases on public land in Wyoming. The amount varies from year to year and is subject to legislative appropriation based on revenues received by the state from the federal government. The allocated amount for the 2012-2013 biennium is $33.4 million. Eligible entities are counties, municipalities, joint powers boards and certain special districts, including hospital districts.

The funds are provided in the form of grants ranging from 50% to 75% of eligible project costs. Municipalities with a population less than 1,300 or that are in a county where the three-year average of state sales and use tax is less than 70% of statewide average are eligible for 75% grant funding (Note: Albany County appears to be well below that threshold). Larger municipalities are limited to 50% grants.

The SLIB Board reviews applications and prioritizes them by urgency. Emergencies that pose an immediate threat to health, safety, and welfare get top priority. The second priority is compliance with federal or state mandates, and the third priority is to provide an essential public service. The Board considers water and sewer projects, storm drainage projects, street and road projects, and solid waste disposal projects, among others, to be essential public services.

It seems unlikely that this project would receive serious consideration for funding given the criteria for award. However, given some of the water and sewer infrastructure needs in the community may justify seeking MRG funds for the broader community needs.

SLIB Mineral Royalty funds are also allocated to Wyoming's counties and municipalities through the Countywide Consensus Allocation (referred to as Section 342 funding within the supplemental legislative funding appropriations to local government entities). Section 342 appropriates funds from the State's general fund to SLIB to be allocated to counties in formula block grants and expended for capital projects via the countywide consensus process. The City of Laramie desires to use such funds now and in the future for other infrastructure needs.

Wyoming Joint Powers Act Loans (JPA)

Pursuant to the Wyoming Joint Powers Act (W.S. 16-1-101, et al), any one of Wyoming's counties, municipalities, school districts and community college districts may create a Joint Powers Board for the purpose of planning and financing specified governmental projects and facilities, including rights of way for public utilities and telecommunication.

A Joint Powers Board has the authority to issue tax-exempt revenue bonds to fund the construction of many different types of public facilities, which are then owned by the Joint Powers Board or any of its participating agencies. The JPA funding is a $60 million allocation from the Permanent Mineral Trust Fund. The JPA funding is in the form of loans and only provides funding for revenue generating public facilities projects. The

revenue must be sufficient to service the debt and represent prudent use of state funds. Loan terms are up to 40 years, depending on the life of the project. The interest rate for Joint Powers Act Loans is 4.89% through December 31, 2012. In January of each year, the State Treasurer's Office will calculate the five-year average that will provide the next annual interest rate for Joint Powers Act Loans.

The loan funds can be used for planning, construction, acquisition, improvement, emergency repair, and refinancing of existing debt. There are no matching fund requirements, provided the facility can generate sufficient revenues to service the debt and is a prudent use of state funds. The JPA program has no set priority list or numerical ranking system for projects.

The SLIB board will consider completed loan applications at any of its regular meetings or special sessions. The next upcoming due date for application submittal would be October 7, 2012 for the December 6, 2012 meeting.

Abandoned Mine Lands (AML)

The Surface Mining Reclamation and Control Act allowed the State of Wyoming to establish an Abandoned Mine (AML) Program. Originally established to reclaim abandoned mine sites using funds collected by the U.S. Secretary of Interior, the law now allows AML to fund public facilities in communities adversely affected by past mining. The program is administered by the Wyoming Department of Environmental Quality Abandoned Mine Land Division with final review and approval by SLIB.

Chapter 6 of the Abandoned Mines Lands Rules and Regulations allows for funding of public facilities projects in counties that are, or have been impacted by mining with excess funds remaining after fully funding their reclamation and rehabilitation projects. These excess AML funds can be used for funding costs associated with site evaluation, engineering and design, site preparation, construction, equipment purchase, and maintenance. Eligible projects include existing public facilities and utilities serving the public that were adversely affected by mining practices prior to 1977, and new public facilities and utilities in communities affected by mining. Applicants are restricted to incorporated cities and towns, counties, special districts or joint powers boards who would own the new facility.

Qualifying projects are given a priority ranking based on the following criteria:

1. Availability of funds from other sources, local community tax base, and financial support for the proposed project.
2. The mitigation extent for impacts from mining, with first priority given to public health and safety and second to providing basic services and infrastructure.
3. The need and cost effectiveness of the project to the community and the state.

This funding is limited to any excess amount beyond the amount needed to fund the State's reclamation plan. In recent years the funds received by the State for AML projects has only been sufficient enough to implement the state's Reclamation Plan and there hasn't been excess funding available for public facilities projects. However, it

appears that the AML program will have funds available for funding water system improvement projects in the immediate future.

More information about the various Wyoming SLIB grant and loan programs can be found online at http://lands.state.wy.us/.

U.S. DEPARTMENT OF COMMERCE/ECONOMIC DEVELOPMENT ADMINISTRATION

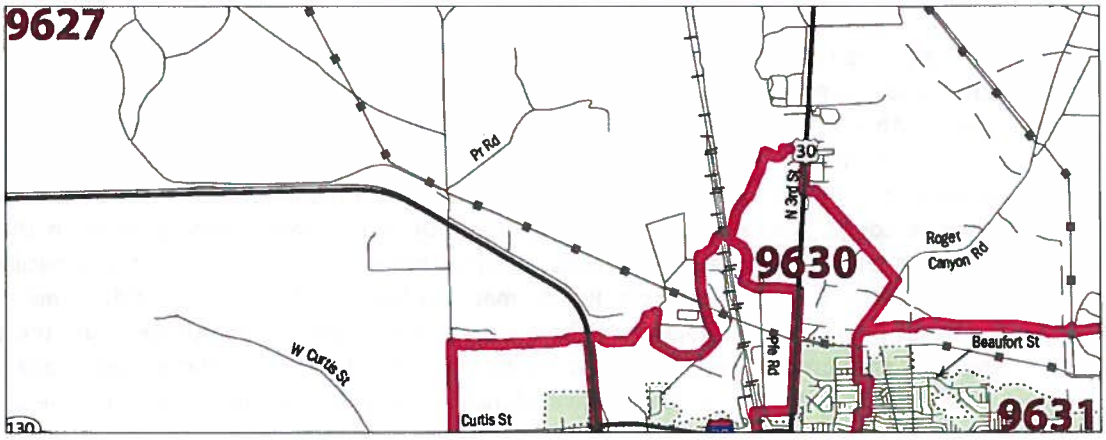
The federal Economic Development Administration (EDA) provides funding to support development in distressed communities by fostering job creation and attracting private investment. The EDA's Public Works and Economic Adjustment Assistance programs have been used by many communities to construct facilities and to improve infrastructure for economic development. Unfortunately, neither the City of Laramie nor Albany County's economy is sufficiently "distressed" at this time to demonstrate the need for EDA assistance.

To demonstrate economic distress (and therefore eligibility for EDA assistance), the community needs to demonstrate:

1. That its unemployment rate is at least one percentage point greater than the national average unemployment rate (Albany county's unemployment rate has averaged four percentages points *lower* than the national rate);
2. Per capita income that is 80 percent or less of the national average per capita income (Albany County's per capita income is currently 93.7% of the nation's per capita income); or
3. A "Special Need," as determined by the EDA.

One of the categories of "Special Need" (i.e., a Presidential Declaration of a Major Disaster) may technically satisfy the EDA definition of economic distress. On July 11, 2011, President Obama made such a declaration, which included Albany County. More recently (July 2012), the Secretary of Agriculture Tom Vilsack designated Albany County as a drought disaster area. However, such Declarations typically expire within 12-18 months, so eligibility for the Cirrus Sky Tech Park project may soon be eliminated.

Another alternative is to frame the eligibility question within a Census Tract, instead of the more traditional County or City approach. The study area includes some part of three Census Tracts (9627, 9630, and 9631), as seen in the map below:



Using 5-year averages (2006-2010, the most recent) for per capita income, according to the Census Bureau's American Community Survey data, Census Tract 9630 would be eligible for EDA Public Works funding, since its per capita income level is just $18,626 (far less than the 80% threshold). The table below compares the per capita income levels for all relevant geographic areas.

Geographic Area	Per Capita Income 2006-2010	Percent of USA Per Capita Income
Albany County	$25,622	93.7%
City of Laramie	$22,846	83.6%
Census Tract 9627	$27,914	102.1%
Census Tract 9630	**$18,626**	**68.1%**
Census Tract 9631	$29,980	109.7%
USA	$27,334	100.0%

Using a Census Tract approach is unproven and may face opposition from EDA staff. Additionally, the Denver regional office for the EDA has not been supportive of data center projects generally. Their concern is that data center facilities cost far more than would be warranted given the small number of jobs that are created. With the EDA's scoring matrix, such projects have not competed well for funding, especially when there are other potential projects that generate far more jobs. Nonetheless, according to John Rogers, the EDA representative for Wyoming, this project may qualify for approximately $1 million in funding, which must be matched at least 100%. Funding from local or state sources (including BRC grants) can be used for the required match. The EDA accepts applications quarterly, and the process starts by working with EDA's regional staff (John Rogers).

CAPITAL FACILITIES TAX

Counties have the ability to levy optional (or special purpose) sales and use taxes. A special purpose tax, (also known as a capital facilities tax), is an excise tax of not more than 2% levied with all other sales and use taxes collected in the county. It must be approved by a popular vote. The revenues from the specific purpose local option tax must be used to pay for specific capital needs identified in the ballot proposition. To put a capital facility tax on the ballot, the board of county commissioners and two-thirds of incorporated municipalities in the county must first pass a resolution authorizing a ballot issue. There are only two municipalities in Albany County (Laramie and Rock River); meaning both of those municipalities must approve any ballot resolution. Projects must be approved when the tax is approved, and the tax ends when the amount of money approved has been collected. This method is a good one to utilize to raise matching funds and to provide evidence of support by the community for the project.

Albany County currently has in place a special purpose tax that raises $4-5 million each year for water and streets projects. The tax was approved in May 2010, and is expected to continue for several years. Once it expires, it is likely that local governments will need to consider yet another special purpose tax for more pressing needs than the Cirrus Sky Tech Park.

Phasing Plan

There is a logical progression of steps that should be taken by the City to successfully move this project forward:

1. Now – Secure option to purchase Phase I Site
2. September 1, 2012 – Apply for BRC Community Readiness grants in amount of $4.5 to purchase site and to pay for water, sewer, and roads servicing the Cirrus Sky Tech Park property.
3. December 1, 2012 – Apply for BRC planning grant of $50,000 to help pay for WAPA and Rocky Mountain Power electric service analysis.
4. As opportunities for business recruitment are converted (i.e., businesses make formal commitment), apply for BRC funding to extend infrastructure to north side of Cirrus Sky Tech Park, as needed, and/or apply recapture funds to this purpose.
5. As needed, secure option(s) to purchase land to the north of Cirrus Sky Tech Park property.

Potential Incentives

Much is said about Wyoming being a "tax friendly" place to do business. Wyoming has no income tax, low property taxes, and reasonable sales taxes. Wyoming is known to have a low cost of living, a good quality of life, and conservative fiscal values. Yet, businesses are not flocking here. In fact, the site selection process for many corporations is a highly competitive fast-paced race of exclusion, culminating in a head-to-head comparison of just a few finalists. Site locators begin by finding reasons to exclude most communities. They then calculate how much money the remaining communities will "give" if they are chosen. Accordingly, some communities use certain incentives to become more competitive in their effort to induce companies to relocate. There are many potential incentives available to help attract businesses to the Cirrus Sky Tech Park, discussed below.

BUSINESS READY COMMUNITY (BRC) GRANTS

One of Wyoming's best incentives is the BRC grant program, discussed above. BRC grants of up to $1.5 million can greatly decrease the construction cost of a new facility. The BRC program is unique to Wyoming, and its availability should be a central part of the overall marketing approach and incentive package for the Cirrus Sky Tech Park.

MANAGED DATA CENTER COST REDUCTION PROGRAM

Since a primary purpose of the Cirrus Sky Tech Park is to be attractive to large data centers, the Managed Data Center Cost Reduction Program will be an important incentive. This program can pay down utility costs for electrical and/or broadband connectivity. In exchange for providing these reductions in costs, the City will need to first contract with the prospective business to receive direct benefits and indirect economic development benefits. Those economic development benefits should include a specific amount of capital investment from the business, a specific minimum payroll to be created, and/or the provision of discounted IT services to the City. The agreement with the business will also require that the business pay back all funds in the event the business does not meet the contract's requirements and/or if the business ceases to do operations or relocates out of Laramie within five years.

For Managed Data Center projects, the grant amount is based on how much capital investment and payroll the business will realize over five years. The maximum grant award is $2,250,000. For each grant amount, the business must create a match of at least 125% of the grant amount in payroll and capital expenditure with the caveat that 50% of the match will be in payroll creation. Payroll must be greater than 150% of Albany County's median wage. As of March 2012, the median wage for all Albany County occupations was $33,187, so new positions would need to pay at least $ 49,781 per position. While it is likely that any large data center project will qualify for these funds, the program should be used more as an incentive, since it is not a funding source for development costs.

SALES TAX EXEMPTIONS

Multiple sales tax exemptions make it very attractive to do business in Wyoming. Manufacturing, energy, and agricultural-related businesses are able to exempt many purchases from sales tax. There is also a sales tax exemption for certain equipment purchased for data centers.

- In Wyoming the purchase or rental of equipment that is necessary for the operation of a data processing services center is exempt from sales tax, including:
- Qualifying prewritten and other computer software
- Computer equipment including computers, servers, monitors, and keyboards
- Storage devices and containers used to transport and house such computer equipment
- Other peripherals, racking systems, cabling and trays
- Uninterruptable power supplies and back-up power generators
- Specialized heating and air conditioning equipment, and air quality control equipment used for controlling the computer environment necessary for the operation of a data processing services center

These exemptions only apply when the aggregate purchase of the qualifying equipment exceeds two million dollars ($2,000,000.00) in any calendar year. Additionally, to claim the computer equipment exemptions, the business must meet certain requirements:

1. The business must have a physical location in this state where the qualifying computer equipment purchased shall be maintained and operated until the qualifying equipment is scheduled for replacement; and
2. The business shall make an initial total capital asset investment in a physical location in this state of not less than five million dollars.

To qualify for the sales tax exemption for purchases of power equipment or specialized HVAC equipment, the initial capital asset investment must be at least fifty million dollars. Because of the huge equipment investments made by data centers, both types of sales tax exemptions will become a huge incentive to locate in Wyoming, saving them millions of dollars.

WORKFORCE TRAINING GRANTS

The Wyoming Department of Workforce Services (DWS) provides workforce training funds for new and existing businesses. Business Training Grants for new jobs can provide between $1,000 and $4,000 per trainee per fiscal year, depending on the employee's full-time status and wage amount. Grants for new positions were developed to assist Wyoming businesses in two ways:

- *Wyoming Business Expansion*
  One of the most difficult issues facing a company trying to expand its services and workforce is the overwhelming cost associated with hiring and training a workforce during the start-up phase of the expansion. The Workforce Development Training Fund can help a growing Wyoming business by deferring much of the business's training costs during the expansion phase. The Cirrus Sky Tech Park will want to access these funds for Wyoming businesses that want to expand with a new facility there.

- *New Business Recruitment*
  The Workforce Development Training Fund is a tool for DWS to partner with LEDC to recruit new businesses to the Cirrus Sky Tech Park. DWS will work to ensure that a business considering Laramie as a place of operation will know how the Workforce Development Training Fund can help create a successful start-up by deferring much of its workforce training costs.

It is important to know that DWS may pre-obligate workforce training funds, which can then be included in an incentive package for recruiting new businesses. DWS will pre-obligate funds for business expansion or recruitment, as discussed above.

INDUSTRIAL DEVELOPMENT REVENUE BONDS

Cities and counties may issue tax-exempt industrial development revenue bonds to provide financing for manufacturing and energy generation businesses. These bonds are issued within the State's IRS allocation of tax-exempt bond financing. They can be used for land acquisition, building construction or purchase, and equipment loans. The maximum project is $10,000,000 and the business must provide a bank "letter of credit" to guarantee payment of the bonds. While the bonds may not be a good fit for data centers, they could make a difference for certain kinds of manufacturing facilities that could be located in the Cirrus Sky Tech Park, including:

- Industrial projects for assembling, fabrication, manufacturing, or processing of any sort that creates a product for sale
- Energy development projects, including production, collection or conversion
- Projects which manufacture or process recycled or reused products and materials (might be an excellent opportunity, given the proximity of the solid waste management facility)

LOCAL INCENTIVES

Laramie Economic Development Corporation (LEDC) has several additional opportunities to incentivize a new business to relocate or expand into Cirrus Sky Tech Park:

- If LEDC owns the lots within the business park, it can strike special deals with prospective businesses, including reduce prices, free land, or flexible financing terms. Many local economic development councils throughout Wyoming use this incentive (particularly when land has been developed with BRC grant funds). When BRC funds have been used to develop shovel-ready sites, as in this case, local communities are encouraged to use proceeds from land sales and leases to further their local economic development goals. It may be wise for LEDC to use some of these revenues to build a cash fund that can be used to help close deals.
- LEDC also has a small revolving loan fund that can be used to help businesses grow. Its current cash balance is approximately $45,000.

Economic Impact Analysis

Economic development is vital to the local economy. New companies generate two significant impacts to the community, initially with the construction phase and then with the ongoing business operations. It is important to understand and quantify the economic impacts of new development. Local governments and funding organizations (including the Wyoming Business Council, if they choose to fund this project), are interested in job creation, taxes, and revenue recapture.

The U.S. Bureau of Economic Analysis' Regional Input-Output Modeling System, more commonly known as RIMS II data, is a helpful tool to calculate economic impacts. RIMS II multipliers are used to estimate economic impacts. They quantify the cumulative effects on total industry output, earnings, employment, and value added that result from a change in final demand. The multipliers are derived

from two sources: A national input-output table—an accounting framework that shows the distribution of the inputs purchased and outputs sold—and regional data, which are used to adjust the national input-output table to reflect the a region's industrial structure and trading patterns. Jobs impacts estimated using the final-demand and direct-effect employment multipliers include both part-time and full-time employees. The RIMS II multipliers do not provide estimates of jobs in terms of full-time equivalences. The RIMS II model is a well-respected resource for measuring total economic impacts, is easily accessible, relatively inexpensive, and customizable to the county level.

For this analysis, the most recent RIMS II annual data for Albany County is used. Type II multipliers are used because they include induced effects. The construction phase is based on construction industry multipliers; the business operations phase uses the particular industry multipliers for each industry that is going to be developed. For example, data centers are included in the "Professional, Scientific, and Technical Services" industry sector. All multipliers are used to estimate impacts based on the "demand" of each phase. For construction, demand is the total building cost. Demand produced annually per employee is based on multipliers of the specific region and industry. RIMS II reports two different employment multipliers — total employment and direct-effect multipliers — that are used to estimate final demand per employee.

Once the appropriate final demand multipliers are determined, final demand can be estimated for both phases. These multipliers account for direct, indirect, and induced effects. For example, in the construction phase, direct effects include labor and materials, indirect effects include healthcare services or utilities, and induced effects are effects from household spending. Each of the three economic impacts is addressed by total output, which is the value produced by the final demand dollars cycling through the economy; total earnings, which are the amount of total output paid in compensation; and total employment, which is the number of jobs created or sustained.

The primary focus of Cirrus Sky Tech Park will be to recruit data centers, which are included in the RIMS II industry called Professional, Scientific, and Technical Services. Other key industries that will be a good fit in the business park include:

- Computer & Electronic Products Manufacturing
- Telecommunications
- Internet & Other Information Services

Since all new facility development also has a building construction phase, the multipliers for the Construction industry are also important. The relevant RIMS II multipliers for all these industries (for Albany County) are presented in the table below.

U.S. Bureau of Economic Analysis RIMS II Multipliers for Albany County (Type II)				
Final Demand Multipliers	**Total Output**	**Total Earnings**	**Total Jobs**	**Direct Jobs**
Construction	1.4477	0.5150	13.7213	1.5451
Computer & Electronic Products Mfg.	1.2891	0.3378	8.0712	1.6345
Telecommunications	1.2641	0.2207	5.6180	1.9485
Internet & Other Information Services	1.3463	0.3073	8.5294	1.7675
Professional, Scientific & Tech Services	1.4866	0.6502	17.1439	1.4461

The first two multipliers are dollar-for-dollar multipliers. That is, for every $1 increase in final demand, total output or total earnings will increase by the amount of the multiplier. The employment multiplier is reported per $1 million in final demand. Thus, a multiplier of 10 represents 10 jobs per $1 million in final demand.

As an example, consider the Microsoft data center that recently considered locating in Laramie, but ultimately chose to build their new facility in Cheyenne. Microsoft proposed building a $112 million facility that employed 40 workers (who will earn more than 150% than the prevailing wages). The economic impact of the construction phase seems large ($112 million), but the business operations phase is also significant. During construction, RIMS II estimates that this project would support more than 1,500 jobs during the construction phase (which will be for one to two years). During the business operations phase, employment is smaller (58 total jobs) but will be more sustainable.

The following table demonstrates how RIMS II multipliers can help to calculate the lost opportunity of Microsoft choosing to locate in Cheyenne instead of Laramie. Although that project was announced as a $112 million development, about 40% of that cost will go into computers and IT equipment (most of which will be produced out-of-state, and will be exempt from excise taxes by state statute). Accordingly, the construction cost for the facility itself is estimated to be 60% of $112 million, or $67.2 million.

Lost Opportunity: Microsoft Data Center (Medium Size)			
Construction Phase	**Multipliers**	**Base Cost**	**Total Impact**
Total Employment	13.7213	$112,000,000	1,537
Total Earnings	0.5150	$112,000,000	$57,680,000
Total Output	1.4477	$112,000,000	$162,142,400
Local Sales Tax Generated	1.826%	$112,000,000	$1,053,121
State Tax Generated	0.888%	$112,000,000	$512,329
Business Operations	**Multipliers**	**Base Demand**	**Annual Impact**
Total Employment	17.1439	40	**58**
Total Earnings	0.6502	$3,374,028	$2,193,793
Total Output	1.4866	$3,374,028	$5,015,830
Local Sales Tax Generated	1.826%	$3,374,028	$40,054
State Tax Generated	0.888%	$3,374,028	$19,486
Property Tax Generated	0.6555	$67,200,000	$440,496
Total Annual Tax Impacts			**$500,036**

Using this economic analysis, Microsoft's $112 million facility would have created an initial economic impact of $162 million dollars, employed 1,537 workers, and produced a construction payroll of nearly $58 million. That payroll, in turn, would have generated $1,053,121 in local sales tax, and $512,329 in state tax.

Once operations began, this kind of project would create a total economic impact of $5 million annually. The Microsoft project would have generated annual property taxes for Albany County of about $440,496 (69 mills assessed at 9.5% of facility's total value of $67.2 million). The operation would have directly supported 40 well-paid employees, but also another 18 jobs would have been created in the community, indirectly or through induced spending, for a total of 58 jobs and a total annual payroll of $2.2 million. Household spending (i.e., employees spending their wages) would annually generate excise taxes for Albany County and its municipalities of $40,054, and state taxes of $19,486. Thus, the total tax impact of the Microsoft facility would have been $500,036 in state and local taxes.

Of course, Microsoft is just one company that wants to build new data centers. Any similarly sized data center could generate these economic impacts in Laramie if one chooses to locate there. In fact, the "medium" size is the most typical kind of data center that would be attracted to Laramie, and so it is quite possible that at least two medium sized data centers will choose to locate in the Cirrus Sky Tech Park. Indeed, the ultimate goal of this plan is to secure such projects, along with several other related developments.

A small data center (like one that was recently built in Oregon by Facebook), would also have a big impact on the local economy. The table below demonstrates the total impact of a small data center, if one were to be built in Laramie.

Small Data Center (like Facebook)			
Construction Phase	**Multipliers**	**Base Cost**	**Total Impact**
Total Employment	13.7213	$15,000,000	206
Total Earnings	0.5150	$15,000,000	$7,725,000
Total Output	1.4477	$15,000,000	$21,715,500
Local Sales Tax Generated	1.826%	$15,000,000	$141,043
State Tax Generated	0.888%	$15,000,000	$68,616
Business Operations	**Multipliers**	**Base Demand**	**Annual Impact**
Total Employment	17.1439	35	51
Total Earnings	0.6502	$2,952,275	$1,919,569
Total Output	1.4866	$2,952,275	$4,388,851
Local Sales Tax Generated	1.826%	$2,952,275	$35,047
State Tax Generated	0.888%	$2,952,275	$17,050
Property Tax Generated	0.6555	$15,000,000	$98,325
Total Annual Tax Impacts			**$150,423**

Using the same RIMS II model for analysis, the $15 million small data center would create an initial economic impact of $21.7 million dollars, employ 206 workers, and produce a construction payroll of $7.7 million. That payroll, in turn, would generate $141,043 in local sales tax, and $68,616 in state tax.

Once operations began, this project generates a total economic impact of almost $4.4 million annually. A small data center project like this would generate annual property taxes for Albany County of about $98,325 (69 mills assessed at 9.5% of facility's total value). The operation would directly support 35 well-paid employees, and another 16 jobs would be created in the community, indirectly or through induced spending, for a total of 51 jobs and a total annual payroll of $1.9 million. Household spending (i.e., employees spending their wages) would annually generate excise taxes for Albany County and its municipalities of $35,047, and state taxes of $17,050. Thus, the total tax impact of a small data center will be $500,036 in state and local taxes.

Large data centers, like Google (or the Verizon facility that recently considered building in Laramie), would have a huge impact on the local economy.

Large Data Center (like Google or Verizon)			
Construction Phase	**Multipliers**	**Base Cost**	**Total Impact**
Total Employment	13.7213	$400,000,000	5,489
Total Earnings	0.5150	$400,000,000	$206,000,000
Total Output	1.4477	$400,000,000	$579,080,000
Local Sales Tax Generated	1.826%	$400,000,000	$3,761,148
State Tax Generated	0.888%	$400,000,000	$1,829,747
Business Operations	**Multipliers**	**Base Demand**	**Annual Impact**
Total Employment	17.1439	200	289
Total Earnings	0.6502	$16,870,140	$10,968,965
Total Output	1.4866	$16,870,140	$25,079,151
Local Sales Tax Generated	1.826%	$16,870,140	$200,271
State Tax Generated	0.888%	$16,870,140	$97,429
Property Tax Generated	0.6555	$400,000,000	$2,622,000
Total Annual Tax Impacts			**$2,919,701**

The RIMS II model tells us that a $400 million large data center would create an initial economic impact of $579 million dollars, employ 5,489 construction workers, and produce a construction payroll of $206 million. That payroll, in turn, would generate $3.7 million in local sales tax, and $1.8 million in state tax. Note that, due to issues of scaling and timing, the RIMS II model may overestimate the actual number of construction employees to be used on a very large project, and therefore the impact for the Construction Phase identified above may be overstated.

Once operations began, this project generates a total economic impact of more than $25 million annually. A large data center project like this would generate annual property taxes for Albany County of about $2.6 million (69 mills assessed at 9.5% of facility's total value). The operation would directly support 200 well-paid employees, and another 89 jobs would be created in the community, indirectly or through induced spending, for a total of 289 jobs with an annual payroll of nearly $11 million. Household spending (i.e., employees spending their wages) would annually generate excise taxes for Albany County and its municipalities of $200,271, and state taxes of $97,429. Thus, the total tax impact of a large data center would be $2.9 million in state and local taxes.

Although a large data center could, technically, be located within the Cirrus Sky Tech Park, it may make more sense to acquire a large site adjacent to the Cirrus Sky Tech Park for such a facility. Most of the infrastructure will already be in place, and any remaining infrastructure (including new fiber route(s)) could quickly be built. This kind of project also opens the door for Business Committed grants from the Wyoming Business Council.

There are many other opportunities for development of tech-related businesses that could be favorably sited in the Cirrus Sky Tech Park. Several existing high-tech companies have been identified by LEDC, in

their effort to address workforce development issues. (Note: that effort has been organized and is known as "SNAPIT".) A recent goal of the SNAPIT group is to grow the types and numbers of technology-driven companies, to create a technology-driven economic cluster. For example, companies like the local firms that have recently worked their way through the Wyoming Technology Business Center incubator could be a good fit (e.g., Falcon Technologies, who produces specialized computers for day traders, and Happy Jack Software, who specializes in developing web-based software solutions). These kinds of companies are included in the RIMS II industry called Computer and Electronic Product Manufacturing. Though smaller than the data center, these kinds of companies are a great way to diversify and grow the local economy. A typical new business in this industry would generate the impacts seen in the table below.

New Computer/Electronics Products (like Falcon Technologies or Happy Jack Software)			
Construction Phase	**Multipliers**	**Base Cost**	**Total Impact**
Total Employment	13.7213	$3,000,000	41
Total Earnings	0.5150	$3,000,000	$1,545,000
Total Output	1.4477	$3,000,000	$4,343,100
Local Sales Tax Generated	1.826%	$3,000,000	$28,209
State Tax Generated	0.888%	$3,000,000	$13,723
Business Operations	**Multipliers**	**Base Demand**	**Annual Impact**
Total Employment	8.0712	20	**33**
Total Earnings	0.3378	$4,050,203	$1,368,159
Total Output	1.2891	$4,050,203	$5,221,117
Local Sales Tax Generated	1.826%	$4,050,203	$24,980
State Tax Generated	0.888%	$4,050,203	$12,152
Property Tax Generated	0.6555	$3,000,000	$19,665
Total Annual Tax Impacts			**$56,797**

For this kind and size of company, the RIMS II model estimates that construction of the $3 million facility would create an initial economic impact of $4.3 million dollars, employ 41 workers, and produce a construction payroll of $1.5 million. That payroll, in turn, would generate $28,209 in local sales tax, and $13,723 in state tax.

During operations, this project generates a total economic impact of $5.2 million annually. This kind of facility would generate annual property taxes for Albany County of about $19,665 (69 mills assessed at 9.5% of facility's total value). The operation would directly support 20 well-paid employees, but also another 13 jobs would be created in the community, indirectly or through induced spending, for a total of 33 jobs and a total annual payroll of almost $1.4 million. Household spending (i.e., employees spending their wages) would annually generate excise taxes for Albany County and its municipalities of $24,980, and state taxes of $12,152. Thus, the total tax impact of a new computer or electronic products manufacturer will be $56,797 in state and local taxes.

The fiber improvements that will be completed with the development of the Cirrus Sky Tech Park will generate another great opportunity: Improved broadband connectivity for the entire community. The new fiber lines and/or conduit that will soon loop through the community create an excellent

opportunity for a telecommunications company to deliver better Internet service to Laramie. That Internet service provider (ISP) could be one that already has a presence in the community, or a new firm. Construction of a new facility and its subsequent operations would generate the following impacts.

New Internet/Information Services Company (like a new ISP)			
Construction Phase	**Multipliers**	**Base Cost**	**Total Impact**
Total Employment	13.7213	$5,000,000	69
Total Earnings	0.5150	$5,000,000	$2,575,000
Total Output	1.4477	$5,000,000	$7,238,500
Local Sales Tax Generated	1.826%	$5,000,000	$47,014
State Tax Generated	0.888%	$5,000,000	$22,872
Business Operations	**Multipliers**	**Base Demand**	**Annual Impact**
Total Employment	8.5294	20	**35**
Total Earnings	0.3073	$4,144,488	$1,273,601
Total Output	1.3463	$4,144,488	$5,579,725
Local Sales Tax Generated	1.826%	$4,144,488	$23,253
State Tax Generated	0.888%	$4,144,488	$11,312
Property Tax Generated	0.6555	$5,000,000	$32,775
Total Annual Tax Impacts			**$67,341**

The RIMS II model estimates that this kind of company would create an initial economic impact of $7.2 million dollars with construction of a $5 million facility, employ 69 workers, and produce a construction payroll of $2.6 million. That payroll, in turn, would generate $47,014 in local sales tax, and $22,872 in state tax.

During operations, this project generates a total economic impact of nearly $5.6 million annually. An ISP facility of this size would generate annual property taxes for Albany County of about $32,775 (69 mills assessed at 9.5% of facility's total value). The operation would directly support 20 well-paid employees, but also another 15 jobs would be created in the community, indirectly or through induced spending, for a total of 35 jobs with an annual payroll of nearly $1.3 million. Household spending (i.e., employees spending their wages) would annually generate excise taxes for Albany County and its municipalities of $23,253, and state taxes of $11,312. Thus, the total annual tax impact of this size of an ISP company will be $67,341 in state and local taxes.

Another growing industry that could greatly benefit from the fiber assets in the Cirrus Sky Tech Park is Voice over Internet Protocol (or VoIP). These kinds of companies provide telecommunication services to customers using the Internet, increasingly popular as consumers and businesses abandon landline technology. Such a firm would create several positive impacts for Laramie, as shown in the following table.

New Telecommunications Company (like a firm that provides VoIP)			
Construction Phase	**Multipliers**	**Base Cost**	**Total Impact**
Total Employment	13.7213	$8,000,000	110
Total Earnings	0.5150	$8,000,000	$4,120,000
Total Output	1.4477	$8,000,000	$11,581,600
Local Sales Tax Generated	1.826%	$8,000,000	$75,223
State Tax Generated	0.888%	$8,000,000	$36,595
Business Operations	**Multipliers**	**Base Demand**	**Annual Impact**
Total Employment	5.618	20	**39**
Total Earnings	0.2207	$6,936,632	$1,530,915
Total Output	1.2641	$6,936,632	$8,768,597
Local Sales Tax Generated	1.826%	$6,936,632	$27,951
State Tax Generated	0.888%	$6,936,632	$13,598
Property Tax Generated	0.6555	$8,000,000	$52,440
Total Annual Tax Impacts			**$93,989**

According to the RIMS II model, a company like this that delivers VoIP would create an initial economic impact of $11.6 million dollars with construction of an $8 million facility, employ 110 construction workers, and produce a construction payroll of $4.1 million. That payroll, in turn, would generate $75,223 in local sales tax, and $36,595 in state tax.

During operations, this project generates a total economic impact of $8.7 million annually. A VoIP facility of this size would generate annual property taxes for Albany County of about $52,440 (69 mills assessed at 9.5% of facility's total value). The operation would directly support 20 well-paid employees, but also another 19 jobs would be created in the community, indirectly or through induced spending, for a total of 39 jobs with a total payroll in excess of $1.5 million. Household spending (i.e., employees spending their wages) would annually generate excise taxes for Albany County and its municipalities of $27,951, and state taxes of $13,598. Thus, the total annual tax impact of such a VoIP facility will be $93,989 in state and local taxes.

SUMMARY OF ECONOMIC IMPACTS

A successful business recruitment strategy will be needed to recruit all of the kinds of companies identified above. However, given the competitive advantages of Laramie and the infrastructure strengths of the Cirrus Sky Tech Park, it is reasonable to expect that several of the companies described above (including a small data center, two medium data centers, a manufacturer, new ISP, and a VoIP firm) can be recruited within eight to ten years. It will take almost that long to simply build all of these facilities. Yet, ten to fifteen years from now, the full impact of these new businesses will be enormous. The following table summarizes the discussion above and demonstrates the long-term value of the business park.

Summary of Economic Impacts (10-15 years after opening of Cirrus Sky Tech Park)						
Construction Phase	**Small Data Centers**	**Medium Data Centers (2)**	**Manufacturer**	**New ISP**	**VoIP Firm**	**TOTAL**
Private Investment	$15,000,000	$224,000,000	$3,000,000	$5,000,000	$8,000,000	**$255,000,000**
Total Employment	206	3,074	41	69	110	**3,499**
Total Earnings	$7,725,000	$115,360,000	$1,545,000	$2,575,000	$4,120,000	**$131,325,000**
Total Output	$21,715,500	$324,284,800	$4,343,100	$7,238,500	$11,581,600	**$369,163,500**
Local Sales Tax Generated	$141,043	$2,106,243	$28,209	$47,014	$75,223	**$2,397,732**
State Tax Generated	$68,616	$1,024,659	$13,723	$22,872	$36,595	**$1,166,464**
Business Operations						**Annual Impact**
Total Employment	51	116	33	35	39	**273**
Total Earnings	$1,919,569	$4,387,586	$1,368,159	$1,273,601	$1,530,915	**$10,479,830**
Total Output	$4,388,851	$10,031,660	$5,221,117	$5,579,725	$8,768,597	**$33,989,950**
Local Sales Tax Generated	$35,047	$80,109	$24,980	$23,253	$27,951	**$191,341**
State Tax Generated	$17,050	$38,972	$12,152	$11,312	$13,598	**$93,085**
Property Tax Generated	$98,325	$880,992	$19,665	$32,775	$52,440	**$1,084,197**
Total Annual Tax Impacts	$150,423	$1,000,072	$56,797	$67,341	$93,989	**$1,368,622**

This summary is not intended to suggest that Laramie will not be able to recruit a large data center. Quite to the contrary, with the infrastructure that will accompany development of the Cirrus Sky Tech Park, it is likely that one or more large data centers will take a hard look at locating in Laramie. When that moment comes, land that is immediately adjacent to the Cirrus Sky Tech Park could become the site for that facility, starting the next phase of the Cirrus Sky Tech Park.

Thus, according to the RIMS II model, total private investment will be $255 million. Build-out of the Cirrus Sky Park will generate 3,499 construction jobs and a construction payroll of $131 million, with a total economic impact of $369 million. During construction, $2.4 million in local sales tax and $1.2 million in state tax will be generated (total exceeds $3.5 million). Once all of these businesses are operational, they will generate 273 jobs with an annual payroll of more than $10 million and a total economic impact of $34 million each year. On an annual basis, the Cirrus Sky Tech Park will generate an additional $191,341 in local excise taxes, $93,085 in state taxes, and $1.1 million in property taxes, for a total annual tax revenue of nearly $1.4 million.

Strategic Marketing Plan

In order to be successful, the Cirrus Sky Tech Park will need to work hard to market the opportunities it present. A concept for a strategic marketing plan is outlined below.

VISION

The City of Laramie is perfectly suited to attract data center development. The community simply needs to prepare itself to achieve their goal. This plan can guide the community to take those necessary steps.

First, Laramie must build on its competitive strengths. A budding technology industry cluster is evident from the presence of firms and institutions specializing in energy/environmental engineering, information technology, software development, and even hardware. Development of purposeful linkages among these partners is a logical next step for Laramie, in order to create an industry cluster around data center technologies. The existing LEDC initiative called SNAPIT is an excellent example of work that is already being done in this regard, and Laramie should promote it as such.

Laramie's location also provides competitive strengths. Cool, dry mountain air can help to lower cooling costs. There are nearly a dozen fiber lines already in ground nearby, providing fast, redundant access to both national communication hub points and the World Wide Web. Electric power, natural gas, and other utilities are abundant and cost competitive. The Laramie location allows direct access to wind power located very near to the proposed site. Transportation is convenient, with Interstate 80, Highway 287, and Interstate 25 providing quick access to other Front Range locations; and Denver International Airport 2-3 hours away. Laramie can enhance each of those strengths to become even more competitive. These strengths need to be highlighted in promotional materials.

Second, Laramie will need to address its competitive weaknesses. Perhaps the most important action is to develop a shovel-ready site, with all necessary power, fiber, water, sewer, roads, and other infrastructure in place. As the Cirrus Sky Tech Park concept plan is implemented, Laramie will have converted its greatest weakness into a compelling strength that will attract many types of businesses, including data centers.

Laramie's location presents some challenges that need to be addressed. While the mountain air is cool and dry (good for cooling), the air's low density will require more air movement within the facility. The relatively lower oxygen content will make it less efficient (more expensive) to operate back-up generators. Recently, a major telecommunications company considering Laramie for the siting of a data center found that there were pros and cons for using diesel fuel or natural gas; other developers may be more concerned about their carbon footprint. Accordingly, altitude will be one of those issues that should be addressed, but not highlighted, in promotional materials.

Third, Laramie's marketing efforts should specifically target data center developers that serve the rapidly growing "cloud computing" traffic. A more general approach to attract data centers and other types of technology firms should also be used, but the immediate market demand appears to favor cloud computing data centers. Yet, regardless of the market trends, the Cirrus

Sky Tech Park has been designed and prepared for both types of data centers (cloud computing and enterprise), since both are included in the broader tech market that Laramie is well-positioned to recruit.

Cloud computing is led by industry giants: Amazon, Facebook, Google, and Microsoft. Recently, Microsoft announced that it will be building a new cloud-computing center in Cheyenne (50 miles from Laramie), so it is unlikely that company will need to build yet another center anywhere nearby. Therefore, Laramie should prioritize its recruitment efforts on the other companies, while also sending a regional message that it is open for business, particularly technology-driven businesses.

Thus, this concept plan for Cirrus Sky Tech Park builds on the community's strengths, address its weaknesses, and strategically targets the most likely direction for success in recruiting data centers. There is also an excellent chance for the Cirrus Sky Tech Park to serve as a catalyst, pushing the local technology cluster into a leadership role, and developing new expertise, innovative practices, and educational opportunities. For example:

- The University of Wyoming and Laramie County Community College – Albany campus could develop new cloud computing training programs.
- Data centers benefit from learning new ways to increase power efficiency – an area of special expertise for the engineers at Manufacturing-Works.
- The growing presence of wind towers could certainly provide unique opportunities to master "green cloud computer" principles and best practices.
- Likewise, the local tech cluster could become pioneers in development of using the cloud's excess capacity as a super computer, particularly with the impending arrival of NCAR (a real super computer) to the region.

Leadership in these new areas can only enhance future business recruitment efforts and improve the community's reputation as a cloud-computing leader. Therefore, Laramie should find ways to encourage and support such partnerships.

OBJECTIVES AND GOALS

The vision outlined above suggests that the preliminary strategic marketing plan should focus on recruiting a data center facility to be built by one of the biggest cloud computing industry leaders, particularly Amazon or Google (since Microsoft recently announced that they will build a center in Cheyenne, they have been left off this list). Other companies, such as Facebook, IBM, Cisco, HP, and Dell are all currently looking for data center sites. The marketing concept could be greatly strengthened by tailoring it to the specific requirements that each of those companies imposes upon its data centers. Each has specific needs and requirements that are unique to its own operating system, power requirements, and balance within the World Wide Web traffic flow. Thus, the marketing strategy would need to be tweaked for each company; much like an individual seeking a job might adjust his or her resume to be more attractive to a prospective employer.

It is very important to realize that, while the focus of the marketing strategy may be on a few cloud-computing companies, it is also important to reach out to companies that are seeking a dedicated data center for their own internal purposes (also known as a "private cloud"). Many of those kinds of companies have traditionally sought a site that is near their headquarters.

Since 9/11, however, many corporations now will purposefully seek a distant site for security or other purposes. Of course, there are also many large corporations in the Front Range that might consider Laramie close enough for their purposes. Additionally, there are many other types of high tech companies that would be attracted to Cirrus Sky Tech Park, given its location and design. The point is that the Cirrus Sky Tech Park should be developed and marketed with ALL types of technology in mind, not just data centers.

Economic development marketing is not merely brochures, websites, and attending trade shows. Perhaps one of the most successful strategies is to work through existing relationships and networks. Accordingly, a key purpose of engaging stakeholders in this process will be to identify relationships and networking possibilities that can be leveraged to improve Laramie's chances of success. Stakeholders should therefore be given an opportunity to participate in strategic marketing decisions, and should be encouraged subsequently to become very involved in the recruiting process itself.

TARGET INDUSTRIES AND COMPANIES

While the primary focus on marketing will be on attracting a variety of data centers, other industries would greatly benefit from doing business there. Therefore, several key industries will be targeted for recruitment or development:

- Data Centers (also known as the Professional, Scientific, and Technical Service Industry)
- Computer and Electronic Product Manufacturing
- Internet and Information Services
- Telecommunications

All of these industries tend to need large facilities, pay employees well because they have advanced skills, and generate a fair amount of tax revenues for the community in which they are located.

MARKETING DATA NEEDED

The City of Laramie (and/or Laramie Economic Development Corporation) should develop a comprehensive approach to marketing that includes key comparisons to other communities for certain key topics. Based on previous experience, an outline of marketing materials would include the following topics:

- Executive Summary
- Laramie Vision
- Objective and Goals
- Project Description
- Why Laramie
- Site Description
    - Geography
    - Location
    - Climate
        - Annual Temperature charts
        - Annual Humidity charts
        - Annual Rain & snow charts

        - Annual Wind chart
        - Annual Cooling days (days over 85 - 90 degrees when cooling is needed)
- Business Environment
- Risk assessments
    - Severe Storms
    - Floods
    - Hurricanes
    - Tornados
    - Brush – Wild Fires
    - Earthquake
    - Volcano - & Volcano Ash Patterns
- Site
    - Land
    - Electricity
    - Fiber Optics
    - Natural Gas Infrastructure
    - Transportation and Workforce
    - Water Infrastructure
    - Sewage- Wastewater Infrastructure
    - Roads, access, drainage
    - Plat
- Flexible Site Overview
- Conceptual Master Plan
- Site Uses
    - Data Centers
    - Natural Gas Electric Generation
    - Wind Electric Generation
    - Solar Electric Generation
    - Energy Storage
    - Green Energy R + D Laboratories
- Data Accessibility

Maps and Exhibits

MAP 1 - STREETS, TRAILS AND PARKS

MAP 2 - FUTURE LAND USE PLAN

EXHIBIT A – OVERALL PHASING

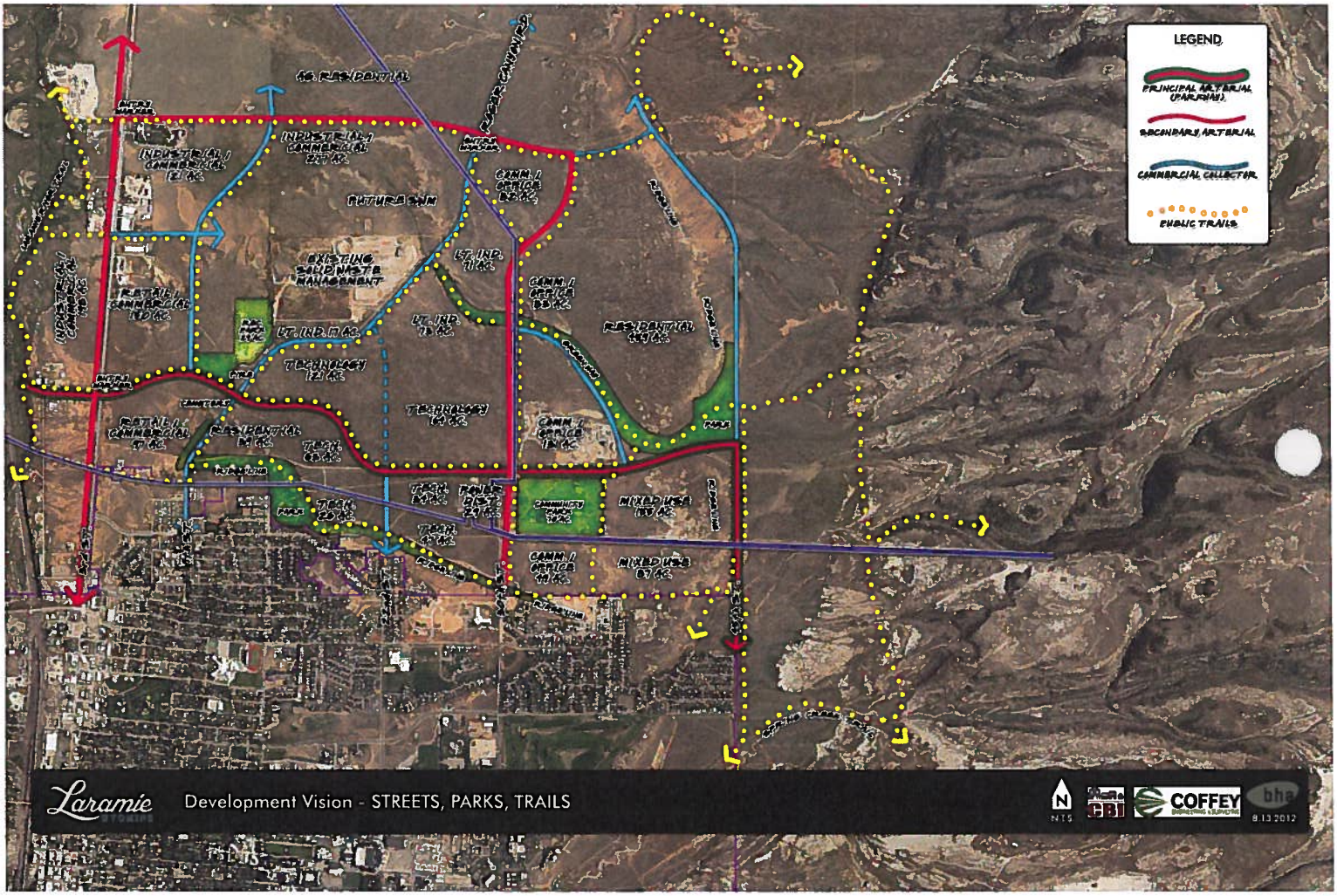
EXHIBIT B – SANITARY SEWER

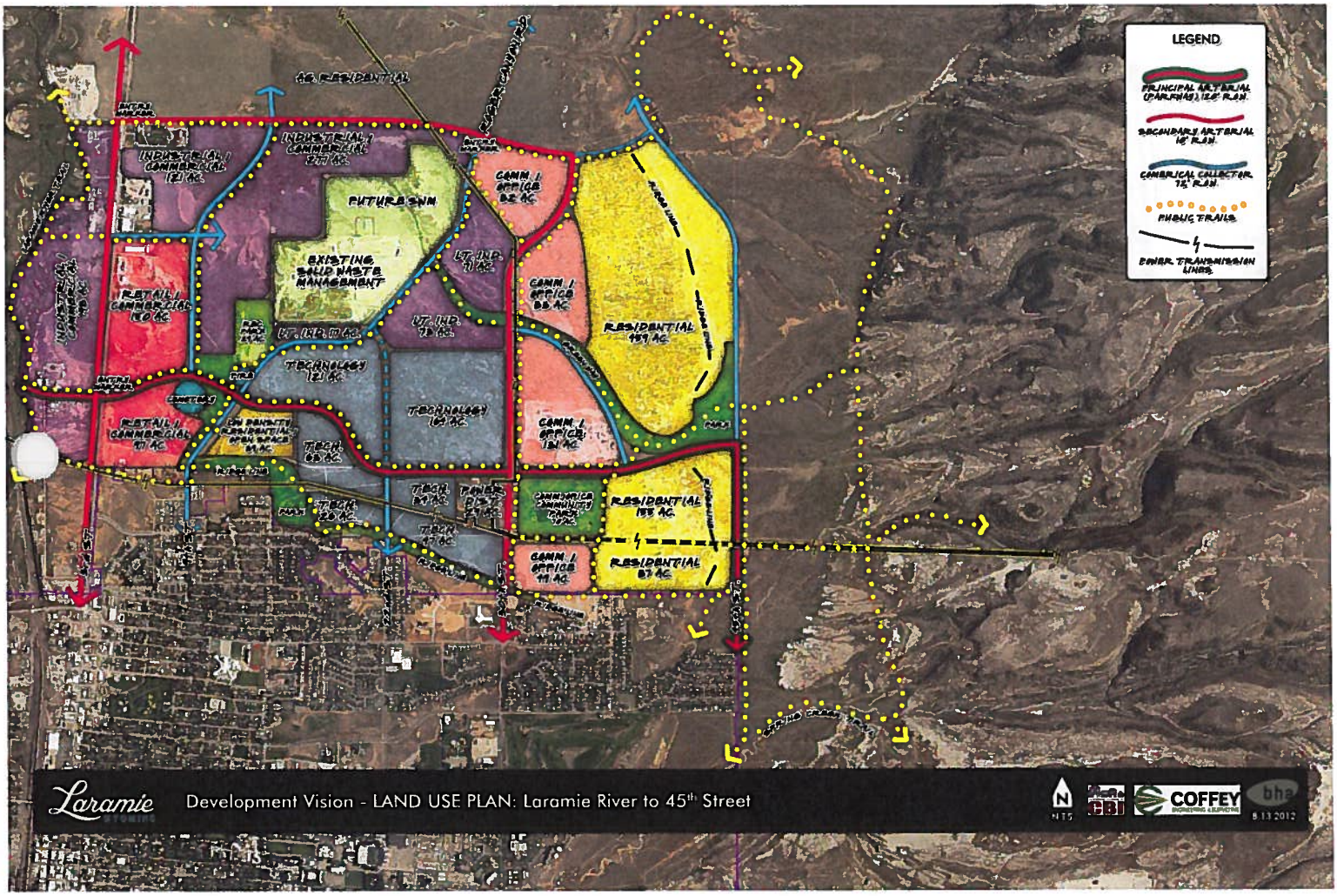
EXHIBIT C – WATERLINES

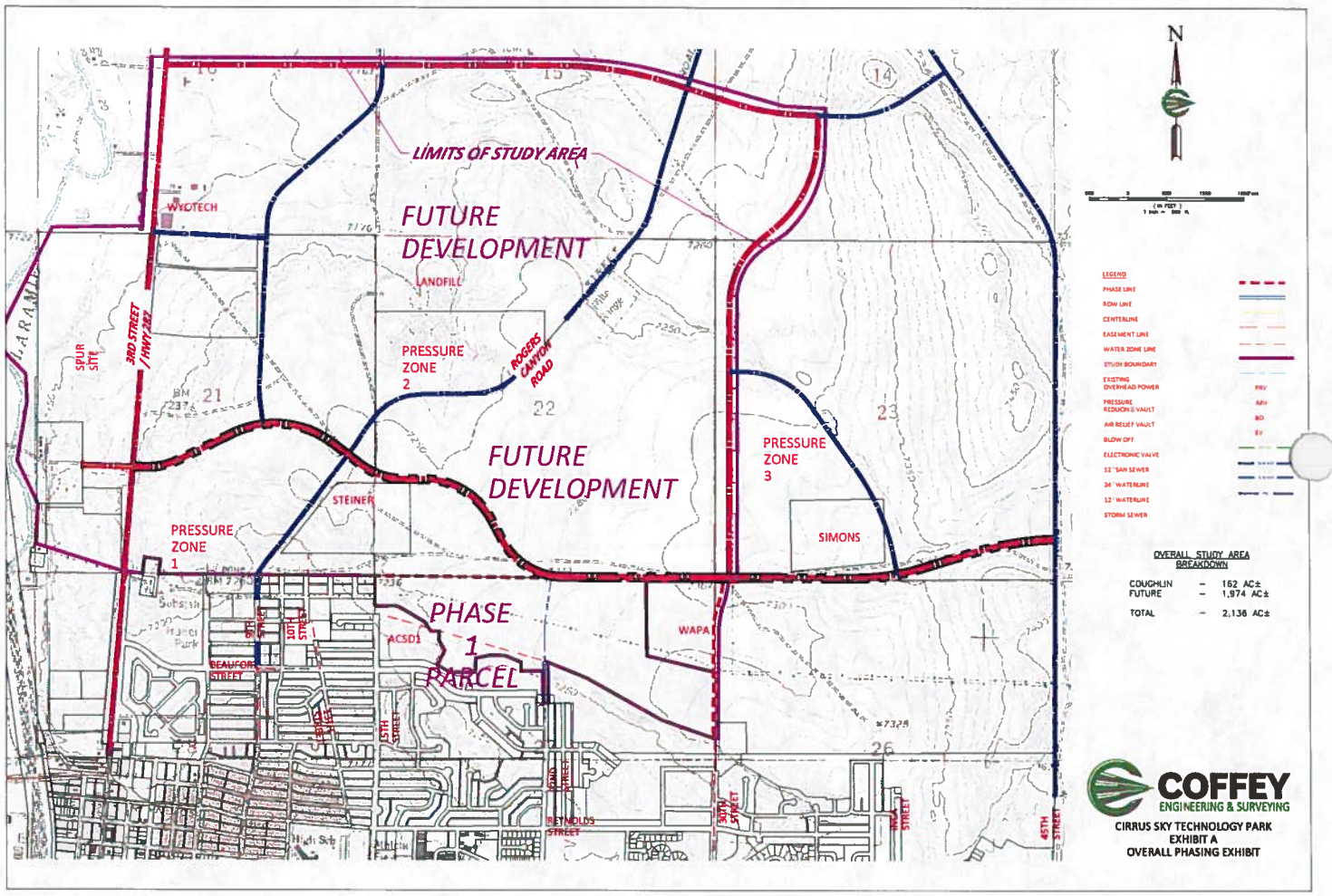
EXHIBIT D – STORM SEWER

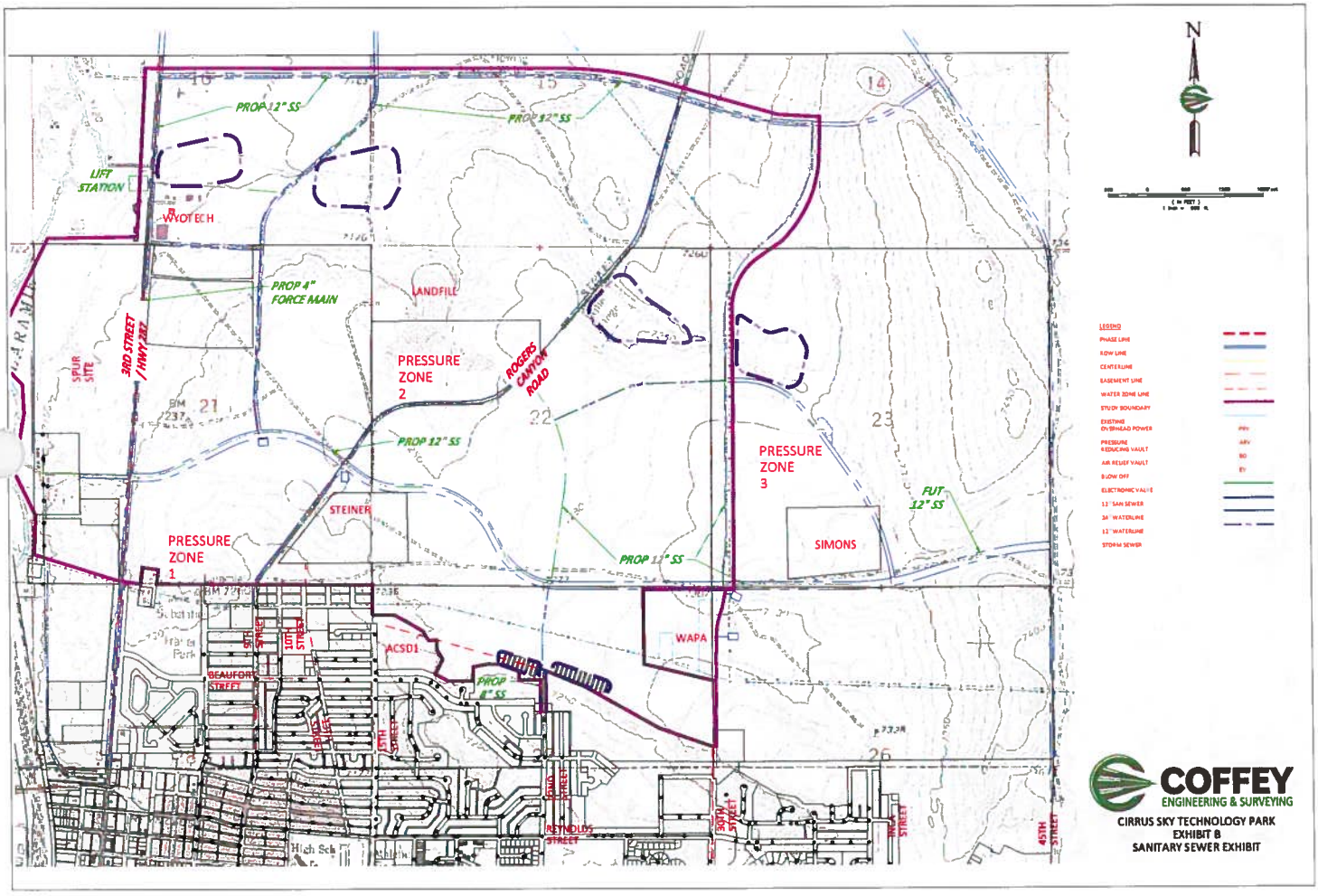
EXHIBIT E – STREETS

EXHIBIT F – PHASE ONE PARCEL INFRASTRUCTURE IMPROVEMENTS

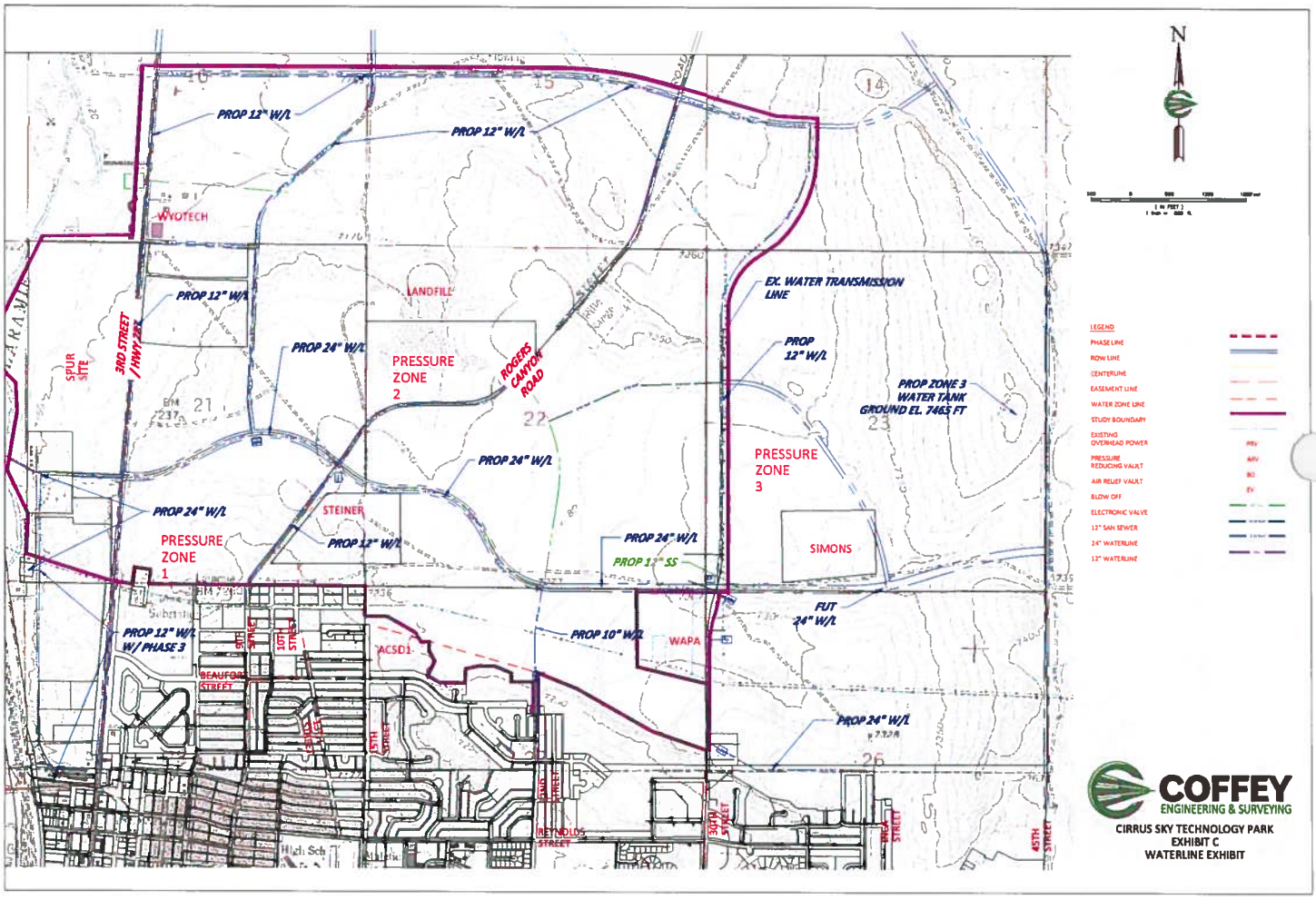

LEGEND
PRINCIPAL ARTERIAL (PARKWAY)
SECONDARY ARTERIAL
COMMERCIAL COLLECTOR
PUBLIC TRAILS
Laramie
Development Vision - STREETS, PARKS, TRAILS
N
NTS
COFFEY
8.13.2012

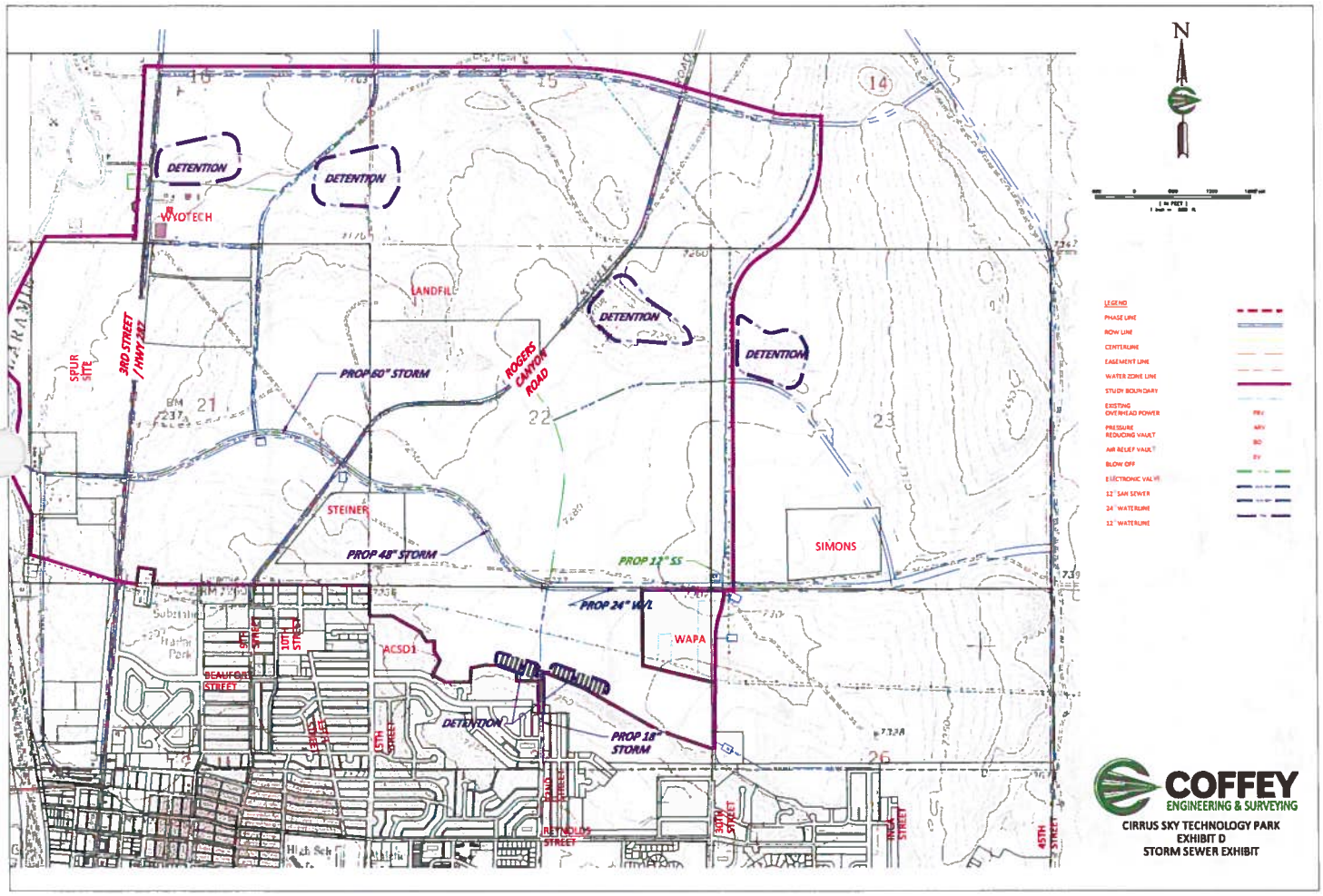

LEGEND
PRINCIPAL ARTERIAL (PARKWAY) 120' R.O.W.
SECONDARY ARTERIAL 10' R.O.W.
COMERICAL COLLECTOR 72' R.O.W.
PUBLIC TRAILS
POWER TRANSMISSION LINES
AG. RESIDENTIAL
INDUSTRIAL / COMMERCIAL 121 AC.
INDUSTRIAL / COMMERCIAL 277 AC.
FUTURE SWM
EXISTING SOLID WASTE MANAGEMENT
COMM. / OFFICE 82 AC.
LT. IND. 71 AC.
COMM. / OFFICE 83 AC.
RESIDENTIAL 459 AC.
RETAIL / COMMERCIAL 150 AC.
LT. IND. 77 AC.
LT. IND. 73 AC.
TECHNOLOGY 121 AC.
TECHNOLOGY 164 AC.
COMM. / OFFICE 131 AC.
RETAIL / COMMERCIAL 97 AC.
TECH. 63 AC.
TECH. 20 AC.
TECH. 47 AC.
RESIDENTIAL 155 AC.
COMM. / OFFICE 44 AC.
RESIDENTIAL 87 AC.
Laramie
Development Vision - LAND USE PLAN: Laramie River to 45th Street
COFFEY
bha
8.13.2012

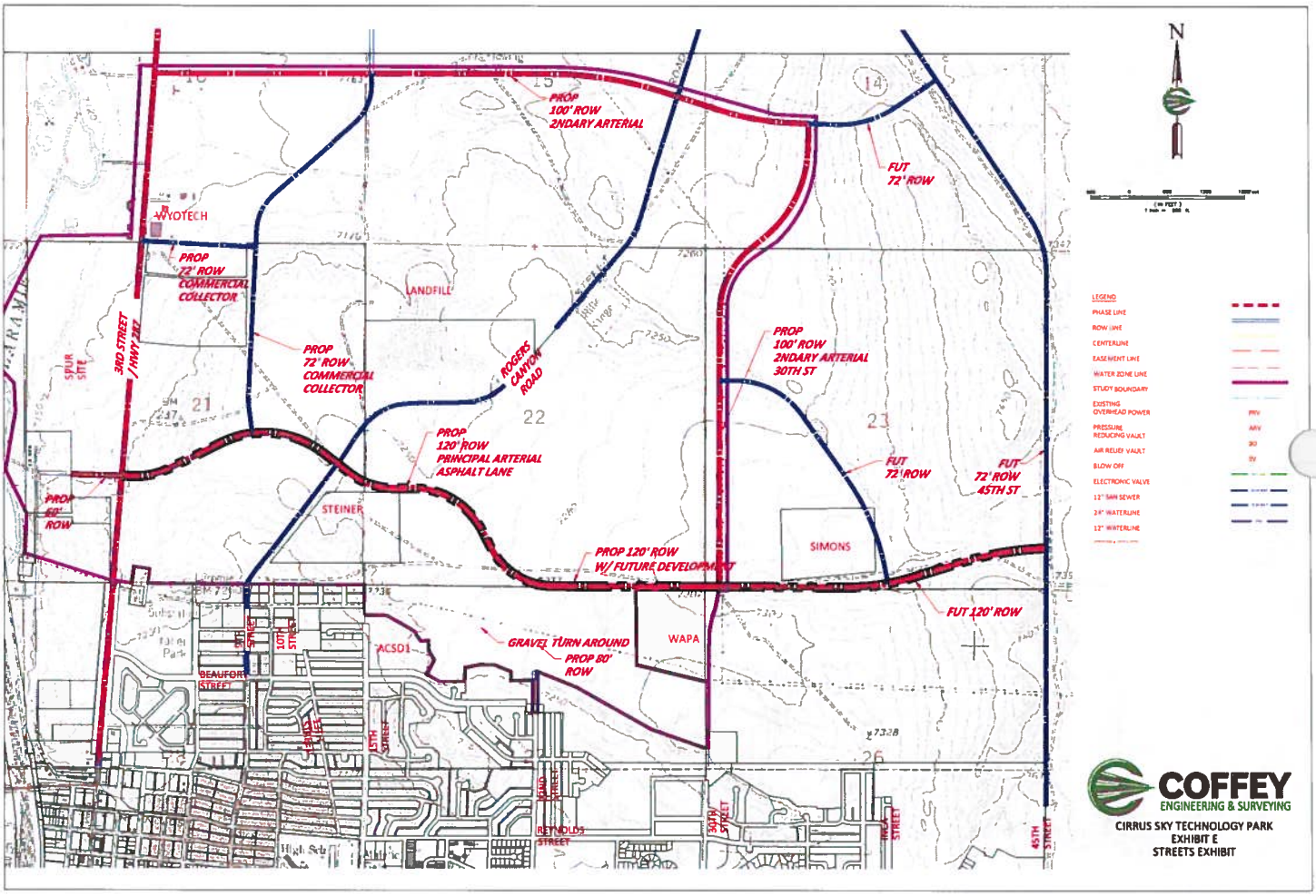

LIMITS OF STUDY AREA
FUTURE DEVELOPMENT
LANDFILL
WYOTECH
3RD STREET / HWY 287
SPUR SITE
PRESSURE ZONE 2
ROGERS CANYON ROAD
FUTURE DEVELOPMENT
PRESSURE ZONE 3
STEINER
SIMONS
PRESSURE ZONE 1
PHASE 1 PARCEL
ACSD1
WAPA
BEAUFORD STREET
9TH STREET
10TH STREET
15TH STREET
30TH STREET
REYNOLDS STREET
45TH STREET
N
LEGEND
PHASE LINE
ROW LINE
CENTERLINE
EASEMENT LINE
WATER ZONE LINE
STUDY BOUNDARY
EXISTING OVERHEAD POWER
PRESSURE REDUCING VAULT
AIR RELIEF VAULT
BLOW OFF
ELECTRONIC VALVE
12 " SAN SEWER
24 " WATERLINE
12 " WATERLINE
STORM SEWER
OVERALL STUDY AREA BREAKDOWN
COUGHLIN – 162 AC±
FUTURE – 1,974 AC±
TOTAL – 2,136 AC±
COFFEY
ENGINEERING & SURVEYING
CIRRUS SKY TECHNOLOGY PARK
EXHIBIT A
OVERALL PHASING EXHIBIT

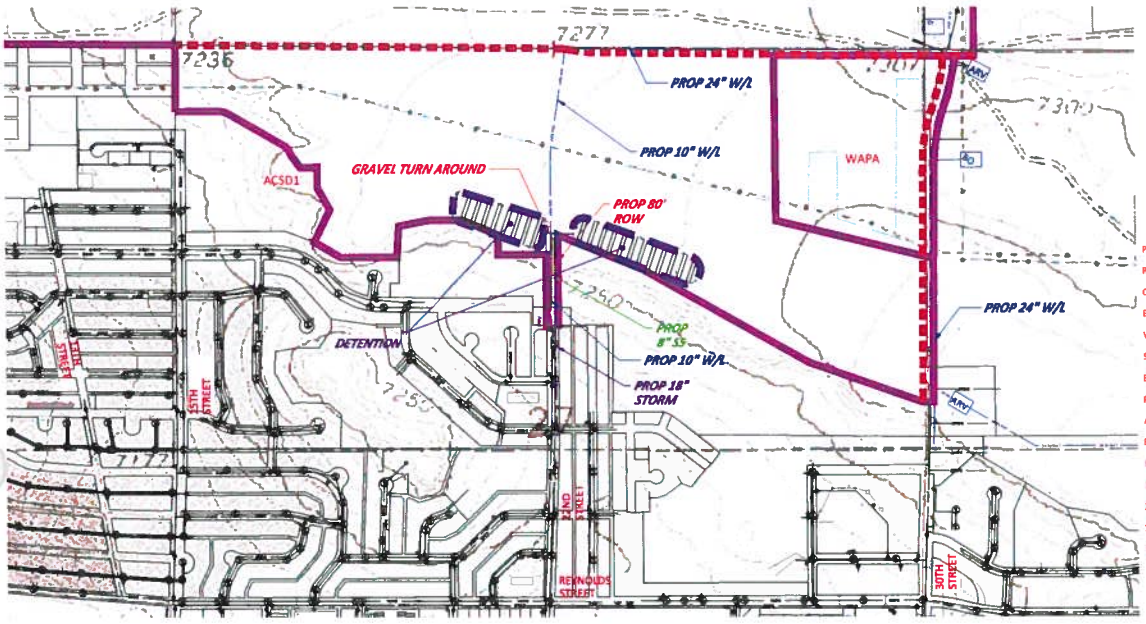


N
PROP 12" SS
LIFT STATION
WYOTECH
PROP 4" FORCE MAIN
LANDFILL
SPUR SITE
3RD STREET / HWY 287
PRESSURE ZONE 2
ROGERS CANYON ROAD
PRESSURE ZONE 3
FUT 12" SS
STEINER
PRESSURE ZONE 1
SIMONS
WAPA
ACSD1
PROP 8" SS
BEAUFORT STREET
REYNOLDS STREET
45TH STREET
LEGEND
PHASE LINE
ROW LINE
CENTERLINE
EASEMENT LINE
WATER ZONE LINE
STUDY BOUNDARY
EXISTING OVERHEAD POWER
PRESSURE REDUCING VAULT
AIR RELIEF VAULT
BLOW OFF
ELECTRONIC VALVE
12" SAN SEWER
24" WATERLINE
12" WATERLINE
STORM SEWER
COFFEY
ENGINEERING & SURVEYING
CIRRUS SKY TECHNOLOGY PARK
EXHIBIT B
SANITARY SEWER EXHIBIT


PROP 12" W/L
PROP 12" W/L
WYOTECH
PROP 12" W/L
LANDFILL
EX. WATER TRANSMISSION LINE
3RD STREET / HWY 222
SPUR SITE
PROP 24" W/L
PRESSURE ZONE 2
ROGERS CANYON ROAD
PROP 12" W/L
PROP ZONE 3 WATER TANK GROUND EL. 7465 FT
PROP 24" W/L
PRESSURE ZONE 3
PROP 24" W/L
STEINER
PRESSURE ZONE 1
PROP 12" W/L
PROP 24" W/L
PROP 12" SS
SIMONS
FUT 24" W/L
PROP 12" W/L W/ PHASE 3
PROP 10" W/L
WAPA
ACSD1
BEAUFORT STREET
PROP 24" W/L
REYNOLDS STREET
45TH STREET
N
LEGEND
PHASE LINE
ROW LINE
CENTERLINE
EASEMENT LINE
WATER ZONE LINE
STUDY BOUNDARY
EXISTING OVERHEAD POWER
PRESSURE REDUCING VAULT
AIR RELIEF VAULT
BLOW OFF
ELECTRONIC VALVE
12" SAN SEWER
24" WATERLINE
12" WATERLINE
COFFEY
ENGINEERING & SURVEYING
CIRRUS SKY TECHNOLOGY PARK
EXHIBIT C
WATERLINE EXHIBIT


N
DETENTION
DETENTION
DETENTION
DETENTION
DETENTION
WYOTECH
LANDFILL
SPUR SITE
3RD STREET / HWY 287
PROP 60" STORM
ROGERS CANYON ROAD
STEINER
PROP 48" STORM
PROP 12" SS
PROP 24" W/L
SIMONS
WAPA
ACSD1
BEAUFORT STREET
9TH STREET
10TH STREET
15TH STREET
PROP 18" STORM
RETNOLDS STREET
30TH STREET
45TH STREET
LEGEND
PHASE LINE
ROW LINE
CENTERLINE
EASEMENT LINE
WATER ZONE LINE
STUDY BOUNDARY
EXISTING OVERHEAD POWER
PRESSURE REDUCING VAULT
AIR RELIEF VAULT
BLOW OFF
ELECTRONIC VALVE
12" SAN SEWER
24" WATERLINE
12" WATERLINE
COFFEY
ENGINEERING & SURVEYING
CIRRUS SKY TECHNOLOGY PARK
EXHIBIT D
STORM SEWER EXHIBIT


PROP
100' ROW
2NDARY ARTERIAL
FUT
72' ROW
WYOTECH
PROP
72' ROW
COMMERCIAL
COLLECTOR
LANDFILL
3RD STREET
/ HWY 287
SPUR
SITE
PROP
72' ROW
COMMERCIAL
COLLECTOR
ROGERS
CANYON
ROAD
PROP
100' ROW
2NDARY ARTERIAL
30TH ST
PROP
120' ROW
PRINCIPAL ARTERIAL
ASPHALT LANE
FUT
72' ROW
FUT
72' ROW
45TH ST
PROP
60'
ROW
STEINER
SIMONS
PROP 120' ROW
W/ FUTURE DEVELOPMENT
FUT 120' ROW
GRAVEL TURN AROUND
PROP 80'
ROW
WAPA
ACSD1
BEAUFORT
STREET
9TH
STREET
10TH
STREET
JAMES
ALLEE
15TH
STREET
REYNOLDS
STREET
30TH
STREET
45TH
STREET
N
LEGEND
PHASE LINE
ROW LINE
CENTERLINE
EASEMENT LINE
WATER ZONE LINE
STUDY BOUNDARY
EXISTING
OVERHEAD POWER
PRESSURE
REDUCING VAULT
AIR RELIEF VAULT
BLOW OFF
ELECTRONIC VALVE
12" SAN SEWER
24" WATERLINE
12" WATERLINE
COFFEY
ENGINEERING & SURVEYING
CIRRUS SKY TECHNOLOGY PARK
EXHIBIT E
STREETS EXHIBIT



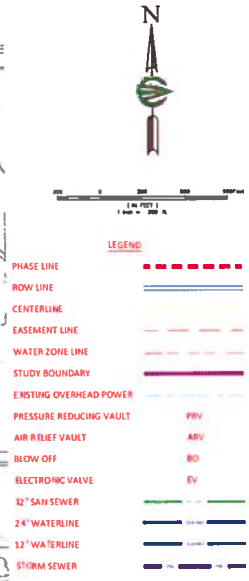


EXHIBIT NOTES

1. COST FOR FRANCHISE UTILITIES NOT INCLUDED IN REPORT AS OF 07-09-2012
2. ROW ACQUISITION NOT INCLUDED WITH COSTS IN REPORT AS OF 07-09-2012
3. PAVEMENT ZONE 1 REQUIRES MORE EXPENSIVE PAVEMENT THAN PAVEMENT ZONE 4- USED FOR ALL ROADS IN PHASE 3
4. DEVELOPMENT OF THE 162 ACRE PHASE 1 WILL INCLUDE EXTENSION OF A 24-INCH WATERLINE FROM INCA TO 22ND & ASPHALT LANE, 8 AND 12" SEWERLINE EXTENDING NORTH INTO THE PROPERTY FROM THE SOUTH AS SHOWN, 2 LOCAL DETENTION PONDS AND STORM SEWER OUTFALLS.
5. FUTURE DEVELOPMENT INCLUDES THE NECESSARY INFRASTRUCTURE TO SERVICE THE REMAINDER OF THE PROPERTY INCLUDING A 24-INCH WATERLINE CONNECTING TO AN EXISTING 10-INCH AND CONSTRUCTION OF A LOCAL STREET ROW INTO THE WRI PROPERTY FROM 287 AND A LIFT STATION, MULTIPLE DETENTION PONDS, EXTENSIVE SEWER AND WATERLINES ALONG WITH PARKWAY, 2NDARY ARTERIAL AND INDUSTRIAL COLLECTOR ROADS.

COFFEY
ENGINEERING & SURVEYING

CIRRUS SKY TECHNOLOGY PARK
EXHIBIT F
PHASE 1 PARCEL EXHIBIT
MINIMUM INFRASTRUCTURE IMPROVEMENTS

INDUSTRY PARTNERSHIP SOLOUTIONS

LARAMIE TECHNOLOGY WORKFORCE PROJECT

SNAPIT TECHNOLOGY WORKFORCE SURVEY ANALYSIS & FINDINGS

Submitted to the Wyoming Workforce Development Council
June 14, 2012

Prepared for the
SNAPIT PARTNERSHIP
by
Laramie Economic Development Corporation
P.O. Box 1250
2523 East Garfield Avenue, Suite B
Laramie, WY 82073
307-742-2212
www.LaramieWY.org

LARAMIE WORKFORCE TECHNOLOGY PROJECT

SNAPIT TECHNOLOGY WORKFORCE SURVEY ANALYSIS

LARAMIE, WYOMING

Table of Contents

Executive Summary 1
Importance of the Laramie Technology Sector 2
SNAPIT Partnership & Board of Directors 3
Targeted Technology Companies by Business Category 4
SNAPIT Technology Workforce Survey 5
Company Information 5
Targeted Companies That Participated in the SNAPIT Technology Workforce Survey 5
Technology Company Differentiation by Business Category 5
Company Ownership, Legal Status, Structure and Organization 7
Primary Product/Service Life Cycle 8
Proprietary Status of Primary Product/Service 9
Years in Business and Years in Current Facilities 9
Ownership and Management Changes 10
Leadership Planning Processes 11
Technology Dependency 11
Technology Workforce 12
Difficult Workforce Issues 12
Company Leadership Cultures 16
Historical Workforce Records Kept 18
Company Employment 19
Employment Trends 21
Anticipated and Open Positions (at Time of Survey) 21
Availability-Quality-Stability Ratings 23
Essential Employees (Phase of Career) 24
Commuting Requirements (Existing Technical Workforce) 24
Recruiting Technical Candidates 25
Relocation Assistance 27
Employment Processes 28
Advantages or Benefits of Being Employed at Technology Companies 31
Employment offer Refusals for Reasons other than Compensation 32
Employee Performance Appraisal, Communication and Feedback 33
Educational Credentials and Training 35
Educational or Tuition Assistance 37
Employee Turnover Comparisons 38
Competitive Compensation 39
Area Compensation Rates 40
Healthcare Considerations 41
Reasons for Turnover 41
Municipal & Community Services 43
Comments/Suggestions for Improving Infrastructure and Services 44
Community Strengths as a Place for Business 46
Community Weaknesses as a Place for Business 48

Barriers to Growth in Community....50
Findings & Conclusions....52
Local Recruiting....52
Other Significant Findings Related to Recruiting....55
Findings Regarding Workforce Trends....57
Findings Regarding Municipal and Community Services....57
Laramie as "Place to Do Business"....58
Technology Workforce Needs & Pathways to Solutions....59
Need #1 – Market Laramie as a Technology Rich Entrepreneurial Region....59
Need #2 – Develop, Refine, Expand and Organize Networks to Benefit the Technology Workforce....60
Need #3 – Expand and Extend Outreach Services to Technology Companies....61
Need #4 – Knowledge Concerning Competitive Compensation & Benefits....62
Need #5 – Small Employer Cost Competitive Access to Healthcare Insurance Plans....62
Need #6 – Small Employer Workforce Stabilization....63
Need #7 – Explore the Feasibility of Vocational Skills Training....63
Need #8 – Relay SNAPIT Municipal and Community Service Assessments to Responsible Entities....63
Concluding Comments....64

Appendices
Appendix A – Workforce Challenges/Significant Causes/Best Realistic Solutions....65
Appendix B – Educational Credentials and Training Issues....75

Table of Tables

Table 1 Business Categories for Laramie Technology Companies....4
Table 2 Surveyed Technology Companies....5
Table 3 Life Cycle Stages....8
Table 4 Time in Current Facility by Business Category....10
Table 5 Leadership Culture – Laramie Technology Companies....17
Table 6 Leadership Culture – Business Categories....18
Table 7 Historical Records Kept by Surveyed Technology Companies....19
Table 8 Distribution of Total Full-Time Employment for Surveyed Technology Companies....20
Table 9 Full-Time Employment for Surveyed Technology Companies by Business Categories....20
Table 10 Recruiting Sources for Surveyed Technology Companies....25
Table 11 Steps in Employment Processes of Surveyed Technology Companies....28
Table 12 Perceived Turnover by Business Category....38
Table 13 Compensation Structure Comparison....39
Table 14 Area Compensation Rates for Engineer and Technician....40
Table 15 September 2011 Salary Survey Rates....40
Table 16 Reasons for Turnover....42
Table 17 Municipal and Community Services Ratings....43

EXECUTIVE SUMMARY

The primary purpose of the Laramie Technology Workforce Project (LTWP) is to facilitate the sustainable development of Laramie's technology sector workforce. The continued growth and advancement of Laramie's technology sector is important to Laramie's economy and the future of the community.

In cultivating plans for achieving this purpose, a unique industry partnership was created with the support of the Laramie Economic Development Corporation (LEDC) through a grant from the Wyoming Department of Workforce Services and Wyoming's Workforce Development Council. In addition to technology-based companies and LEDC, the industry partnership drew support from the University of Wyoming, the Wyoming Technology Business Center (WTBC), Laramie County Community College – Albany County Campus, and Laramie's Department of Workforce Services. This collaborative partnership assumed the name SNAPIT, an acronym for Solutions Networking Applied to People in Technology. The mission of SNAPIT is to identify common technology workforce issues for the purpose of providing solutions, developing the skilled workforce, supporting growth and providing a voice for technology-based companies in order to strengthen the economic region.

To gain better insight into Laramie's technology sector, its composition, strengths, challenges and concerns, a SNAPIT Technology Workforce Survey (STWS) was conducted with thirty technology-based companies located in the Laramie area. This survey was designed to help acquaint the SNAPIT partnership with these companies, and with their executive managers' insights and opinions regarding the Laramie technology workforce, its business environment and community support services.

With specific regard to Laramie's common technology workforce issues, the STWS confirms an anticipated major challenge; that is the recruitment of qualified and experienced technical and professional employees. To a lesser degree, but still somewhat prevalent, are challenges involving "job fit," compensation and benefits, work scheduling and trailing spouses.

As is the case with most commercial sectors, the proclivity for technology companies to grow and prosper is substantively influenced by the location's infrastructure and community support services. In this respect, being the home of the University of Wyoming, Laramie's quality of life, its people, location and low business operating costs all enhance Laramie's image as a good place for business. On the other hand, some of the more dominant detractors affecting business and its growth potential include Laramie's relatively small population, its climate, difficulties recruiting qualified and experienced technical employees, affordable housing, and the lack of local investment financing to fund start-ups and entrepreneurial initiatives.

Subsequent to analyzing the results of its STWS, our SNAPIT Partnership reached consensus regarding a number of Laramie technology workforce needs. In brief, those needs encompass marketing and networking initiatives that focus on Laramie's technology assets and image; extending and expanding outreach services; and advocating for Laramie's small businesses in a manner that strengthens competitiveness and stability.

At this time, the SNAPIT Partnership has created a number of pathways to solutions intended to satisfy the needs described in this report document. Additional work needs to be done on these pathways and possibly new paths, leading to additional or improved solutions, need to be cleared.

IMPORTANCE OF THE LARAMIE TECHNOLOGY SECTOR

Laramie, Albany County and the surrounding area are enriched by virtue of their proximity to the highly regarded centers of knowledge such as the University of Wyoming, LCCC, WyoTech and other technical training institutions.

Technology can be broadly defined as the practical application of knowledge (as derived through educational institutions, intuition and insight, experience and a vast array of other sources). Technology refers to an understanding of techniques, tools, skills, processes, raw materials and resources that combine to produce desired products and services, to solve problems, fulfill needs or satisfy wants.

Over the recent past, the number of technology-based businesses in Laramie has grown significantly, creating Laramie's technology sector. One key contributor to the growth of Laramie's technology sector has been the University's Wyoming Technology Business Center (WTBC), which began operations in 2006. This 30,000 square foot facility serves as an incubator for early stage technology-based companies.

Dr. William Gern, University of Wyoming Vice President of Research and Economic Development, has indicated that before 1994, the technology sector was composed of less than a dozen companies. In early 2011, at the time we began gathering information for this Laramie Technology Workforce Project, we identified and targeted more than fifty technology companies operating in Laramie, representing all stages of business development. According to Gern, the best estimate is that there are approximately 65 technology companies located within the Laramie technology sector today – most have an association with the University.

Not only do these technology companies typically have the propensity to pay higher compensation including benefits, they produce products and services that tend to be sold outside the area. This introduces new dollars into the community and supports local service providers, retailers, and infrastructure needed for a growing, healthy local economy.

At the present time, the fifty-two technology companies that were ultimately targeted for our study are estimated to employ more than 600 full-time employees. Based on an estimated average annual income of $35,152 for employees of Albany County, WY, 600 employees conservatively corresponds to an annual technology sector payroll estimate of more than $21 million dollars.

Point of Interest:

Laramie's technology sector is estimated to employ more than 600 full-time employees with a corresponding estimated annual payroll exceeding $21,000,000.

SNAPIT PARTNERSHIP & BOARD of DIRECTORS

Shortly after LEDC was awarded the Industry Partnership Solutions (IPS) grant from the Wyoming Department of Workforce Services and Wyoming's Workforce Development Council, a SNAPIT Partnership was created. In addition, a SNAPIT Board of Directors was organized to oversee and ensure the implementation of IPS plans and activities. Presently, the SNAPIT Board of Directors consists of the following members:

Name	Position/Employer
Dr. Jonathon L. Benson (SNAPIT Board President)	Chief Executive Officer Wyoming Technology Business Center
Even Brande	Chief Executive Officer Handel Information Technologies, Inc.
Jo Chytka	Director – Center for Advising & Career Services University of Wyoming
Tom Hembree	Engineering Manager Intevac Photonics DeltaNu, LLC
Karissia Kersey	Human Resources Manager Trihydro Corporation
Christine Langley	Vice President Wyoming Technology Business Center
Annette Mello	Laramie Workforce Center Manager Wyoming Department of Workforce Services
Derek Mitchum	Vice President of Information Technology Trihydro Corporation
Luke Schneider	Chief Executive Officer Medicine Bow Technologies
Susan Scractchley	Development & Communications Officer (Albany) Laramie County Community College
Joe Somodi (SNAPIT Intermediary)	Vice President Laramie Economic Development Corporation
Dr. Lynn Stalnaker	Dean of Albany County Campus Laramie County Community College
Tim Stamp	Business Development Director Coffey Engineering & Surveying, LLC
Weston Welch	Chief Executive Officer Pronghorn Technologies, Inc.

In the early development of the Laramie Technology Workforce Project, Dr. William Gern and Gene Watson, Consultant for the UW Office of Research and Economic Development, produced a listing of area technology businesses, with which they were familiar. This listing provided the SNAPIT partnership with information necessary to initiate SNAPIT membership solicitations.

Any Laramie area technology-based company that is interested in joining the SNAPIT partnership is invited to do so. In introductory contact meetings, executives from Laramie's technology sector are typically advised that becoming a SNAPIT partnership member entails willingness to:

- share, their time and experiences with the partnership,
- attend periodic meetings to discuss issues affecting their business, and
- participate in confidential interviews and surveys.

TARGETED TECHNOLOGY COMPANIES BY BUSINESS CATEGORY

A total of fifty-two technology companies were originally targeted for surveying under the Laramie Technology Workforce Project. Thirty, or 58% of those fifty-two companies, agreed to participate in the SNAPIT Technology Workforce Survey. Based upon information secured through website research or survey interviews, SNAPIT has grouped the primary products/services of these targeted companies into business categories. Table 1 identifies the number of surveyed and targeted technology companies associated with each business category.

Table 1 - Business Categories for Laramie Technology Companies

Type of Business	# Surveyed Companies	% of Total	# Targeted Companies*	% of Total
Engineering & Environmental Consulting	8	26.7%	12	23.1%
Manufacturing/Repair/ Construction	6	20.0%	7	13.5%
IT Systems/Software Development	5	16.7%	10	19.2%
Scientific-Technological Research/Analytics	4	13.3%	10	19.2%
Graphic Design (Web/Print)	4	13.3%	10	19.2%
Natural Resources/ Conservation	3	10.0%	3	5.8%
Total	**30**	**100.0%**	**52**	**100.0%**

*Includes Surveyed Companies

This data gives a reasonable representation regarding the current composition of technology businesses in the Laramie area. Consequently, it provides a glimpse into the types of technical skills upon which the Laramie technology sector is currently reliant.

Based on this distribution of technology business categories, it appears that the Laramie technology sector primarily consists of businesses that apply Engineering & Environmental, IT Systems and Software

Development, Scientific-Technological Research and Analytical, Graphic Design and Conservation skill sets. Companies associated with Laramie's Manufacturing/Repair/Construction business category apply a diverse set of technical disciplines and processes.

SNAPIT TECHNOLOGY WORKFORCE SURVEY

The SNAPIT Technology Workforce Survey, in which thirty Laramie area technology companies participated, consists of questions relating to individual Company Information, Laramie's Technology Workforce, and Municipal & Community Services impacting economic growth. This report summarizes participant opinions, perceptions and factual responses to questions, as well as findings associated with each of these topics.

It is recognized that survey data based on qualitative opinions and perceptions can occasionally raise questions about the extent to which survey results reflect reality. These questions, however, should invigorate rather than dampen our SNAPIT partnership's resolve to identify causes and seek solutions to issues that the survey findings reveal. As Leonardo da Vinci once asserted, "All our knowledge has its origins in our perceptions."

Point of Interest:
"All our knowledge has its origins in our perceptions."
- Leonardo da Vinci -

COMPANY INFORMATION

Targeted Companies That Participated in the SNAPIT Technology Workforce Survey -
Table 2 identifies the thirty Laramie technology companies that participated in the SNAPIT Technology Workforce Survey.

Table 2 – Surveyed Technology Companies

AMEC Earth & Environmental	Edge Environmental, Inc.	Intevac Photonics DeltaNu, LLC
Analogic Engineering, Inc.	Falcon Technology Systems Ltd	Medicine Bow Technologies
Aristatek	Firehole Composites	Modern Printing Company
BC Technologies	Fusestudios Media Consulting, LLC	Pronghorn Technologies, LLC
C.F. Electronics	Green Build Technologies, Inc.	Tiger Tree Land Management
Coffey Engineering & Surveying, LLC	Handel Information Technologies, Inc.	Trihydro Corporation
Crystal Solutions, LLC	Happy Jack Software, Inc.	Western Research Institute
Digital Blues, Inc.	Hayden-Wing Associates	Wester-Wetstein & Associates
Dodds Shoe Company, Inc.	Hydrologic, LLC	WWC Engineering
DOWL-HKM	InterTech Environmental & Engineering	Z4 Energy Systems, LLC

Technology Company Differentiation by Business Category -
The ability to communicate a company's strategic competitive advantages to customers showcases the company's uniqueness, which, in turn, helps market its products and services. To be effective, the competitive advantages must be meaningful to the customer.

With these outcomes in mind, survey participants were asked to identify factors contributing to their company's success that also differentiate them from their competitors in the region. Participant responses, organized by business category, follow:

Engineering and Environmental Consulting

- "Water resource planning."
- "The people we hire are tough, with good expertise. We create our own data and we don't outsource. Information Technology (IT) is very much a part of our consulting team."
- "Our civil engineering expertise, and also one-stop shopping." (Work with materials, geo-technical issues and water)
- "Our expertise is in land surveying."
- "We have a global reach and can bring in experts that local competitors wouldn't have access to. We have a reputation for technical excellence, customer service and innovation."
- "We have a commercial arm of the company."
- "We are more tech savvy."
- "Every project is managed by an Engineer or Hydro-geologist with over 15 years of experience. We're most experienced in ground water."

Manufacturing/Repair/Construction

- "Lower cost and better value."
- "We operate better in the back country and mountains."
- "We reduce VOC's (Volatile Organic Compounds, which measure indoor air quality). We have tools to evaluate VOC's in a house."
- "We are a builder and rebuilder of electronic components. Some of those components are for military equipment that is very old."
- "We have a commercial facility in the area. Our experience tells us how to best separate oil and water at different concentrations."
- "Innovation and product differentiation."

IT Systems/Software Development

- "Our market is primarily in this region."
- "Technology in our market. Most competitors are not web-based."
- "The data base portion of our application incorporates computational tools, and unique types of modeling."
- "We've been in business longer than our competition. We're bigger and provide superior service and support."
- "We do all our work in-house. We do not use subcontractors."

Scientific-Technological Research/Analytics

- "Proprietary rotor blade that passively adapts to wind speed."
- "We've designed a transducer that we can steer in order to detect cracks in a rail. We can also identify distance to the crack."
- The (unique) technology we use."
- "Technical capabilities and value of technology solutions. We are very cost competitive."

Graphic Design (Web/Print)

- "We talk to the customer to make sure we know what he or she wants. Then, our job is to make you (the customer) look good."
- "We handle small runs and provide quick turnaround."
- "Blending design development and marketing experience."
- "Through e-business, we market on a regional and national basis."

Natural Resources/Conservation

- "We have a good rapport with the Corps of Engineers."
- "Our long history of experience in thorough and objective reporting."
- "Our work ethic. People enjoy their work. We are all professionals."

Although our survey did not further explore the issue, it would be interesting to determine how our technology companies market their competitive advantages to grow their businesses.

Company Ownership, Legal Status, Structure and Organization –

Questions pertaining to ownership, legal status, company structure and organization, provide insight into freedom and constraints associated with the way a company conducts business, as well as management's processes for making decisions or taking desired action.

- Twenty-nine of the surveyed companies are privately held; one is publicly owned.
- Twenty-nine of the surveyed companies are "for-profit" corporations; one is a "not-for-profit" corporation.
- Four (13%) of the thirty surveyed companies report to a parent company or organization that is located outside of Wyoming.
- Worker Representation – Union representation does not exist at any of the thirty surveyed technology companies.
- The following functions are performed in the thirty surveyed Laramie technology companies:

Function	Number of Companies Function is Performed
Business Unit Headquarters	26
Engineering/R&D	20
Services (including consulting)	8
Manufacturing *	6
Distribution	3
Warehousing	1

* Of the six surveyed manufacturing companies, one company is ISO 9000 certified. ISO (International Standards Organization) 9000 is a family of standards corresponding to quality management systems that are designed to ensure manufacturers meet customer needs. Third party certification organizations provide independent auditing of certification requirements.

Primary Product/Service Life Cycle -

Like human beings, products and services pass through stages from birth (emerging) to decline and ultimately death. Different operating, marketing, financing and human resources strategies are required for each life cycle stage. Product pricing strategies, for example, will typically result in higher pricing during a product's "Growth" stage, than in its "Declining" stage. Similarly, operating costs are normally very high during the "Emerging" stage, thus requiring different cost containment and financing strategies than is normally the case for a product in its "Maturing" stage.

Survey participants were asked to identify the life cycle stage for their primary product or service. Table 3 summarizes participant feedback organized by business category.

Table 3 – Life Cycle Stages

Type of Business	Emerging	Growing	Maturing	Declining
Engineering & Environmental Consulting		5	1	2
Manufacturing/Repair/ Construction	2	3		1
IT Systems/Software Development	1	3	1	
Scientific-Technological Research/Analytics	2	1	1	
Graphic Design (Web/Print)	1	3		
Natural Resources/ Conservation	1	1	1	
Total	**7**	**16**	**4**	**3**

This data shows that almost 77% of surveyed companies consider their primary products and services to be in the healthy Emerging and Growing stages of their life cycle. Further information gleaned by several participants indicated the following:

- The identified "Maturing" IT Systems/Software Development Company expects to enter a growth stage again, due to the introduction of a new application. Another company in the same IT Systems business category, and identified in Table 3 as "Growing," indicated it might more appropriately be placed in a chasm between "Emerging" and "Growing."

- Similarly, a "Growing" Manufacturing/Repair/Construction company felt it might be more appropriately positioned between "Emerging" and "Growing," since continued growth is not readily predictable. An "Emerging" company in the same business category indicated it was on the verge of entering the "Growing" stage, but seems to have plateaued.

- A "Growing" Graphic Design company avoided entering a "Declining" stage indicative of its industry by changing its market focus to include short run, low volume business.

Nothing was mentioned in survey responses to suggest that the four "Maturing" companies do not have the ability or resources to return to a "Growing" stage through innovation or reinvention.

Two of the three "Declining" stage companies are owned by people who are entering the later stages of their own careers.

Point of Interest:

Two of the three "Declining" stage companies are owned by people who are entering the later stages of their own careers.

Proprietary Status of Primary Product/Service –

Proprietary products or services involve information that is not public knowledge and is legally viewed as property of the holder. Trade secrets, copyrights and patents, for example, are "intellectual property" protections which normally provide for exclusivity of use or application. A commodity, on the other hand, is any marketable item which is produced or supplied without qualitative differentiation across a market.

- Fourteen (47%) survey participants indicated that some aspect of their primary product/service was believed to hold "proprietary" as compared to "commodity" status. In some cases, proprietary rationale was offered based on patents held. In other cases, however, the basis for considering products or services as proprietary appeared more ambiguous. The rationale for attributing proprietary status related to methods and tools used in the performance of work or to services in dealing with end users.

- The life cycle stage of those companies which were thought to have proprietary primary products or services does not appear to be influenced by their proprietary status. In fact, the life cycle stages are similarly distributed, as demonstrated in the following chart:

	Emerging	Growing	Maturing	Declining	Total
All Surveyed Companies	7 (23%)	16 (53%)	4 (13%)	3 (10%)	**30**
Companies with Proprietary Prod/Services	3 (21%)	8 (57%)	2 (14%)	1 (7%)	**14**

Years in Business and Years in Current Facility –

The amount of time a company has been in business and the amount of time it has remained in the same location can provide insight into its stability, its propensity to grow and the footing it has established in its markets and the community. This information can also provide a community with rationale regarding the adequacy of available commercial property.

Surveyed Laramie technology companies have been in business a mean average of 15 years (median 10 years), and have been operating in their current facilities for a mean average of 12 years (median 6 years), as of the end of 2011. The oldest operating technology company was founded in 1951. The company that has operated the longest in its current facility entered that facility in 1964, approximately 48 years ago. As the company grew, it embraced technology to expand its business.

Point of Interest:

The oldest operating technology company was founded in 1951. The company that has operated the longest in its current facility entered that facility in 1964, approximately 48 years ago. As the company grew, it embraced technology to expand its business.

Table 4 provides a distribution summarizing the length of time surveyed companies have continued to operate in their current facilities by business category.

Table 4 – Time in Current Facility by Business Category

	Years in Current Facilities				
Type of Business	**< 5**	**6 - 10**	**11-15**	**16-20**	**21 & >**
Engineering & Environmental Consulting	3	2		2	1
Manufacturing/Repair/ Construction	3	1	1	1	
IT Systems/Software Development	3	1	1		
Scientific-Technological Research/Analytics	2	1			1
Graphic Design (Web/Print)	2				2
Natural Resources/ Conservation	1	1			1
Total	**14**	**6**	**2**	**3**	**5**

Ownership and Management Changes –

Changes in company ownership and in management can also have an impact on a company's reputation in its industry, as well as stability within the company itself.

- Survey participants were asked if their Laramie Company experienced a change in ownership within the past 5 years. An ownership change did occur in six (20%) of the thirty companies. The impact for each of the six ownership changes was described as positive. One company reported a pending ownership change.

- Similarly, six survey participants reported a management change within their companies during the past 5 years. The management changes corresponded with changes in ownership in three of the six companies. The impact for each of the six management changes was described as positive, as well.

Leadership Planning Processes –

Company leadership's use of planning tools and processes are an indication of how well prepared a company is for dealing with human resource emergencies and with contingencies that could impact the company's competitive, operational, financial and human capital challenges and opportunities.

- Succession Planning: Survey participants were asked whether their company had developed a formal succession plan. Only seven (23%) of the surveyed companies are operating with a formal succession plan in place.

- Strategic Planning: Survey participants were asked whether they were currently operating under a strategic plan. There are eighteen (60%) Laramie technology companies that are being guided by a current strategic plan. Only three of those eighteen companies update their strategic plans annually.

  Also, three of the twelve technology companies that do not have a current strategic plan indicated that they do not plan under a formal process. The following clarifications were offered by these companies:

  > "We don't follow a formal strategic planning process. We tend to do strategic planning when we get feedback from the marketplace suggesting the need for planning."
  >
  > "Although we don't have a formal planning process, we do review our marketing and business plans annually." (Budgeting process)
  >
  > "Our planning doesn't occur at regular intervals."

Point of Interest:

Only seven (23%) of the surveyed Laramie technology companies are operating with a formal succession plan in place. There are eighteen (60%) that are being guided by a current strategic plan.

Technology Dependency –

The types of technology upon which companies are most reliant can have considerable influence on the skills or types of occupations required in the technical workforce. Technology dependency can also impact decisions regarding infrastructure needed in the community and the types of synergistic companies that might be recruited or created within the area.

Regardless of business category, our surveyed companies indicated that the technology upon which they are most dependent is "Information Technology." Twenty-one (70%) of the thirty survey participants selected Information Technology, and many qualified their response with the following applications:

Cloud Applications	Internet	pdf technology
Computing	Net Servers	Printing Languages
Digital Printing	Net Software	Server Technology

Several survey participants identified more than one technology as critical to their business. The second most popular selection was "Electronic Equipment" technology, including instrumentation and circuitry. Four participants named "Electronics" as the technology upon which they were most dependent.

Two survey participants named "Oil & Gas Production Technology," and two participants selected "Green Technology." Other technologies mentioned as being crucial are Hydro-Geology Technology, Survey Equipment Technology, Laser Technology, Lab & Analytical Equipment Technology, Material Science-related Technology, Bio-Technology, and Research-related Technology.

TECHNOLOGY WORKFORCE

At the very heart of this SNAPIT Technology Workforce Survey, and more broadly, the Laramie Technology Workforce Project, are questions that deal with common difficult workforce issues, their causes and perceived solutions. Therefore, we turn attention to these important issues, as expressed by executive managers in our thirty surveyed technology companies.

Difficult Workforce Issues -

Survey participants were asked three interrelated questions dealing with their company's technology workforce issues:

1. What do you consider your company's most difficult workforce challenge?
2. What is the most significant cause of that workforce issue?
3. What do you feel would be the best realistic solution to that workforce challenge?

Appendix A, on page 65, at the end of this report, provides an overview of each executive manager's responses to these questions, organized in business category order. Note that more than one "most difficult workforce challenge" was identified by a number of the respondents.

In summary, survey responses suggest the following:

Recruiting

By far, the most frequent "***Difficult Workforce Challenge***" mentioned by survey participants relates to the ability to find qualified and experienced technical and professional employees. Recruiting qualified, experienced people, is considered the only truly "common workforce challenge" expressed by Laramie's technology sector. This challenge was prevalent across all technology business categories.

Point of Interest:

Several survey participants mentioned recruiting complications or self-imposed restrictions due to the uniqueness of their particular technical products or projects.

Twenty-two (73%) of the thirty surveyed technology companies identified the ability to hire employees with a desired technical or professional skill level, as a major challenge for them. In general, the majority of these employers indicate that the availability of interns and other "entry level" technical candidates is good in the Laramie area. Their recruiting problems appear to develop when they seek candidates who have been exposed to a broad range of work experiences or who have gained knowledge through exposure to the realities of a working within a particular technical discipline. Several survey participants mentioned recruiting complications or self-imposed restrictions due to the uniqueness of their particular technical products or projects.

During the survey interviews, the participants mentioned specific job titles, or disciplines with which they have experienced recruiting problems, including:

Professional positions	CAD Technicians
Engineering talent	Project Engineers and Group Leads
Project Managers	Software Developers and Leaders
Pressmen	Specifically Designed Software
Construction Tradespeople	Mechanical Engineers
Business Professional	Composite Materials
Material Science	Aerodynamics and Aero-Elastics

It should be noted that a problem such as "difficult recruiting" may be a real problem in itself, but often is merely a symptom of a deeper issue that is the true cause of the problem. For example, many survey participants implied that there just was not a sufficient supply of candidates possessing the qualities desired to accommodate the demand of employers in the market. However:

- if employers are only willing to recruit candidates from the local area, that could be the root cause of a recruiting problem, and
- if an employer is not willing or able to meet competitive compensation that too will most likely cause a recruiting problem.

Whenever feasible, we should search for the probable root causes associated with the stated "difficult challenges" in this report. Through this approach, we should be able to identify those factors, behaviors, actions or conditions that directly result in the difficulty.

Survey participant responses regarding the "***Most Significant Cause***" of their recruiting difficulties were quite varied. They represent the participant's perception, based on experience, observation, rationalization and possibly the commonly accepted explanation. In this regard, these perceived causes are also only one-sided viewpoints. In other words, they do not consider the assessments or perceptions of other affected parties, such as the candidates. Nonetheless,

the survey participant's perceptions may provide the best clues available for uncovering root causes.

The following is a representative summary of significant causes identified in Appendix A:

- The demand for technical positions is greater than the supply in this area.
- There is a poor job fit (negative attitude, overqualified, insufficient skills, etc.)
- Most of the good (qualified/experienced) job-holders are already employed elsewhere.
- We have to recruit outside of this area.
- We don't ask the right questions in the interview process.
- There are fewer people going into (the trades, press work, higher skilled technician work).
- I have to pay higher compensation, generating higher employment cost for recruits outside this area.
- We tend to develop our own technical people, but doing so limits our ability to keep ahead of growth requirements.
- Laramie is a hard place to live (weather), and not necessarily attractive to spouses.
- We're a small emerging company, which makes it hard to compete with larger, established companies.
- We intentionally hire the majority of employees from internships or directly out of school, and will only hire outside this market for special skills.
- We don't have software developers or software developer leaders in this area, because the infrastructure doesn't exist yet. So, we have to expand our searches outside this area.
- There are only small markets (pockets of candidates in the country) for the skills we need.
- We prefer to only hire technical people with Master's degrees.
- We hire from the pool of people that apply.

Based upon the workforce challenges defined, and the most significant causes of those identified challenges, survey participants provided insight into the "**Best Realistic Solution to Workforce Challenges**" they described. Here are some of the solutions provided to reduce the impact of their recruiting challenges.

- We either have to hire away from other local companies or recruit from outside the area.
- We need to pool our resources among Laramie companies and bring in training for specific software or applications.
- Try to identify people with work fit/ethic problems in the interview process.
- The solution surfaces when we realize we have too many companies in Laramie competing for the same business and caliber of people.
- We've tried creating tests to make sure people have acquired needed skills.
- Use more contract people from outside the area. Assess their results and offer them employment if they work out. That provides you with an extended probationary period.
- Look for people with good work ethics and then train them.
- Be persistent and just bulldog your way through, until you find the person you need. (Keep looking. Don't settle for less.)

- Pay what you must to get what you need.
- Bring in talent from the outside. Eventually, we'll build the infrastructure that's needed to sustain our technical workforce needs.
- Build a presence in the markets that exist for the positions you need.

Although less prevalent among our surveyed technology companies, other workforce challenges were mentioned frequently enough to warrant further attention. It is likely that any of these other workforce challenges could be a contributing cause that hinders recruiting efforts, and therefore be an extension of that more commonly noted difficulty.

Each of the following bullet points represents individual responses to the question, "What is your most difficult workforce challenge?"

Cultural Compatibility/Job Fit/Managing People

- It's difficult to find people who are willing to do new tasks and take on responsibilities beyond the more traditional scope of the job. In small companies, everyone needs to wear many hats. (The problem occurs when people only perform duties they are accustomed to, or when they don't want to expand their versatility.)
- It is difficult to build long-term employee relationships due to:
    - Work-ethic issues (question of loyalty to the company and disregard for how their behavior or personal decisions affects the company or other people),
    - The competition that exists for experienced people in this area.
- Employee work ethic and expectations – there is a lack of understanding regarding how Capitalism operates. Particularly with regard to the generation coming out of college, people need to understand that they first must produce value for their employer before they can receive benefits from that produced value.
- Hiring employees who turn out to be inflexible with regard to the work they will perform and the hours they will work. As a result, there is a need to periodically purge the workforce during economically advantageous times. This can affect the company's reputation.
- It can be difficult managing people while they are working off-site.

Compensation-Related

- The cost of healthcare for employees – there are not affordable alternatives, particularly for small employers. This affects the ability to compete for good people.
- Being able to attract and retain employees with benefits like Health Insurance, particularly for a start-up company.
- Pay is a major issue. There is easy entry into this business. We can't afford pay structures that are more competitive in higher volume businesses, particularly for businesses located outside of Laramie.

Work Scheduling and Working Conditions

- Due to our non-traditional work schedules, work location and the fact that our jobs are only acceptable to a young, more mobile and adaptable workforce, we have difficulty retaining people.
- Workforce scheduling due to variations in business – It is not feasible to hire additional people on a project basis. Our business levels are not highly predictable.

- I would like to get enough workload to get to at least a full-time level for myself.

Trailing Spouses

- Trailing spouses can be a problem, particularly when that person is looking for employment in this area too.
- Trailing spouses is another difficult challenge in our small community.

The remaining portion of this Technology Workforce section provides overviews pertaining to a number of workforce-related variables. These variables may or may not have a causal influence on the challenges survey participants identified.

Company Leadership Cultures –

Leadership culture can play a major role when a candidate is deciding whether to accept an employment offer.

Particularly in small entrepreneurial companies, it is often difficult to differentiate between the leader's management approach and the company's values and culture. The leader and the company become so closely integrated. By the same token, many articles and books have been written which discuss common behaviors and motivators for entrepreneurs.

When designing the SNAPIT Technology Workforce Survey, an attempt was made to gain insight into the leadership cultures that exist in each of the technology companies surveyed. To some degree, this attempt was driven by an interest in seeing if a "typical management or entrepreneurial" leadership approach might be identified among Laramie technology companies. There was also interest in determining whether there was any correlation between leadership approach and the type of business being led (manufacturing, research, software development, etc.).

Consequently, an instrument was developed to assess specifically four dimensions of leadership culture. For lack of better descriptors, these four dimensions were defined using the adjectives Assertive, Motivating, Thinking, and Supportive. Each of the four dimensions was described using the following terms and phrases:

ASSERTIVE: Concerned with results, High sense of urgency, Decisive, Enjoys challenges, Doesn't get bogged down with details.

MOTIVATING: Innovative, Fun to work with, Excellent communication skills, Personable, Approachable, Flexible with rules.

THINKING: Consistent, Hard-working, Organized, Good planning/research/follow-through, Thorough, Minimal mistakes.

SUPPORTIVE: Likeable/caring, Cooperative, Good listener, Mediator (of conflicts), Recognizes needs of others, Tactful/ diplomatic.

Survey participants were advised that in most cases, every leadership culture contains each of the four dimensions to a greater or lesser extent. Also, the descriptions used to define each dimension were not

all encompassing, nor did all the descriptive terms and phrases have to be present in order for the dimension to be valid. Finally, participants were asked not to place too much emphasis on the connotations associated with the adjectives used to distinguish each of the four dimensions. Instead, they were instructed to read through each dimension quickly to gain a general feel for its meaning.

Next, the survey participants were asked to assign points to each of the four dimensions in a manner that best describes the leadership culture of their technology company. The accumulated points for all four dimensions needed to total 100.

In deciding upon the appropriate ratings for each dimension, several survey participants took considerable time completing this exercise. Most studied the dimensions, rated the dimensions, modified the ratings once or twice within a minute or so.

At the other end of the spectrum there were a few survey participants that either had difficulty with their ratings or were not particularly interested in scrutinizing differences between the dimensions. After several seconds these participants merely applied 25 points to each dimension, stating that they were each equally applicable. The responses of these few participants were omitted from one of the tallies presented in Table 5, below. The intent in doing so was to accentuate the cultural differences associated with each dimension.

Table 5 – Leadership Culture – Laramie Technology Companies

	Assertive	Motivating	Thinking	Supportive
Overall Ratings (All Companies)	**25.6**	**23.0**	**28.8**	**22.6**
Overall Ratings (Equal 25 Ratings Omitted)	**25.8**	**22.6**	**29.6**	**22.0**

The results of these ratings suggest that the leadership cultures in the Laramie technology companies surveyed tend to be most heavily influenced by a task orientation, where hard work, detail orientation, consistency, accuracy and follow-through are valued attributes.

Since we are working with relatively small samples of companies, it was anticipated that there could be considerable variation in leadership cultures when ratings are viewed on a business category basis. Table 6 presents the results of this break-down.

Point of Interest:

There was also interest in determining whether there was any correlation between leadership approach and the type of business being led.

Table 6 – Leadership Culture – Business Categories

	Assertive	Motivating	Thinking	Supportive
Overall Ratings (Equal 25 Ratings Omitted)	**25.8**	**22.6**	**29.6**	**22.0**
Engineering & Environmental Consulting	25.0	20.0	30.8	24.2
Manufacturing/Repair/ Construction	38.8	26.2	20.0	15.0
IT Systems/Software Development	23.0	23.0	34.0	20.0
Scientific-Technological Research/Analytics	22.5	27.5	35.0	15.0
Graphic Design (Web/Print)	21.6	18.4	27.0	33.0
Natural Resources/ Conservation	20.0	20.0	35.0	25.0

There was a surprising consistency in the relative rankings between dimensions for most business categories. With the exception of the Manufacturing/Repair/Construction, and the Graphic Design groupings, leadership culture was assessed to be primarily driven by the "Thinking" dimension.

As might be expected for companies in the Manufacturing/Repair/Construction business category, the primary drivers for leadership culture include focus on results (meeting schedules), a sense of urgency, and consistency in operations, consistent with the "Assertive" dimension.

Rating results for the Graphic Design business category was highly influenced by one company that recorded an exceedingly high rating for the "Supportive" dimension and extremely low ratings for both the "Assertive" and "Motivating" dimensions. Were it not for these outlier ratings, the Graphic Design group would resemble the profile produced by the Manufacturing/Repair/Construction business category.

Historical Workforce Records Kept-

The importance of keeping historical records is synonymous with the importance of documenting personnel-related actions. In human resources, maintaining certain records may be legally required. In other cases, historical records may be helpful in supporting positions and decisions.

Survey participants were asked whether they kept historical records related to their workforce employment covering the past three-year period. Table 7 presents a distribution of responses. It should be noted that in several instances, the survey participant suggested that the company did not keep their records in hard copy format; however, at least one employee in the company would be able to create the record from memory.

Table 7 –Historical Records Kept by Surveyed Technology Companies

Type of Record	Companies Retaining This Information
Employment by EEO Category (Officials & Managers, Professionals, Operatives, etc.)	20 - 67%
Exit Interviews	9 - 30%
Performance Reviews	16 - 53%
Recruiting Costs	13 - 43%
Terminations – Reasons for Leaving	21 - 70%
Time to Fill Employment Openings	8 - 27%
Total Employment	24 - 80%
Turnover Rate	16 - 53%

It is recognized that not all companies conduct Exit Interviews or Performance Reviews. This is not unusual particularly with smaller organizations. Likewise, many companies, both large and small, do not feel it is necessarily beneficial to keep track of the time it takes to fill openings. Other than keeping records for Total Employment and regarding Terminations, it would appear that many Laramie technology employers do not feel there is much value in retaining historical records related to workforce activity.

Company Employment -

During the one year period beginning October 2010 to October 2011, total full-time employment among the thirty surveyed technology companies increased approximately 2.4% from 458 to 469 employees. As of the end of October 2011, total employment, including 109 part-time and temporary employees, approximated 578 employees.

Point of Interest:

As of October 31, 2010, there were 138 full-time employees in the twenty-two target technology companies that did not participate in the SNAPIT Technology Workforce Survey. Although October 2011 employment was not obtained for these twenty-two companies, if we assume their full-time employment grew at the same 2.4% rate as the surveyed technology companies, that would mean their October 2011 full-time employment would be approximately 141, compared to 469 for the thirty surveyed technology companies.

For contrast purposes, the following, provides information pertaining to the mean, median and range of both total employment (including full and part-time) and only full-time employment for our thirty technology companies, as of the end of October 2011:

	All Companies	Mean Company Employment	Median Company Employment	Range of Company Employment
Full-time Employees	469	15.6	6	1 - 150
Full & Part-time Employees	578	19.3	12	1 - 168

Table 8 is a distribution of the number of full-time employees for each of the thirty surveyed companies as of October 2011.

Table 8 - Distribution of Total Full-Time Employment for Surveyed Technology Companies

# Employees	# Companies	% of Total	Cumulative % of Total
1	4	13.3%	13.3%
2 to 5	9	30.0%	43.3%
6 to 10	3	10.0%	53.3%
11 to 15	5	16.7%	70.0%
16 to 20	6	20.0%	90.0%
21 to 25	1	3.3%	93.3%
26 to 30	0	0.0%	93.3%
31 & More	2	6.7%	100.0%

As noted from the above distribution, 90% of our surveyed technology companies employ 20 or less full-time employees. The actual mean number of full-time employees in this 90% of companies is 8.5 people.

Total full-time employees in the surveyed companies are organized by business category in Table 9.

Table 9 – Full-Time Employment for Surveyed Technology Companies by Business Category

Type of Business	Full-Time Employees	% of Total
Engineering & Environmental Consulting	218	46.5%
Manufacturing/Repair/ Construction	37	7.9%
IT Systems/Software Development	83	17.7%
Scientific-Technological Research/Analytics	90	19.2%
Graphic Design (Web/Print)	24	5.1%
Natural Resources/ Conservation	17	3.6%
Total	**469**	**100.0%**

Point of Interest:

Ninety percent of our surveyed technology companies employ 20 or less full-time employees. The actual mean number of full-time employees in this 90% of companies is 8.5 people.

Employment Trends –

Employment trends enable managers to extrapolate known historical employment levels or needs over future periods of time, under various assumptions.

Employment was reported to have trended downward over the past 2 years in approximately one out of four of the surveyed technology companies. Employment was reported to have remained fairly level in about 40% of the companies.

Expectation for an upward trend in employment over the next 2 years was reported for twenty-two (73%) out of the thirty surveyed companies. A downward employment trend was reported by only one of the survey participants. In terms of projected hires, this translates to a net 88 additional full and part-time employees of surveyed companies being hired over the next two years. This is about a 15% increase from current employment levels. Although these projections are encouraging, a number of the survey participants suggested they would likely be cautious in bringing on full-time employees. Where feasible, these technology companies would consider hiring part-time and intern positions first, in order to assess the new hires for possible full-time employment.

Point of Interest:

In terms of projected hires, this translates to a net 88 additional employees being hired over the next two years.

Anticipated and Open Positions (at Time of Survey)-

Being able to identify "best guess estimates" regarding types of skills and talent that will be needed in the foreseeable future helps employers plan recruiting strategies. These "best guesses" can also help educational and training institutions prepare curricula, course schedules, staff and facility requirements for the years ahead.

Point of Interest:

These "best guesses" can also help educational and training institutions prepare curricula, course schedules, staff and facility requirements for the years ahead.

Several weeks prior to beginning our individual technology company surveys, SNAPIT Representatives conducted introductory interviews with managers of targeted companies. Several of those company managers declined to participate in the SNAPIT Technology Workforce Survey, but did provide information related to their employment experiences, regardless.

During the introductory interviews, targeted technology companies were asked to describe the types of technical positions they expected to recruit within the next 2 years. This question was asked in order to gain a feel for the types of positions Laramie area technology companies regularly employ on an ongoing basis. The following is a listing of those companies' 146 anticipated openings:

Engineers (51 Positions)
- 42 Generic Engineers
- 3 Civil Engineers
- 3 Mechanical Engineers
- 2 Staff Engineers
- 1 Electrical Engineer

Technicians (11 Positions)
- 5 Generic Technicians (computer)
- 2 Research Technicians
- 2 Lab Technicians
- 1 Field Technician
- 1 Sr. Design Drafter

Scientific/Tech Specialty (4 Positions)
- 1 Geologist
- 1 Surveyor
- 1 GIS Specialist
- 1 Physicist

Sales/Marketing/ Customer Support (32 Positions)
- 4 Professional Sales
- 26 Retail Sales
- 2 Marketing

Professional (2 Positions)
- 1 Operations Manager
- 1 Accounting Manager

Software/Systems People (17 Positions)
- 8 Software Developers
- 1 Sr. Software Developer
- 5 Software Engineers
- 3 Programmers

Project/Product Managers (8 Positions)
- 2 Project Managers
- 2 Lead Research Managers
- 2 Product Managers
- 1 Engineering Project Manager
- 1 IT Project Manager

Graphic Design, Press & Web (5 Positions)
- 1 Web Developer
- 1 Graphic Designer
- 1 Writer
- 2 Press or Pre-Press

Administrative (6 Positions)
- 3 Administration
- 1 Office Manager
- 1 Office Assistant
- 1 Bookkeeper

Plant Operations (10 Positions)
- 3 Plant Supervision
- 5 Plant Operations
- 2 Laborers/Carpenters

In addition, survey participants were asked to identify the technical positions for which they were currently recruiting. Two-thirds of the surveyed companies did not have any openings at the time they were being surveyed. One of the survey participants, however, indicated his company had just hired two Lead Researchers, who are responsible for Product Management responsibilities. Another company representative indicated that although he currently did not have openings, his manufacturing company

planned on hiring 4 additional professional employees with industry technology background within the next 2 years. A third company representative stated that he most likely would be hiring independent contractors for interim projects in the future.

With regard to the ten companies that identified their current technical openings, results are as follows:

Business Category	**Open Positions**
Engineering & Environmental Consulting	GIS Specialist Surveyor Project Manager Field Techs (multiple) (20) Engineers, Geologists & Project Managers
IT Systems/Software Development	(2) Computer Techs (3) Software Engineers Application Support Person (EMR) Sales (Medical Related)
Scientific-Technological Research/Analytics	Sr. Software Engineer Mechanical Engineer Marketing Person
Graphic Design (Web/Print)	(2) Graphic Design Interns Pressman

The general trend in unfilled openings was described as being "stable to increasing." Twenty-five (83%) of the surveyed companies indicated their number of unfilled openings was stable, even if they were not currently recruiting. The remaining 17% of companies said their number of unfilled openings was increasing.

Availability-Quality-Stability Ratings-

Employers typically assess workforce availability, quality, and stability as major criteria when determining whether a local workforce is able to satisfy their current and projected employment needs.

Despite the fact that a significant number of technology companies experience difficulty recruiting experienced, quality technical employment candidates, most of our surveyed participants rated the local technical workforce as "average" to "above average" with regard to employee Availability, Quality and Stability. Survey participants were asked to rate these factors on a five-point scale, with (1) being a high rating and (5) being a low rating. The average rating scores are as follows:

Availability	3.0
Quality	2.6
Stability	2.3

A number of qualifying statements were made for these ratings, such as:

- "We've had good luck with UW grads."
- My (respective) 3-2-1 rating for these criteria "refers primarily to professional and technical Civil Engineers."

- "Our location is detrimental to employee stability."
- "Good entry level college educated people are available, are good quality and stable people."
- "Laramie does not have a robust experienced workforce from which to draw."
- "I rated Stability low due to the risk of losing lesser experienced employees (because of economic reasons)."

Ratings were fairly consistent between the surveyed company business categories, with "Natural Resources/Conservation" executive managers giving the best scores and the "Scientific-Technological Research/Analytics" survey participants rating the criteria most severely.

Essential Employees (Phase of Career) –

In every organization, regardless of size, there is always a core group of employees that are "essential" to an effective, smooth running, productive and profitable operation. These are people employers want to keep as long as practical.

Survey participants were asked to identify the career phase in which they consider the majority of their essential employees. Responses indicate that 60% of essential employees fall within the early (young) phase of their careers; 30% are in the mid-phase of their careers and the remaining 10% of essential employees are considered "near retirement." The three companies that indicate their essential employees are near retirement are associated with different business categories in Laramie, requiring different skill sets.

Overall, this suggests a fairly healthy distribution of career progressions, particularly for companies entering a business growth phase. On the one hand, the majority of companies may be less concerned about planned replacements due to essential employee retirements. On the other hand, the fact that such a high percentage of essential employees are considered in the early phase of their career could create negative perceptions of advancement opportunities.

Commuting Requirements (Existing Technical Workforce) –

Particularly in a slow economy, which impacts the employee's ability to relocate, commuting distance can play an important role when a candidate is deciding whether to accept an employment offer. Commuting distance also becomes an important consideration for employers who feel they must extend their recruiting beyond the local labor market. In addition to time inconveniences, it can mean additional relocation expenditures.

A relatively low percentage of Laramie employees currently commute substantial distances to work. According to estimates provided by survey participants, 89.4% of employees in our surveyed technology companies live in the city in which they work and another 6.4% live outside the city but within the county. This leaves 4.2% of employees (estimated at less than 25 people), who live in an adjacent county or beyond.

There were two survey participants who indicated they were personally aware of an employee in each of their companies, who commuted to and from Fort Collins, Colorado.

Point of Interest:

Two survey participants were aware of an employee in each of their companies, who commuted to and from Fort Collins, Colorado.

Recruiting Technical Candidates –

Effective recruiting requires an understanding of what you want and what you can expect from your recruiting sources. Some sources are relatively inexpensive to use, but may either give you too few good referrals, or too many candidates the majority of whom do not match your specifications. Other sources may be relatively costly with no appreciable improvement in the quality or quantity of referrals. In addition to expense associated with using the recruiting source, employers also need to consider the time a source requires of them to sift and winnow through candidate referrals.

Executive managers for our thirty surveyed technology companies were asked several questions regarding the types of their recruiting sources, geographic areas covered, and preferences for the various recruiting sources. Table 10 identifies the recruiting sources found to be most effective by these surveyed participants and the extent to which the source is used by our technology companies.

Table 10 – Recruiting Sources for Surveyed Technology Companies

Recruiting Source	% of Companies Using this Source
Internet Job Posting (including Company site)	63%
College Recruiting (including Career Fairs)	57%
Newspaper Ads	50%
Employee Referrals	47%
Networking (University, Friends and Associates)	30%
Walk-ins	30%
Workforce Services	30%
Alumni Associations/Professional Organizations	10%
Employment Agencies	10%
Trade Journals/Magazine Ads	10%
Social Media (LinkedIn)	7%

Internet Job Posting: The internet was selected as the most popular source for acquiring inquiries and candidates for employment opportunities. Monster.com and Craigslist were identified as two of the most popular recruiting sites. The Wyoming Workforce Service Center's WyomingatWork.com site was also identified as a frequently used site. Several companies identified their own company website as a source for posting job opportunities and receiving inquiries from interested candidates.

College Recruiting: With the University of Wyoming in everyone's back yard, college recruiting is quite popular. In addition to career and job fairs, as well as internship opportunities, approximately half of the technology companies that identified "Networking" as a recruiting source specifically mentioned the University of Wyoming or its staff. Within UW, references were made to the Architectural Engineering Department, the School of Engineering, School of Business, and the School of Agriculture.

Other colleges and universities identified as recruiting sources were the University of Colorado, Colorado State, the University of Utah, Texas A&M, Montana State and South Dakota University.

Newspaper Ads: As one might expect, Laramie's Boomerang is the most popular newspaper used for help wanted advertising among our surveyed technology companies. Fifteen companies (50%) identified the Boomerang as a viable source. About 20% of the surveyed companies use the Casper Star Tribune and the Denver Post. Other papers that were specifically mentioned were Cheyenne's Wyoming Tribune Eagle, the Gillette Gazette, the Grand Junction Sentinel and the Salt Lake City newspaper.

Employee Referrals: Almost half of our surveyed technology companies actively seek employee input and referrals to help them fill their technical openings. Several employers mentioned employee referrals as the best and most credible sources of talent.

Networking: Because Networking wasn't specifically listed as a recruiting source option on our SNAPIT Technology Workforce Survey, the percentage of companies identifying networking as a recruiting source is most likely understated. Survey participants had to identify "networking" as a source under the "Other" option in our survey. During our survey interviews, there were many references to contacts and assistance received from professors, staff and prior associates who are connected with the university.

Walk-ins: It was a bit surprising to see that walk-ins still represent an active recruiting source for about one out of three of our technology companies. This may be a symptom of either a slower than normal economy or a relatively small community, where private industry is relatively easy to access.

Workforce Services: Certainly a highly reputed recruiting tool among surveyed technology companies is the Wyoming Workforce Service Center's WyomingatWork.com website. About 30% of our survey participants actively use a variety of the Workforce Service Center's services. There were two survey participants who indicated that they used the Center in the past, but never seemed to get the quality of candidates they sought. Consequently, they stopped using this recruiting service.

Alumni Associations, Professional Organizations, Employment Agencies and Social Media do not currently appear to constitute major recruiting sources for our surveyed employers. It appears that within the past several years, internet job posting sites have had a negative impact on fee-based Employment Agency business, except possibly as a source for temp-to-hire employees. The vast majority of our surveyed companies does not use social media, and does not have active company social media accounts. Notwithstanding, two survey participants indicate that they use LinkedIn as a recruiting source. One of the two identified LinkedIn as the best recruiting source he has for identifying quality professional and technical candidates.

The most frequently identified recruiting sources for the "best quality applicants" for our surveyed technology companies were:

Best Recruiting Source	% of Companies
Networking	27%
Workforce Service (WyomingatWork.com)	13%
Employee Referrals	13%

It's interesting to note that with each of these sources, the likelihood is that the recruiting manager will end up with local candidate referrals.

Point of Interest:
The majority of our surveyed companies do recruit outside the immediate area.

Although there appears to be a natural preference among employers for securing high quality, experienced technical and professional employees from the local recruiting area, the majority of our surveyed companies indicate they do recruit outside the immediate area. Twenty-one (70%) of these companies indicate they recruit technical or professional employees outside the local market to some extent. One company prefers to only recruit sales people from outside the Laramie area in order to accommodate larger customer markets.

Approximately one in four surveyed companies recruit employees on a national scale. Another 25% of our surveyed technology companies concentrate "outside" advertising in other Wyoming cities like Cheyenne, Casper and Gillette, and in the Colorado corridor to and including Denver. The remaining 20% of surveyed technology companies that recruit outside the immediate area concentrate on the states surrounding Wyoming or targeted cities, such as Detroit, Michigan; or College Station, Texas; where specific markets for talent exist.

Relocation Assistance –

As implied in the section of this report that focused on commuting, there is a direct relationship between recruiting distance and relocation issues that can be costly for the employer.

Only one survey participant indicated that a "formal relocation policy" existed covering his company, and that was a "corporate" policy, which the participant had not had occasion to use yet. He was uncertain regarding the provisions of the policy.

Of the twenty-one surveyed companies that indicated they recruit outside the immediate area, twelve responded that any relocation assistance would be based on the candidate's offered position and the particular situation or need. Although no formal policy exists, one company responded that it would help cover a physical move. The survey participant for another company stated that advanced pay would be permitted, as would help in finding or sharing lodging. Six technology companies indicated that relocation assistance was either not necessary, never requested or not yet an issue.

Two of the companies that typically do not recruit outside of the immediate area, suggested that if they would in the future, some type of relocation would be negotiated as part of the employment offer. Negotiations would consider the position being offered, and the significance of the need expressed by the candidate.

Employment Processes -

The process established for reaching a hiring decision varies considerably among the technology companies surveyed and also within some of the companies, based on the nature of the open position. There is generally a strong consciousness for cost associated with the hiring processes of surveyed companies. Although the people involved with recruiting tend to search for the best candidates available, there is, in many cases, a tendency to look primarily within the local market for candidates, due to time, additional scrutiny, and expenses associated with casting a larger net.

Table 11 provides an overview of steps involved in the employment processes of our thirty surveyed technology companies. It's evident from Table 11 results that these companies do not all follow the same process steps. The number and sequence of steps followed may vary between employers and frequently within the same employer, based on the nature of the job being recruited.

For purposes of this report, employment processes begin after candidates have been qualified for an initial face-to-face interview. In most cases, preliminary employment process steps consist of activities such as, advertising/soliciting for the open position, resume review, and possibly phone interviews.

Table 11 – Steps in Employment Processes of Surveyed Technology Companies

Process Step	% of Companies Regularly Using this Process Step
• Recruiter/Hiring Manager Interviews	87%
• Job Description/Expectations Reviewed	70%
• Hiring Manager's Supervisor or Another Manager Interviews	67%
• Candidate is Tested	37%
• Reference Checks Conducted	80%
• Credit Checks are Processed	13%
• Academic Credentials are Verified	23%
• Tour of Operations	53%
• Tour of Community (if unfamiliar with Laramie)	30%

Interviews: Face-to-Face interviews are conducted in all but two technology companies. The number of interviewers normally increases with the organizational level of the open position. Normally, these initial interviews may be conducted by the Hiring Manager, the HR Manager, the Hiring Manager's Supervisor, or another Manager or group of Managers. Sometimes the candidate is brought back to the company for a second interview with one or more managers.

Group interviews (Hiring Committee/Recruiting Team) are conducted in several Laramie technology companies. In some of those group interviews, members from the Wyoming Technology Business Center or UW staff are invited to participate. In one company, managerial/professional candidates are interviewed by a variety of the recruiting company's employees. In another company, candidates for Lead Technical positions are asked to give 2 hour seminars to company personnel, with outside advisors also present.

As a general rule, the face-to-face interview is the first step of several in the employment process. That's not always the case, however. In one company, hiring decisions for seasonal

employees may be made solely on the basis of referrals. In another case, the hiring process consists of the President's interview. If the President feels there is a fit, an offer is tendered immediately.

Our surveys helped to identify the extent to which interviews were used in the employment process and the range of people involved in interviewing. These surveys, however, did not delve into assessments of interviewing outcomes – whether interviewing satisfactorily provided desired insights into the candidate's technical requirements, core competencies, and motivational fit with the hiring company's culture and employment opportunity.

Based on discussions conducted during the survey process with our thirty technology companies, there appears to be a wide variance in the effectiveness associated with employment interviews. Some companies take very special effort to secure many insights and impressions regarding important considerations. Other companies may fail to properly conduct or plan for the interview. As one survey participant disclosed, "We don't ask the right questions. Our interview process needs improvement. We end up hiring people based on our feelings. We don't get to know what the candidate's skills and abilities are."

Point of Interest:
"We don't ask the right questions."

Job Description/Job Expectations: A review of job responsibilities and performance expectations is conducted with candidates during the employment process in twenty-one (70%) of the companies surveyed. In most cases this review is conducted during the employment interview(s).

Reference Checks: Reference checks are a fairly common step in our surveyed company employment processes. Four out of five companies check references. A number of companies only check references regarding candidates applying for "higher level" positions or for full-time positions in the company. In one company, references and criminal records are checked by employees at the corporate office location. Also, in one company, a "publication review" is made in addition to reference checks, as applicable.

One company manager indicated that his company sometimes conducts reference checks before the interview phase of the employment process.

- ✓ *Doing so precludes asking probing questions intended to verify information and impressions received during the interview.*

Academic Credential Verification & Credit Checks: Relatively few companies verify academic credentials despite the fact that academic information presents a relatively high probability of misrepresentation on resumes. The surveyed companies that do verify academic credentials generally have access to an HR function. The same holds true for credit checks, which are conducted by only 13% of our thirty technology companies.

Testing: Approximately one-third of the surveyed technology companies conduct employment testing. Those that do, primarily test for skill or aptitude. These tests may be either administered

through the Laramie Workforce Center, published instruments or custom made tests created by the surveyed company. In some cases, candidates are tested by being asked to actually perform the job. One company tends to hire employees on a contract basis prior to offering regular full-time employment. This "extended probationary period" enables the employer to assess the contractor's knowledge, skills, abilities and attitudes before the worker is actually placed on the payroll.

- ✓ *Before hiring contractors, employers should make sure they are in compliance with government regulations pertaining to independent contractors.*

Those companies that conduct skill and aptitude tests normally look for test designs that reflect essential requirements of the job, or that possess "face validity." In these companies, testing may or may not be administered to all qualified candidates for the open position.

- ✓ *If tests are given for a particular opening, it is advisable that the same tests be administered to all candidates who meet certain qualifying job criteria. Doing so reduces the probability of bias claims.*

One company administers a personality test in its employment process. The survey participant for that company indicates that the test helps determine job fit. The test is administered before the interview phase of the employment process, and may be used to screen out candidates from the remaining employment process.

- ✓ *It is advisable that tests be administered near the end of the employment process – after interviews – rather than early in the process. Doing so tends to 1.) reduce the cost and number of candidates that must take the test, 2.) permit recruiters to key in specifically on test items that reinforce or refute impressions formed in the interview, and 3.) reduce the probability of bias claims.*

One survey participant indicated that the company uses drug testing as part of the employment process. (Pre-employment drug testing is normally conducted between the time a conditional employment offer is made and the candidate's first day of employment.

- ✓ *Unlike pre-employment physical exams, an employment offer can be made conditional based on successfully passing a drug and/or alcohol screening.*

Tour of Operations: Approximately half of the surveyed technology companies give the employment candidate a tour of local company operations, particularly if the candidate appears promising.

Tour of Community: As Table 11 in this section indicates, 30% of the surveyed technology companies might accommodate a candidate who is unfamiliar with the area (and possibly a significant other) with a tour of the community. One survey participant indicated that sometimes the company provides the candidate a Chamber of Commerce Packet, instead of a tour. Another representative stated that he tries to schedule a walking tour with the Tourism Board, and will acquaint the prospective employee with cultural activities associated with the University of Wyoming.

Survey participants were asked, "Once you find an acceptable candidate, what actions, if any, are taken to make sure the candidate (and/or significant other) will adapt to the community and area?" Twenty-two, or almost 75% of the survey participants indicated that their companies do not do anything, primarily because they tend to hire locally, or the issue never comes up.

Of the technology companies that attempt to accommodate assimilation of the candidate and/or significant other to Laramie, the following comments apply:

> "For transfers and other key candidates currently living outside of Laramie, we'll bring them in for a weekend at company expense to explore their areas of interest."
>
> "We tour the community and point out what Laramie has to offer."
>
> "During the interview, we try to find out the candidate's interests. We refer them to the Rec Center, other local organizations, the Chamber and realtors."
>
> "We ask many questions to detect the candidate's interests. Then we try to connect the person with contacts or organizations in our area."
>
> "We have tended not to bring in significant others during the interview process, but will bring them in to tour the community during the offer negotiation period."
>
> "We tour the city with them, try to schedule a walking tour with them, and introduce them to cultural activities."
>
> "We arrange for a group dinner. We also help find other employment for the spouse, if needed."
>
> "There is networking established with people in the company, at the University and community that have similar interests. The candidate and significant other are taken to dinner, etc."

Advantages or Benefits of Being Employed at Technology Companies -

Employers typically use some portion of an employment interview selling their company to the employment candidate. This phase of the interview process normally focuses on advantages or benefits associated with employment at the company.

In order to gain additional insight into our technology sector's appeal, survey participants were asked to identify what they think their employees consider the biggest advantage or benefit associated with their employment.

The following summarizes common themes that were gleaned from the responses received:

Advantages/Benefits -- Common Themes

- Accommodating, relaxed, friendly and fun work environment (*i.e., flexible work rules, schedules and/or hours, no micro-management, good treatment, family-like, team orientation, unstructured, low stress, casual, reflecting a desire for long-term relationships, social activities*).

- Opportunity to work on absorbing and technically challenging projects and assignments (*i.e., working with cutting-edge technology*).

- Receiving recognition and intrinsic satisfaction for hard work and contributions (*i.e., stake in the company, subsidized healthcare, respect for good work, being compensated well, working on successful designs, feeling a sense of achievement, creating solutions*).

- Growth and advancement potential (*i.e., being on the ground floor of something big, opportunity to learn every aspect of the business, chance to pursue your passion, global assignments*).

All survey participants who responded to questions about the advantages of working for their company, referred to at least one of the themes identified above. The "work environment" and "challenging projects" were the two most frequently referenced themes. According to the survey participants, work environment is generally perceived to be attractive to technical people if it does not overly restrict their performance and behavior, but provides freedom to be creative and productive. Similarly, work assignments are perceived to be attractive when they are stimulated by technical challenge and high-tech applications.

Employment Offer Refusals for Reasons other than Compensation -

Survey participants were asked whether they ever had a technical employment candidate refuse an employment offer for reasons other than compensation. Thirteen (43%) of the survey participants answered affirmatively, and identified specific candidate refusal incidences. Seventeen (57%) survey participants responded that they were not aware of any situation involving an offer refusal for reasons other than compensation.

Of the respondents who answered affirmatively, the following reasons were given for candidate refusals:

Benefits

- Health insurance cost-sharing was too high (Employee pays a portion of Single coverage premium and 100% of Family coverage premium.

- Health insurance. Employees pay 50% of premium cost, regardless of Single or Dependent coverage. Person got a better offer elsewhere.

- Not able to meet candidate's needs – wanted a company car.

Drug Testing

- Candidate did not want to take drug test. Also, said he had family issues to attend to.

Education

- An Intern decided to go to Graduate School instead of working.

Location

- Candidate wanted to stay closer to family (out of state).

- Candidate was also looking in Denver, and his girlfriend found a job there.

- Candidate said he had family medical issues and that Laramie was too far away.
- Laramie was too far from family. (Ultimately hired the candidate anyway – working from home).
- Laramie was not attractive to the candidate, his spouse, or both.
- Area was incompatible with interests.
- Candidate's girlfriend wanted him to come to Laramie, but another company made a better offer.

Poor Fit

- Candidate decided he wasn't able to appreciate a balance between commercial and environmental conservation interests and concerns.

Work Conditions

- Candidate didn't want to work with pesticides.

Work Schedules

- Conflict with school.
- Employees were working 80 hours/week at the time (Seasonal). Candidate couldn't make that commitment.
- Too much variation.

Employee Performance Appraisal, Communication and Feedback -

According to conventional human relations wisdom, the best way to build strong bonds between managers and employees is to create trust, to communicate frankly, to treat people fairly, to show appreciation, and to amend behavior when shortfalls occur with the previously stated efforts. In business, performance appraisals, "state of the business" meetings, and exit interviews are a few of the commonly used communications tools intended to promote strong employee-employer bonds. Particularly with regard to small organizations, these communication tools do not require a formal approach; however, they normally should be properly planned and prudently implemented for effectiveness. Performance appraisals should also be documented.

Each survey participant was asked whether their company's management regularly conducts 1.) performance appraisals, 2.) "state of the business" meetings and 3.) exit interviews at appropriate times with its technical employees.

Of twenty-eight surveyed technology companies with more than a single employee, the following responses were recorded:

Performance Appraisals:

- Twenty companies (71.4%) indicated that company management/supervision conducts performance appraisals. Most are scheduled annually. One company schedules performance appraisals every 6 months. One company schedules these reviews after 90 days of employment, then after 6 months of employment and then annually thereafter.
- One survey participant stated that his company does not have a formal policy on performance appraisals, so performance discussions essentially only occur when an employee is having problems. Another participant indicated that performance reviews are conducted informally.
- One participant stated, "Performance reviews are verbal and not necessarily at regular intervals.
- The management of one company does not believe in the value of performance reviews, because of poor experience with them at a previous employer."

Point of Interest:

There appears to be quite a difference of opinion between surveyed companies as to how these communications tools (performance appraisals, employee meetings, and exit interviews) may be most effectively used. The spectrum of opinion runs from astute and rather sophisticated to avoiding their use altogether.

State of the Business Meetings:

- Twenty-two companies (78.6%) indicated that company management conducts "state of the business" meetings. In one company formal employee meetings are conducted quarterly.
- One survey participant stated, "We could really improve on the way we give state of the business meetings, because we depend too much on communicating them through email."
- One participant whose company does not conduct state of the business meetings said, "Our owners have mixed opinions on how much information to give employees about the company."
- One company conducts weekly employee meetings. Sometimes the subject is training, sometimes it is the state of the business or the business outlook, or some other issue that employees want to talk about. The meetings are two-directional, so employees have the opportunity to ask questions.
- One survey participant indicated that company ownership may conduct one-on-ones or small group meetings at various times regarding business conditions. At another company, business conditions are regularly discussed in the owner's weekly staff meetings. These meetings are attended by only a fraction of the company's employment.
- One survey participant indicated management generally attempts to keep the workforce advised when a project they are working on was based on a particularly tight quote.
- One survey participant stated, "Our state of the business meetings are inconsistently scheduled – maybe one time per year." Another participant said, "Our state of the business meetings are not conducted on a formal basis."
- One company conducts state of the business meetings and also has an Employee Advisory Committee, which is used as a Policy sounding board.

Exit Interviews:

- Thirteen companies (46.4%) indicated that their company conducts "exit interview," as feasible. Most companies that conduct exit interviews do so when the employee voluntarily terminates employment. One surveyed company conducts exit interviews for both voluntary and involuntary terminations. A survey participant in another company said his company tries to exit interview, but is not able to do so all the time.
- One survey participant stated that the exit interview process is not formal, but the company attempts to secure information related to an employee's departure through any number of ways.
- One survey participant indicated the departing employee is given an exit Interview form to complete and return before leaving the company. The employee can talk to someone in HR if they wish.
- One survey participant indicated company management conducts exit interviews sometimes, and said, "Most of the time we already know the reason for the employee's leaving."

Similar to statements made about employment interviewing in the *Employment Processes* section of this report, there appears to be quite a difference of opinion between surveyed companies as to how these communication tools (performance appraisals, employee meetings, and exit interviews) may be most effectively used. The spectrum of opinion runs from astute and rather sophisticated to avoiding their use altogether.

Educational Credentials and Training –

According to an October 24, 2011 Wall Street Journal article by Peter Cappelli, titled "*Why Companies Aren't Getting the Employees they Need,*" employers tend to seek people with experience, because they don't want to train people." With smaller companies, it often comes down to the employer not having the necessary time and resources to dedicate to training.

In addition, in the U.S. economic community the social contract between companies and employees no longer reflects expectations of company loyalty for life-time employment. Consequently, company apprenticeships, management training programs and even on-the-job (OJT) training, other than the basic essentials, are almost non-existent today. Employers have become disenchanted with training employees, then having another employer turn around and hire them away for more money. Instead, employers place more emphasis on having their employees acquire essential knowledge through educational institutions and acquire training and experience elsewhere.

Because greater emphasis has been placed on experience today, internships are viewed, in many cases, as a mutually beneficial way to employ "conceptually knowledgeable" talent at a reasonable cost...and Laramie enjoys a comparatively large pool of available interns. In return, interns accumulate experience, which eventually can equip them for greater opportunities, many times elsewhere.

Small employers, particularly in a university city like Laramie have another problem when it comes to hiring technical employees. There may be a tendency to establish higher educational, and experience specifications for openings than are justified by the actual job content. This obviously can lead to turnover when job challenges fail to meet expectations or commitments. For any number of reasons, assignments an employer would like someone to be able to perform do not match up with assignments that really need to be performed.

Survey participants were asked the following three inter-related questions dealing with ordinarily required educational credentials, on-the-job training, and external training resources:

- What educational credentials (or equivalent) do you ordinarily require your technical employees to attain?
- What, if any, technical training or development do you ordinarily need to provide technical employees on an "on-the-job" basis?
- Considering the training resources available in our community or region, what technical training courses or programs would be most beneficial for employees at your company?

Appendix B, on page 75, of this report provides an overview of each company representative's responses to these questions, organized in business category order.

In summary, the responses suggest the following:

Engineering & Environmental Consulting

- Ordinarily required education consists primarily of a BS in Civil, Environmental, Chemical Engineering, Geology, or other technical disciplines. (Masters Level may be preferred).
- On-the-Job training may include CAD training and Safety & Health training. OJT is ordinarily dictated by assignments and the employee's past experience.
- Beneficial training from external resources would include Project Management, Business Processes, Mapping (ARC view), Auto CAD, Business Analysis and Problems Solving, Budgeting and Accounting.

Manufacturing/Repair/Construction

- For Engineering positions, ordinarily required education includes a BS in Mechanical, Chemical or Software Engineering. (Masters Level may be preferred). For other technical positions, some college is preferred, but is not necessarily required.
- On-the-job training typically includes Safety & Health. Otherwise, OJT is ordinarily dictated by assignments and the employee's past experience.
- Beneficial training from external resources would include Leadership, Construction Technology courses, Six Sigma, Forestry courses and soft skills relating to Team Building.

Point of Interest:

What technical training courses or programs would be most beneficial for employees at your company?

IT Systems /Software Development

- Ordinarily required education consists primarily of a BS in Computer Science or Engineering, Systems Administration, Chemical Engineering or Chemistry. (Masters Level may be preferred). Certificates in fields of specialties (i.e., Microsoft, Cisco, CompT) are beneficial.
- On-the-job training consists of hands-on training and working with specialty software.
- Beneficial training from external resources would include Excel, Advanced Data Management, Access, and Leadership.

Scientific-Technological Research/Analytics

- Ordinarily required education consists primarily of a BS in Mechanical or Software Engineering, Materials Science and Bio-Science. (Ph.D. may be required for Lead Researchers.)
- On-the-job training is ordinarily dictated by assignments and the employee's past experience.
- Beneficial training from external resources would include Non-Destructive Testing and Evaluation, theoretical Sr. Design courses, Product Commercialization and Government Contracting.

Graphic Design (Web/Print)

- Ordinarily required education consists of some college or computer proficiency, with possibly exposure to Photo Shop. Graphic Arts degrees are not necessarily sought.
- On-the-job training includes Photoshop, Adobe, Illustrator, pre-press work and training ordinarily dictated by assignments and the employee's past experience.
- Beneficial training from external resources would include extended courses in Adobe and Microsoft, Problem Analysis and Solving. There was a suggestion to set up courses that help local business research issues and then implement decisions based on research findings (i.e., EDI).

Natural Resources/Conservation

- Ordinarily required education consists of preferably MS degree in Biology, or Wild Life Management or related fields.
- On-the-job training includes statistical or GIS software or related software. Also, may train in government regulations or legislation.
- Beneficial training from external resources includes Endangered Species courses. Otherwise, School of Environment and Natural Resources prepares students well for careers in this field.

Educational or Tuition Assistance –

Survey participants for seventeen, (57%), of the thirty surveyed technology companies indicated that they provide technical employees with educational assistance, although six of the thirty companies do not have a formal policy. Representatives for four of the thirteen companies that do not provide educational or tuition assistance said they have never had a request for assistance. One said his company might provide assistance if someone asked for it and the course was considered mutually beneficial.

In the companies that provide educational assistance, all require that the request be approved by the owner, CEO, or top facility manager and are reviewed on a case by case basis. Similarly, in all but one case, the course or degree must relate to the employee's job or field of work, must build employee competence, or must be consistent with company objectives. The exception is a company that allows each employee to take one UW course of their own choice each semester without tuition expense.

Some companies are fairly lenient in their approach to educational assistance. One company permits company time off when course schedules conflict with work time.

Qualifying conditions are specified in a few companies. For example, one company restricts the courses that may be eligible for assistance to 3 course hours per semester, with the course scheduled off company time. The student must receive at least a grade of B for reimbursement eligibility. In another

company, reimbursement is limited to $500 per semester. A third company does not provide assistance for Masters Level courses. Two surveyed companies indicated that they try to get reimbursement for requested coursework through Workforce Service Training Grants, before approving educational assistance.

Employee Turnover Comparisons –

Most employers don't realize the real cost of employee turnover. Consider costs due to:

- the employee's leaving,
- recruitment costs,
- new hire costs,
- training and orientation cost,
- lost productivity for the employee and co-workers,
- the impact on sales generation.

Based on the level of the departing employee's responsibility, these turnover cost calculations can easily reach 150% of the employee's annual compensation. For managerial and sales personnel, turnover costs may likely reach 200% to 250%, if not higher.

Survey participants were asked to contrast their company's employee turnover with other companies in their industry. Table 12 provides responses to this inquiry by business category and indicates that about three out of four surveyed technology companies consider their employee turnover to be the same or lower than turnover for other companies in their industries.

Table 12 – Perceived Turnover by Business Category

Type of Business	Higher Than Industry	Same As Industry	Lower Than Industry	Unknown
Engineering & Environmental Consulting		4	4	
Manufacturing/Repair/ Construction	1	4		1
IT Systems/Software Development		2	2	1
Scientific-Technological Research/Analytics			2	2
Graphic Design (Web/Print)	2	1	1	
Natural Resources/ Conservation		1	1	1
Total	**3**	**12**	**10**	**5**
Percent	**10%**	**40%**	**33%**	**17%**

Point of Interest:

Turnover cost calculations can easily reach 150% of the employee's annual compensation.

One survey participant associated with the IT Systems/Software Development business category suggested his company was experiencing approximately a 20% turnover rate, which was about the same as industry turnover.

Competitive Compensation –

To effectively attract and retain employees, companies must be both willing and able to pay employees competitively with other employers in the employee's relevant labor market and in the industry in which the employer competes. Competitive compensation does not necessarily mean paying as well or better than other competitive entities. Business conditions should certainly enter the picture when developing compensation philosophies, policies and practices.

Survey participants were asked to contrast their company's compensation structures with structures for other comparable local business and with companies in their respective industries. Generally, participants considered their structures more competitive with local business than with other companies in their industry. Seventy-three percent of the survey participants rated their company's structures as "same or greater" than comparable local business, and 60% rated their company's structures as "same or greater" than companies in their industry. A matrix of responses is provided in Table 13, below.

Table 13 – Compensation Structure Comparison

Compensation	Local Business	Industry
Greater Than	43%	17%
Same As	30%	43%
Less Than	23%	37%
Don't Know	3%	3%

When asked whether their company had access to current wage and salary survey data, only about 25% of the companies responded affirmatively. The following comments were noted:

- HR has access to salary surveys.
- HR uses published survey data.
- Sometimes we get state surveys to run compensation comparisons.
- The corporation uses Radford Compensation Survey.
- We don't have survey data, but we stay tuned to what the Forest Service pays for similar work.
- The company owner has a good feel for competitive salary offered by UW.
- We use Computer World National Survey and Mountain States Information Technology Survey.
- We use the Department of Labor surveys.

Area Compensation Rates –

Survey participants were asked to provide average pay rates for an exempt Engineer, or the closest equivalent position they had to a generic skilled Engineer. Software Developers and Graphic Designers were considered equivalent positions with the level of skill being targeted.

Secondly, participants were asked to provide average pay rates for a non-exempt Technician; typically someone with an equivalent of a 2 year technical degree. Jobs that might fit the targeted Technician position would include an intermediate level Lab Tech, Research Tech, or Computer Tech.

Only 50% of the surveyed companies were willing or able to provide salary data as requested. Many of the companies providing salary data indicated their data was on the low side, because relevant employees were generally lesser experienced employees.

The technology companies providing salary data had a mean average of 17.7 employees, a median of 16 employees and a range of 2 to 76 employees.

In essence, confidence in the following survey data is relatively weak, primarily due to ambiguity in the instructions provided survey participants and because of reluctance or inability of many survey participants to provide salary data. Thus, our survey responses may not be highly representative of all technology companies in the Laramie area.

Regardless, Table 14 provides a rough approximation of comparative area pay rates for the Engineer and the Technician position, based on participant responses.

Table 14 – Area Compensation Rates for Engineer and Technician

	Mean Pay	Estimated Entry Pay
Engineer	$58k to $61k / year	$42k to $47k / year
Technician	$38.5k to $41.5k / year	$28k to $29k / year

Earnings comparisons were made for several occupations with *September 2011 Occupations, Earnings and Wages* data, which was prepared for the Central-Southeastern Region of Wyoming, and published by the Wyoming Department of Workforce Services Research and Planning. That comparative data, presented in ($000) is provided in Table 15.

Table 15 – September 2011 Salary Survey Data

Occupation	Est. EEs	Mean Wage	10%ile	25%ile	Median Wage	75%ile
Civil Engineer	120	68.3	50.7	55.7	64.0	76.2
Mechanical Engineer	40	70.5	43.6	50.8	67.4	89.8
Engineer – Others	20	67.2	41.9	49.0	70.4	85.6
Systems Analyst	60	74.5	42.1	48.3	59.9	77.9
Software Engineer	20	68.5	40.9	52.0	62.7	86.5
Engineering Tech	20	51.9	28.6	43.9	53.3	63.0
Drafter	40	36.5	24.6	27.1	34.3	45.0
Computer Sup Spec	120	46.9	28.7	36.7	47.0	57.0

The shaded data in the chart above represent "exempt" occupations. The data that is not shaded represent occupations that are traditionally considered "non-exempt" by Fair Labor Standards guidelines.

Healthcare Considerations -

The SNAPIT Technology Workforce Survey did not specifically ask technology companies questions about healthcare coverage or issues. During survey interviews, however, the healthcare and premium cost issue was raised on numerous occasions. The following are examples of healthcare-related problems certain surveyed companies have encountered.

> **Company #1** – Cost of healthcare is our biggest challenge. *The company pays the full premium for employees and dependents.* In an attempt to lower premiums, if an employee's spouse is employed, the company will pay that employee a higher salary if he/she decides to take the spouse's coverage.
>
> **Company #2** – *Company pays the premium for the employee. The employee pays for dependents coverage.* The company is struggling with employee payments and has cautioned employees that it doesn't know how long it can continue the payments its making. The employees may have to make more contributions. Healthcare is an expense that affects their compensation.
>
> **Company # 3** - Company had an employment offer rejected by a candidate because the cost of health insurance was too high. *The employee pays a portion of the Single coverage premium and 100% of the Family coverage premium.*
>
> **Company # 4** - Candidate took a better job offer with another company because healthcare costs were lower. *The employee pays 50% of the premium cost for both Single and Family coverage.*
>
> ***Company #5*** - *Company provides no coverage.* Particularly for small companies, it is difficult to attract or retain employees unless you offer health insurance. The cost of healthcare is just too prohibitive.
>
> **Companies #6 – #9)** - In addition, four other technology companies indicated that non-competitive health insurance coverage was a cause of employee turnover in their companies.

Thus, 30% of our surveyed technology companies have referred to healthcare coverage and cost issues as a source of workforce problems for them. Total employment in these companies has a mean average of 11.25 employees, a median of 6 employees and a range from 2 to 30 employees.

Reasons for Turnover –

Our survey participants were provided with a listing of reasons that may contribute to employee turnover. They were asked to identify relevant reasons why employees terminated employment with their respective companies. They also were given an opportunity to specify other reasons that were not included on the listing. Table 16 identifies the frequency of responses received from survey questions.

Table 16 – Reasons for Turnover

Perceived Reasons Employees Terminated	Frequency
• Employee skills and interests do not match job requirements (Poor job fit)	15
• Employee disciplinary or attitude problems	11
• Factors outside of work (i.e., spouse difficulty adapting to area)	11
• Compensation is not competitive with comparable industries	8
• Employees feel there are insufficient opportunities to advance	8
• The economy – Layoffs required or anticipated	8
• Lack of commitment to company or its leadership	6
• The work environment is not suitable to employees	6
• Employees have unrealistic expectations	6
• Employee benefits (i.e., Health Insurance, retirement plan) are not competitive	5
• Employees do not understand how the business is doing	4
• Work location	4
• Employees perceive economic difficulty	3
• Insufficient recognition and participation in decisions that affect employees	3
• Other – Major project/assignment was completed – employee was released	2
• Other – Conflicts with work schedule (school or personal life)	2
• Employees do not understand what is expected of them	1
• There are inadequate training and personal development opportunities	1
• Other – Personality conflicts	1
• Other – Relocation	1
• Other – Communications problems with their boss	1
• Other – Company offered employee a deal to leave voluntary	1
• Company procedures are misunderstood or inconsistently applied	0
• Employees do not receive regular, formal performance appraisals	0

There are often disconnects between management perceived (or even employee-stated) reasons why employees leave their jobs and the root causes of turnover. Those who have screened numerous employment applications in their careers may have noted an extraordinarily high frequency of the phrases "left for more money" or "left for advancement opportunities" as reasons why applicants leave previous employers.

Numerous studies into the issue of why employees leave their employers suggest that the major reasons for turnover relate to the way employees feel they are being treated – primarily from immediate supervision or management. There is an aphorism that states, "People leave people, not their jobs." Both careful selection and continuing attention to assure there is a "good fit" between company and employee needs have significant impact on retention efforts and turnover costs. When an imbalance occurs, resentments result. In addition, during the selection process and performance reviews, managers need to remind themselves that not all engineers, for example, are motivated by the same work environment, work challenges or management style.

MUNICIPAL & COMMUNITY SERVICES

As is also the case with Laramie's economic development, the growth and vitality of its technology sector is substantially depended upon infrastructure and services afforded through municipal and community resources. This section summarizes assessments of our surveyed company executives relating to the adequacy of municipal and community services; Laramie's strengths and weaknesses as a place to do business; and barriers to growth in the Laramie area.

Table 17 – Municipal and Community Services Ratings

1 = Excellent; 2 = Good; 3 = Average; 4 = Fair; 5 = Poor

Municipal/Community Services	Ave Rating	Rating					Tot # Ratings
		1	*2*	*3*	*4*	*5*	
Access to Highway/Roadway	1.38	19	9	1			29
Water & Sewerage Supply	1.38	14	6	1			21
University	1.46	17	7	1	1		26
Fire Protection	1.53	9	7	1			17
Economic Development Corporation	1.57	12	6	3			21
Police Protection	1.57	11	8	2			21
Tech/Community College	1.58	12	4	2	1		19
Schools (K-12)	1.67	12	5	3	1		21
Telephone	1.67	10	8	3			21
Paramedic/Emergency Service	1.68	9	7	3			19
Traffic Control	1.87	7	4	3	1		15
Electrical Supply	1.96	10	7	3	3		23
Healthcare Services (Hospital)	2.04	7	9	6	1		23
Internet Access	2.07	12	7	4	5		28
Workforce Services	2.18	2	10	5			17
Chamber of Commerce	2.26	5	5	8	1		19
Availability of Road Transport Service	2.33	1	6	5			12
Child Care Services	2.41	3	6	7		1	17
Disposal of Waste Material	2.43		10	2	2		14
Availability of Warehousing	2.50	1		3			4
Local Streets & Roads	2.62	7	6	7	2	4	26
Recycling	2.63	7	5	5	4	3	24
Inspections (e.g., licensing)	2.67	1	3	3	2		9
Availability of Appropriately Zoned Land	2.73	2	4	2	1	2	11
Zoning & Community Planning	2.92	1	5	2	2	2	12
Development Approval Process	3.00	1	1	3	3		8
Access to Suppliers	3.09	2	5	7	7	2	23
Access to Markets	3.13	3	7	4	4	6	24
Access to Airport Facilities	3.17	1	4	8	10		23
Availability of Rail Transport	3.80	1	1	2	1	5	10
TOTAL	**2.16**	**199**	**172**	**109**	**52**	**25**	**557**

Table 17, above, identifies thirty municipal and community infrastructure and service issues. Survey participants were asked to rate each of these issues from (1) Excellent to (5) Poor. These participants were also asked to not rate any issue, if they didn't have an opinion on the item or if they didn't feel the issue sufficiently applied to their operations.

For illustration purposes, the "Average Rating" for each **Municipal/Community Services** item listed, was calculated, using "Access to Highway/Roadway" as an example:

# of Ratings/Rating Value		Rating Value		Product
Total (1) ratings = 19	X	1	=	19
Total (2) ratings = 9	X	2	=	18
Total (3) ratings = 1	X	3	=	3
Tot # Ratings 29			**Sum of Products**	**40**

Average Rating = 40/29 = 1.38

Additionally, survey participants were asked to identify any service they felt should be rated, but was not included with the listing of 30 Municipal/Community Services. Participants added a total of six services. Those services and their corresponding ratings are:

Service	Rating
• UW Career Services	1
• Hazardous Material/Substance Shipping	5
• Engineering Modeling and Simulation	5
• Resources to technology transfer (Market & Economic Analysis)	5
• Investment in community/culture resources	5
• Government Contract Administration – Legal & Accounting resources	5

Comments/Suggestions for Improving Infrastructure and Services –

Following their rating of the infrastructure and service issues presented in Table 17, our survey participants were asked for suggestions regarding how to improve upon any of the rated service issues.

The following summarizes responses received for a variety of the listed issues. There were twenty-two (73%) survey participants who made at least one suggestion or comment, as follows:

Economic Development

- I was bummed about Verizon's decision, but our infrastructure needs has a lot to do with population growth. I'm not sure I want to see the population grow to 100,000. That's not the size of a community I prefer to live in. I wouldn't mind staying in the 30,000 to 40,000 zone.
- Grow or bring in more technology companies, so we have a larger pool of professionals from which to draw people. Tech companies need to be cautious regarding what might be considered "pirating" employees from other companies.
- Recruit another company like Verizon.

Telephone/Fiber Optics

- Fiber should be brought to our business premises. This would be attractive to potential businesses coming into Laramie. I'm currently paying $650 per month for a T-1 line, which is about 3 times what I should be paying.

Traffic Control

- The Intersection of 4th and Grand seems to have more than its share of fender benders.

Electrical Supply

- We have experienced both power and internet interruptions that affect our operation.
- Power reliability could be better. We experienced a number of interruptions and had to install back-up power sources.
- The electrical utility is working within the parameters the State set for them for supplying power. There is more variation permitted than would be the case if we were located closer to Denver. The greater variation in supply affects operations. This company thinks it is probably not cost effective for the power company to make a change.
- We have sufficient water to do PV (Photovoltaic) manufacturing -- using sun for electrical power generation.

Internet Access

- We need better internet access. Uploading is horrendously bad. Laramie has very slow service.
- Internet provider should provide faster service.
- Internet access is poor. It may improve if we bring in another company like Verizon.

Workforce Services

- We don't use Workforce Services too much – primarily only for clerical people. We just never had much luck with their ability to respond quickly to openings.

Chamber of Commerce

- Chamber Master (website) was expensive to create, impeded on local business (no bid) and was developed by an outside firm.

Child Care Services

- Quality is good, but access is difficult.
- The community needs infant care services.

Warehousing

- Without the Rocky Mountain Forest Products Building we would be concerned about storage.

Local Streets & Roads

- Repair and improve them.

Recycling

- We now have recycling for residences, but we also need it for office buildings.

Regional Airport

- Develop better Regional Airport schedules. When you come in from the East Coast, you can't make the latest flight from Denver to Laramie.
- Regional Airport flight schedules impact usage.
- Regional Airport schedules between Denver and Laramie don't make it feasible to use the Regional Airport in most cases.
- Laramie Airport pricing and schedules is a problem. If Cheyenne didn't offer more alternatives, we would use Laramie more.
- Access is poor and a deterrent to large meetings in Laramie.

Government Resources

- We need to better prioritize resources so as to improve Public Works, Community Development & Engineering. Engineering is overstaffed. We need to privatize most City services.
- The City staff projects a poor vision and a lack of support to business (example, Signage regulations.). We need to consider going to a 3 Ward system.
- Engineering is under Parks and Recreation, but should be a separate department.
- Our State Legislature doesn't recognize how poor our community is. We need a payment in lieu of taxes system. (Our government is damaging our community by not providing sufficient money. The University is a drain on services the city is providing its citizens.)

Community Strengths as a Place for Business –

Survey participants were asked to identify Laramie's strengths as a place to do business. Each survey participant identified one or more strength. The following delineates those responses. The "Quality of Life" and the University of Wyoming were recurring themes.

Quality of Life

- Quality of life is a great strength.
- A cute, quaint, clean and safe city with all the creature comforts. Adequate places to eat and sleep.
- The lifestyles that people can live.
- Wyoming and Laramie are great places to raise a family.
- Recreational activities.
- Small town atmosphere.
- Low crime. No apparent gang activity.
- Family-friendly area.
- The Rec Center is a huge strength.
- The Rec Center is a big plus for attracting and recruiting people.
- The quality of life is a big draw for people. The ski area is getting rebuilt and will be a big asset to the community.
- The community itself. This is a great place to live and raise kids.
- Small town atmosphere with networking.

- Life is non-intrusive. All the advantages of living in a small community. Good schools.
- The culture is great.
- The personal quality of life is positive. Good schools. Short commutes to work.
- Diversity in its Socio-Political outlook. The Recreation Center. Informal lifestyle and good schools.
- A clean and safe city.
- Our hospital is a positive.

The University of Wyoming

- The University creates a great culture for professional and technical people.
- The University is a huge strength. (4 responses)
- The University is a big pull on the availability of talent and resources.
- University and its sports.
- The University, particularly the Business College.
- Having the University in the community. This helps with employment, as well.
- A big strength is the University – we have a large pool of better educated people.
- The University creates lots of technical jobs.
- The University, because it is a great resource. It is the reason we have the Geological Survey.
- The University is a big resource for us.
- There has been a lot of growth in the restaurant and lodging business tied to the University.

Residents/People

- Residents take pride in their community.
- The people. I have great clients.
- People care about business. They want to see you succeed.
- Generally, word of mouth marketing is good.
- Great employees.
- The work ethic of people in the community. Hard to beat the staff we have here.

Cost of Business/ Available Services

- Taxes are reasonable in WY.
- Low cost of living and cost of doing business.
- Excellent tax base.
- Commercial property is reasonably priced.
- Wages are reasonable.
- High speed Internet and low operating cost.
- Great access to professional services (i.e., LEDC, WBC, e-2-e).
- Low taxes.
- The cost-of-living is low. Low energy cost – low taxes.

Location

- Close to major metro areas without having to live there.
- Our location is good for business. We travel to clients from Denver to western WY. We're on the way between Cheyenne and Denver. The Interstate is handy.

- Access to highway transportation, except with I-80 closures.
- Open spaces.

State of Wyoming

- The State of Wyoming is easy to deal with in comparison to other states like California or even Utah with regard to regulations, people, employment and the law.
- Workforce Services Training grants and grants to attend trade shows.

Community Weaknesses as a Place for Business –

Conversely, survey participants were asked to identify Laramie's weaknesses as a place to do business. Twenty-six (87%) survey participants identified at least one weakness. One of the participants who did not identify a weakness said, "Disadvantages that people tend to talk about are just cosmetic. People do have to have a reason to want to come to Laramie. Those who don't have a reason will stay where they are or possibly go elsewhere."

The remaining survey participants provided the following responses:

Competition for Local Work

- Because Laramie has a great quality of life, competition for local work is intense. There is not a huge market for Environmental and Engineering consulting in the local area, yet we have a considerable amount of competition.
- The number of competitors for our business. (Environmental and Engineering)

Insufficient Investor Support

- There is not an investor network that is actively pursuing cutting edge industries in the area.
- We need more investor money for new start-ups and fresh ideas in the technology business sector.

Climate

- Our climate inhibits growth. We need to find a niche or some major technical advancement that will attract business to the area despite the unfavorable weather conditions.
- We rely on road transportation for shipping in and out of Laramie. Sometimes we ship an order for less than 2 day delivery. When I-80 closes due to weather, we hear about late shipments from our customers.
- Possibly our weather is a weakness.
- Sometimes it's hard to get in and out of town because of the weather.
- Closing the highways in winter is a problem. The Rail Spur is a wonderful idea. Right now we have to pick up materials that are shipped to Denver.
- Our climate.
- Our weather.

Location

- We don't have any customers in Wyoming, and only 4 in our time zone.
- We don't really have a market here for the services we provide. We're in Laramie, because that's where our owners want to be.
- The distance between Laramie and Denver Airport is just too far. We have employees and trainees who fly 2-3 times per month.
- We're somewhat isolated.
- Distance to an international airport.
- It's difficult for people (customers, suppliers, executives from other locations or companies) to get to Laramie in terms of time and money.

Laramie is Too Small

- Laramie seems to be too small to find certain marketing services and expertise.
- Our size is a weakness. We need more commercial development.
- The small population presents problems. If a company needs an experienced skilled workforce, it has to bring the talent in form outside.
- Our small population is a weakness.
- There is no critical mass (major forces or infrastructure present to accelerate business growth.)
- Small size in relation to the services we offer, particularly engineering service.
- Low population.

Finding Experienced Professional and Technical Employees

- There are just an insufficient number of experienced professional and technical employees available in the area.

Reasonable Cost and Availability of Healthcare Insurance

- Our ability to get health insurance, which is actually a national issue.

Child Care

- We lost an Office Manager due to the lack of available childcare services.

University of Wyoming

- The University, because it just sucks all the air out of the town – it is such a dominant entity.
- The University doesn't give technical students enough background in the way Capitalism works. Consequently, people come out of the University with more of an entitlement orientation and way of thinking. This is the product of the way professors teach.
- The University of Wyoming is a good school with a good teaching staff, but among those who teach, there seems to be many who took the job at UW as their second choice. Because they are not living in their preferred location, they seem to perceive their surroundings negatively.

City Government

- There's a lack of planning. The City Council seems to have personal agendas that get in the way of progress.
- Lack of municipal and state support.
- The City Council. There seems to be a lot of self-interest and self-serving going on. For example, we should have had a Clark Street bridge ten years ago, but you don't get progress with a good old boy system.

Website Maintenance

- People don't commit to keeping a successful website. They seem to know what they want from a website, but don't want to invest the resources into it to keep it successful.

Barriers to Growth in Community –

Survey participants were asked to identify barriers to growth in the Laramie community that affect their existing business. To a certain extent, there is correspondence between this survey question and the question regarding weaknesses in the previous section.

Twenty-three (77%) survey participants identified at least one barrier to growth. The remaining seven participants either indicated they have not hit any barriers to growth or they did not respond to the question.

A listing of barriers garnered from survey participant responses follow:

Competition

- There are barriers based on my field of work. The number of engineering firms in this area presents a competitive problem. The WY Water Development Commission normally requires engineers to perform work for them – I'm not an engineer. (Natural Resources/Conservation)

Investment Support

- We lack a strong investment group. I don't think the banking industry truly participates to the extent it should.
- We need local investment money.

Difficulties Recruiting - Climate

- Within the next 2 years, we'll probably have to do more hiring from outside of Laramie, which will make things more difficult.
- From a recruiting standpoint, our weather and climate presents a difficulty in attracting spouses, particularly wives and families. Right now, we don't have a sufficient talent base in the community. As a result, business suffers.
- Our climate may attract some businesses, but it may also negatively affect decisions on where people want to live.
- Our weather is not attractive to many people. People tend to view Laramie as the end of the earth, due to the pass being closed in winter.

Location

- Poor access to airport facilities, markets and suppliers.
- Laramie is not an easy place to get to if you're flying through Denver and want to stop in to look at a potential customer or visit a business for some other purpose. You have to make a concerted effort to go out of your way to get here.

Small Population

- There are few spousal employment opportunities because of our small population.
- The trailing spouse issue is ever present. It is difficult to find quality work for trailing spouses.
- Low population and low level of manufacturing activity affects the area's infrastructure and impacts industry growth.
- We need to grow the size of the city.

Housing

- We need affordable, quality housing and we need to reach comparability with Fort Collins.

Shipping Issues

- Laramie is classified as a rural zone by UPS and FedEx, while Cheyenne isn't. Consequently, we pay a surcharge on shipments. This places Laramie business that does a lot of shipping with these handlers at a disadvantage. FedEx uses the excuse that it has no office in Laramie. UPS explains the surcharge "is just the way it is."

Unflattering Image

- The Brownfield area could be loaded with wind power and Photovoltaic (solar) power. Albany County needs a Building Code. It looks like hell when you're driving into the city.
- The Laramie community continues to be plagued by association with the death of Matthew Shepard.

Resources in the County

- When you compare Laramie to other areas of Wyoming, we don't have the mineral resources that have driven population growth elsewhere. We basically have technically-based business that must be our driver.
- The technology sector essentially doesn't exist elsewhere in WY.
- There are cultural challenges. Agriculture and ranching do not want to see growth. They have a "Keep it as it is" mentality.

City Government/Infrastructure

- Actions and sentiments of certain City Council members tend to be anti-business.
- The lack of infrastructure is due to a failure to grow, which is due to the lack of infrastructure. It's a Catch 22.
- We are not forward thinking. Our infrastructure sewer and water systems are atrocious. We've deferred maintenance on them too long.
- City Council – They view economic development the same way it was viewed 25 years ago.

Economic/Commercial Growth Environment

- I sure would have liked to see Verizon come to town. I don't feel that I know enough about the reasons why we are having difficulty growing our commercial business. I would just like to see the outcomes change.
- There's not a lot of reasonable retail space available in Laramie.
- To the extent that the entrepreneur is enabled, you will have economic growth. We need to make Laramie a place where entrepreneurs feel they can be successful. We are doing this to a certain extent. I have not felt restricted from doing what I want to do.
- At this time, the biggest barrier to growth is the economy.
- Wyoming and Laramie should focus more on helping entrepreneurs and small business, instead of bringing in big operations like Verizon or other data centers. I realize we need a balance, but I don't want Laramie to become another Fort Collins.
- Laramie is a technology-based community and is pretty much on the right track.
- There are stimulus programs that focus on "for profit" companies. Non-profit companies can't take advantage of them.

Wyoming Business Council

- The WBC rarely gives hands-on assistance particularly with marketing issues. I should be able to get help in writing press releases, getting them to newsprint. Manufacturing Works promised they would enable us to partner with a company in Ohio on certain materials issues. That never happened.
- The WBC organizations need to concentrate on "hands-on" assistance. For example, like it did by getting a grant writer that identified the fact that companies were doing a lousy job at writing grants. By directly helping companies write grants, there was an improvement in the number of grants awarded.

FINDINGS & CONCLUSIONS

The one common workforce issue that impacts all Laramie technology sector employers is difficulty in recruiting qualified and experienced technical and professional employees. Even when our surveyed technology companies did not identify recruiting as their primary workforce difficulty, the issues they did identify either contributed to, or resulted from recruitment difficulties.

The following are significant findings gleaned from our SNAPIT Technology Workforce Survey.

Local Recruiting -

Most technology companies have a stronger than normally expected preference for recruiting locally. Operating costs, company competitiveness factors and proximity to helpful resources are important considerations for most Laramie technology companies surveyed.

Although each Laramie technology company has its own unique characteristics, the following considerations are influential in analyzing the Laramie technology sector and its propensity for local recruitment:

Size and Phase of Market Development

Ninety percent of our surveyed technology companies employ 20 or less full-time people. The average full-time staff in these ninety percent of surveyed companies is 8.5 employees.

Respondents in our surveyed companies tend to associate the life cycle stage of their primary product or service with the life cycle stage of the organization as a whole. Approximately 25% of the surveyed respondents view their companies to be in the "emerging" stage of its market development. Slightly more than 50% consider their companies to be in the "growing" stage of development – (mostly in the early growing phase).

Both these characteristics, company size and phase of market development, suggest a greater degree of fragility than might be the case with larger, more stable or mature competitors. It is also notable that Laramie technology companies are keenly conscious of their cost of doing business, and the implications that cost has on their operational stability and sustainability.

In a number of cases, smaller technology companies with underdeveloped markets (or project-reliant businesses) operate with non-traditional work schedules or otherwise experience large fluctuations in their work schedules. In many cases, the aberrant work schedules inhibit companies from establishing workforce stability or creating business continuity. In effect, these schedules tend to discourage qualified and experienced employment candidates from pursuing otherwise agreeable opportunities.

Visibility and Networking in a Highly Educated Market

To help gauge potential visibility within the Laramie labor market, and to gain further insight into the general level of educated talent that exists in this same market, consider the following:

- According to the Wyoming Department of Workforce Services, during 2011 Albany County had a labor force approximating 19,441 workers. The City of Laramie's labor force represents approximately 84% of the County data, or 16,350 workers.
- According to the 2010 U.S. Census Bureau, 47.4 % of the Albany County population 25 years of age and over have educationally attained a Bachelor's degree or higher.
- Dr. William Gern, University of Wyoming Vice President of Research and Economic Development, stated that currently the number of technology-based companies in the Laramie technology sector has grown to approximately 65 businesses.
- The technology sector surrounding Laramie is enriched by centers of knowledge such as the University of Wyoming, Laramie County Community College, and WyoTech. There is a fairly high degree of networking and synergy that exists between Laramie's business and academic communities.
- Forty percent of the technology companies surveyed by SNAPIT began operations during or after 2006. About half of those companies, benefited from association with the Wyoming Technology Business Center (WTBC), which became operational in 2006.
- The Wyoming Technology Business Center (WTBC) provides business development assistance to early stage, high-growth technology based businesses. It also provides the client companies of its incubator with business counseling and executive coaching services. Statewide networking opportunities are also available through social and educational networks such as e-2-e.
- UW, LCCC, and WyoTech each have career or vocational placement services available to their students, including referral services for employers. Many local businesses work independently with these services. Opportunities also exist for employers to network on an informal basis with administrative personnel or faculty members of their choosing.

Based on the foregoing, it is easy to speculate that even small technology companies have the potential to attain high visibility and develop a degree of notoriety within the academic, business and general local population.

Businesses can gain familiarity with students, faculty, other employers and other relevant resources within the region. Conversely, there is a high likelihood that employers either know, or know someone who knows, local employment candidates. This can play to the employer's advantage, for example, when reference checking candidates or obtaining assistance with candidate assessment.

To the extent they are considered advantageous, both formal and informal networking resources are available and may be cultivated to the benefit of the local employer. Voluntary use of these networks can benefit employers in a range of activities from referring employment candidates, to researching technical or operational problems for possible solutions.

Competitive Compensation & Benefits

Most Laramie technology company managements tend to feel their operating costs are lower and that workforce costs are more competitive in Laramie, as compared to locations outside Laramie's workforce marketplace. A significant number of survey comments referred to Laramie's lower pay rates, reasonable taxes, low cost-of-living and low energy costs.

With specific regard to compensation and benefits, many of our surveyed technology companies perceive their compensation structures to be lower in the Laramie area than would be the case if they were located outside the local area. On the other hand, only 25% of surveyed technology companies indicate they have access to competitive compensation survey information. Many surveyed employers attribute lower Laramie compensation costs to the reasonable availability of interns, recent graduates and other entry level candidates in Laramie. In general, these employers view both the "quality and stability" of this "entry level" workforce as "above average."

Smaller technology companies generally feel they are disadvantaged in attempting to compete for more qualified and experienced technical employment candidates, when it comes to providing healthcare insurance. Problems associated with providing healthcare dissipate somewhat when recruiting from Laramie's relatively large student population, many of whom may have alternative healthcare options available to them.

It is generally felt among surveyed technology employers that when dependent healthcare is provided, premium cost-sharing designs seem to generally favor "Single" rather than "Family" coverage. It is suspected (but has not been confirmed) that this practice is more prevalent for smaller private industry employers, particularly those located in university towns like Laramie, than it is for employers with a broader national recruiting footprint.

Many survey respondents indicate that even when experience and qualifications are preferred, the ease, availability and lower cost associated with hiring interns or entry level candidates in Laramie is difficult to ignore in their employment decisions. This suggests that these employers may be willing to accept less than the best candidates available; a dubious practice that can have negative implications on both short and long-term "job fit." (Ref: Employment Processes – Poor Fit Issues, on page 55)

Adaptation to Climate
Laramie's weather is typically described as being cool and windy and is viewed as being an inhibitor to candidate relocation and retention.

By hiring local employment candidates, many surveyed companies feel they are hiring people who can fully appreciate, or have become satisfactorily acclimated to, the area's climate and weather conditions.

Other Significant Findings Related to Recruiting -
Despite the propensity for technology employers to recruit locally, there are other significant findings that relate to their difficulties in recruiting qualified and experienced technical and professional employees.

Supply and Demand
The supply and demand for technical and professional talent is an important factor that impacts the decision of where Laramie employers must recruit to maximize their chances of success.

Seventy percent of the surveyed technology employers indicate they recruit outside the Laramie labor market. Some do so infrequently, others typically recruit outside Laramie. Some recruit only regionally, while others recruit in specific geographic locations, based on where the talent most likely resides.

Employers capitulate to recruiting outside the Laramie area for either of two reasons:

1. The company is in need of unique or special talent or competencies, which are not to be found in the Laramie area, or
2. The company is recruiting "difficult to fill" positions where the demand for qualified people far exceeds the supply, (i.e., Civil Engineers with 3-5 years mandatory experience). In most cases, these are jobs that are difficult to recruit everywhere in the country.

Employment Processes – Poor Fit Issues
There are a substantial number of surveyed technology companies using employment processes that are inadequate or ineffective for sufficiently assessing required aptitudes, interests and attitudes affecting job fit. The impact of employment processing deficiencies becomes even more troublesome when performance management (coaching and performance appraisal) processes are not implemented or effectively employed as well.

In some of these cases, hiring decisions are heavily influenced by reliance on referrals or external resources, without sufficient validation.

Based on responses to our SNAPIT survey questions regarding employment turnover, it would not be unrealistic to conclude that more than 50% of past turnover could actually be attributed to "inadequate or ineffective hiring processes." Many times the term "poor fit" connotes problems with employment processes and practices, or failure to provide appropriate guidance and feedback through performance appraisals.

Hiring mistakes resulting from poor fit, poor performance, misconduct or misunderstanding can be quite harmful and costly for both the employer and employee. The employee may be responsible for circumstances that ultimately lead to employment termination or to behavior that truly indicates a "poor fit." However, it is the employer who remains responsible for communicating, assessing and

managing expectations and performance. This responsibility starts with the employment process. The sooner potential "poor fit" conduct and performance is detected, the less cost and harm that should result.

Despite the foregoing, there are several technology companies in Laramie that have highly developed and well executed employment processes (as well as performance management processes), which appear to be operating very effectively.

Planning and Training Functions

With a few major exceptions, our surveyed technology employers do not appear to place a great amount of emphasis on planning, employee training or developmental needs. WTBC clients receive counseling and mentoring during their tenure. Otherwise, however, it is unknown whether many executive managers or entrepreneurs recognize the need or dedicate much time to their own self-development.

Forty percent of our surveyed technology companies indicate they do not operate under a current strategic plan. Only 17% of those companies that do operate under a current strategic plan say that the plan is reviewed and updated annually.

Staff planning, particularly with regard to hiring interns, varies considerably from company to company. Some companies budget the use of interns based on actual training needs of the intern and the availability of mentors or trainers. Other companies use interns as "temporary employees" to help ramp up operations or to buffer business cycles.

Still other companies use interns or entry level employees as less experienced, temporary substitutes for regular full-time employees. In these situations, the intern is normally given a number of "learning opportunities," in order to determine whether he or she has the ability to assume the higher level duties and, therefore, should be offered regular full-time work.

As a general rule, on-the-job training is limited to legally required (i.e., OSHA and Hazardous Materials training) or assignment-driven instruction (i.e., CAD training, specialized software training). In several companies, new employees are assigned to mentors or project managers, thus receiving individualized attention to training needs.

There are times when additional training solutions are acknowledged which entail employees taking additional academic coursework. Slightly more than half of the surveyed technology companies have provided some form of educational assistance to certain employees. Requests for such assistance, however, are generally initiated by the employee as opposed to the employer.

When it comes to comparing the applicability of academic training to work Laramie technology companies perform, a few survey participants suggest deficiencies in vocational training curricula. Particular reference was made to construction trades, the printing trade and industrial skills training (i.e., equipment maintenance).

Most industries in the United States have drastically reduced their training budgets and resources over past years. In-house apprenticeships and the skilled craft training for existing employees have diminished in favor of recruiting experienced personnel, or expecting the academic community to fill training voids. For any number of reasons, including the relative importance placed on college degrees,

academic institutions do not appear to have allocated sufficient resources to trades or industrial crafts training.

Trailing Spouses and Significant Others
Companies looking for experienced technical and professional employees will increasingly be recruiting candidates with spouses, significant others and children. The opinions, perceptions, interests and needs of these significant others can be quite influential on the candidate's final decision to relocate.

Less than 30% of our surveyed technology companies do much to acquaint either the candidate, spouse or significant others who are unfamiliar with Laramie to the community. The companies that do take steps to familiarize decision makers with Laramie generally do a good job of not only touring the community but also introducing potential newcomers to other residents who have similar interests. The needs of a candidate's spouse, however, are generally not a consideration until after an employment offer has been made.

The term "Trailing Spouse" refers to an employed spouse who must normally find new employment upon relocation to the Laramie area. Most typically, recruiting companies offer to refer the trailing spouse's resume to other potentially interested Laramie employers. For the most part, however, the trailing spouse is primarily left to his or her own devices for finding and securing employment in the new community. Trailing spouses have generally faced difficulty in finding employment opportunities compatible with their previous career paths.

Findings Regarding Workforce Trends -
Overall, the assessment of anticipated workforce trending for technology companies in the Laramie technology sector has been very encouraging. This is particularly true considering the relatively sluggish economy experienced during the period in which assessments were acquired.

During the two year period prior to taking the SNAPIT Technology Workforce Survey, only 37% of our technology companies evaluated their employment levels to have risen. Comparatively, for the upcoming two year period, 73% of these same employers anticipated an increasing trend in their employment. A downward trend was anticipated by only one of the thirty surveyed employers.

- Surveyed technology companies indicated they expected to increase full and part-time employment by 15% during the 2 years ending approximately October 31, 2013.
- The fifty-two surveyed and targeted technology companies contacted by SNAPIT identified 146 specific positions they expected to open within two years following SNAPIT's inquiry (between late spring and early summer of 2011). Thirty-seven of those 146 positions were considered open at the time of inquiry.

Findings Regarding Municipal and Community Services -
The following Laramie organizational, infrastructure and community services have been rated by surveyed technology employers as being "above average" in performance:

- Organizations – University of Wyoming, LEDC, LCCC & WyoTech, Schools (K-12), Ivinson Memorial Hospital
- Infrastructure – Access to Highways/Roadways, Water & Sewerage Supply, Electrical Supply
- Community Services – Fire & Police Protection, Paramedic/Emergency Services, Telephone Services, Traffic Control, Internet Access

Based on the foregoing, Laramie has provided well for the foundational essentials needed to attract both business and employees to its community. The very lowest rated service among technology companies was "Availability of Rail Transport." This issue should be abated by the fall of 2012 with the operation of a newly constructed South Laramie Trans-Load Rail Spur to accommodate area materials and supply transit needs.

Laramie as "Place to Do Business" -

The following bullet points paraphrase statements expressed by survey participants regarding factors they consider Laramie's weaknesses as a place to do business:

- Intense competition within the area, particularly for Engineering and Environmental Consulting business.
- The need for more Capital Investment to fund new start-ups and entrepreneurial initiatives.
- Climate – sometimes making it difficult to get into and out of Laramie. Climate can also be off-putting when it comes to attracting particularly spouses of employment candidates.
- Location – its proximity to markets and international air transportation.
- Small Population – the need to grow in order to reach critical mass relating to infrastructure and workforce development. Small population can mean fewer opportunities for trailing spouses.
- Finding experienced Professional and Technical employees (focus of this study).
- Inability of small companies to obtain healthcare coverage at a reasonable cost (recognized as a national problem).
- Child Care – difficult access and lack of infant care.
- University of Wyoming – as a dominant entity in the area. UW tends to be the major decision criteria for most resources allocation decisions.
- City Government – lacks forward thinking and tends to appear anti-business at times. City Council's personal agendas can get in the way of progress.

Similarly, these survey participants identified the following weaknesses when addressing questions concerning barriers to growth in the Laramie community:

- Housing – the need for more affordable, quality housing.
- Shipping Issues – Laramie's "rural zone" designation by UPS and FedEx places companies that do a lot of shipping with these handlers at a disadvantage.
- Unflattering Images – Areas surrounding city entrances present eyesores. Laramie continues to be plagued by its association with the death of Matthew Shepard.
- Economy/Commercial and Retail – economy is a major factor. Laramie needs to focus on helping entrepreneurs and small business. There is not much in the way of reasonable retail space along major traffic corridors of Third Street and Grand Avenue.
- County Resources – Albany County is not a mineral-rich area, which has driven growth in other Wyoming Counties. Technology businesses must drive growth and diversification in this area.
- Wyoming Business Council – would like to see more "hands-on" assistance with marketing, grant writing and public relations.

Our surveyed participants offered the following considerations regarding Laramie's strengths as a place to do business:

- University of Wyoming – provides a great culture for professional and technical people. UW also provides business access to talent and expertise, sports, attracting jobs and people, and supporting business growth and development.

- Quality of Life – described as quaint, clean, safe, low-crime area, great place to raise children, great cultural and recreational environment, great schools and hospital, along with a non-intrusive life style.
- People – with a great work ethic, who take pride in the community and care about business.
- Location – close to major metropolitan areas, accommodating interstate highways and open spaces.
- Cost of Business and Availability of Services – reasonable taxes, wage levels, commercial property prices, low cost of living, high speed internet at low cost, low energy costs, great professional services (LEDC, WBC, WTBC's e-2-e).
- State of Wyoming – easy State in which to operate (regulations and laws). Workforce Service Training Grants and Trade Show Grants.

TECHNOLOGY WORKFORCE NEEDS & PATHWAYS TO SOLUTIONS

Based on the SNAPIT Technology Workforce Survey Findings and Conclusions presented in the previous section of this report, our SNAPIT Partnership has identified a number of technology workforce needs. It has also generated a number of ideas and suggestions, which for the most part should be looked upon as broadly defined solutions to those workforce needs. Although action is being taken to implement several of the suggested solutions, all will require further thought, refinement and much work.

In developing these solutions, SNAPIT's Board of Directors participated in a facilitated group meeting designed to foster consensus regarding major technology workforce issues and needs. Subsequently, the Board advanced various ideas and suggestions for solving prominent issues that surfaced. This meeting, which was conducted in late March 2012, was facilitated by Joe Coyne and Bobbe Fitzhugh of Community Builders, Inc., located in Douglas, Wyoming.

In early May 2012, a meeting was scheduled for participants in the SNAPIT Technology Workforce Survey. The purpose of this meeting was to provide these survey participants with feedback pertaining to the aggregated survey results and findings. In that meeting, validation was also sought and received with regard to Laramie's technology workforce needs and the pathways to solutions identified within the remainder of this section.

Need #1 - Market Laramie as a Technology Rich Entrepreneurial Region -

One of Laramie's greatest assets is its technology sector and the close association it enjoys with the many highly reputed academic resources available in the community. These assets are major attractors for entrepreneurs and technical employment candidates alike. Without a doubt, Laramie is an excellent location for them to build their businesses and careers.

Pathway to Solution

- **Work with other economic, governmental, academic and community service entities interested in changing or more accurately depicting Laramie's image (i.e., LEDC, Laramie Area Chamber of Commerce, UW, LCCC, City of Laramie, Albany County, Tourism Board, Main Street) to obtain their additional input, and to create consistent and uniform messages for marketing Laramie.**
- **Develop a unique "brand" or image that gives prominence to careers in technology and portrays Laramie's strong work ethics, values and/or academic linkages.**

- **Create common marketing materials, such as brochures, logos, advertising and promotional devices that can be used by technology businesses when recruiting, as well as in other initiatives designed to publicize the Laramie area.**

Need #2 - Develop, Refine, Expand and Organize Networks to Benefit the Technology Workforce -

The need for enhanced networking is quite apparent in several interdependent functions and processes impacting the employment of technology and professional employees. These functions and processes include issues relating to recruiting, technology career development, acclimating to the Laramie community and trailing spouse employment. For each existing, enhanced or newly created network developed, a community resource map should be created to ensure all relevant partners are included in the networking.

Recruiting: Presently, there is no known privately operated recruiting firm in the Laramie area. There are recruiting, referral and/or placement services currently operating at the University of Wyoming, the Albany County Campus of LCCC, WyoTech, the Wyoming Technology Business Center and the Wyoming Department of Workforce Services. Each service or function operates independently under its own processes and governance. Employers access these academic recruiting/referral networks as separate, disconnected transactions. Likewise, the recruiting/referral networks access employers independently, when their sources (such as alumni associations) refer candidates to them. It would appear that both Laramie's recruiting and referral of qualified and experienced candidates could be improved through more open or linked networking.

Pathway to Solution

- **Integrated currently independent networks to provide for more collaborative search and placement activities.**
- **This need requires additional research and attention.**

Technology Career Development: WTBC's e-2-e has proved to be extremely helpful in creating a forum for social, educational and developmental networking among entrepreneurs, business service providers and community support resources. There is a need, however, to cultivate networking along more specialized lines, focusing on technical people in similar industries, with similar backgrounds and interests. Such networking would not only provide opportunities for enhancing professionalism, technical knowledge, personal growth and development, but would also begin to create a local infrastructure that eventually accommodates career ladders between companies within the technology sector.

Pathway to Solution

- **Create networking opportunities along industry or technology lines for the purpose of:**
  1. **updating technical knowledge,**
  2. **creating opportunities for social and professional bonding,**
  3. **familiarizing industries with changes in laws and regulations, and**
  4. **raising awareness and enhancing career opportunities for local talent.**
- **Action Step: WTBC will be adapting its existing e-2-e networking program to include organized networking opportunities for the IT/Software Development industry cluster, and possibly the Engineering and Environmental cluster.**

Acclimation to the Community: Each technology company is currently left on its own to develop a program that helps relocating candidates and their families adapt to Laramie. Particularly in some of Laramie's smaller companies, the need to help relocating employees and

families adjust to their new surroundings might only occur very infrequently. Consequently, corresponding relocation activities may not be consistently implemented or attended to at all.

More seriously, new employees may be normally expected to adapt for themselves. Laramie needs a formal network that will promote the "positives" associated with living in in this area.

Pathway to Solution

- **Create a Newcomer Network. The purpose of this network would be to help relocating families acclimate to Laramie by providing tours of the city and surrounding areas, establishing a website that provides helpful information regarding community services and contacts, clubs, associations and activities available to the newcomer. Buddy systems could be established to help ensure that relocation and acclimation to Laramie is a pleasant, positive experience. This network would focus on interests and activities for relocating residents and employment candidates. It would be responsible for helping to make the relocation to Laramie smooth and comfortable.**
- **This need requires additional research and attention.**

Trailing Spouses: Early within the recruiting process, trailing spouses need to be able to submit their resume through a clearinghouse network that will assist in exploring employment opportunities. Any services that can facilitate a trailing spouse's transition to Laramie, will serve to benefit the employer and the reputation of the community.

Pathway to Solution

- **Create a Trailing Spouse Network. The purpose of this network would be to help trailing spouses find suitable employment in the Laramie area to the extent practical. The network would need to extend into all area companies and institutions that are impacted by "trailing spouse" issues or interested in using this resource.**
- **Action Step: WTBC offered to take the lead in creating a "clearinghouse" function to match trailing spouse resumes, interests and credentials with possible employment opportunities in the area. The existing HR Roundtable will be encouraged to support this effort. The Laramie Workforce Center has offered to lend assistance.**

Need#3 - Expand and Extend Outreach Services to Technology Companies -

It is presently a well-founded and accepted premise that early stage, high-growth technology companies have a better chance of success when they receive developmental outreach assistance and counseling, such as that provided through the Wyoming Technology Business Center. The assistance referred to typically focuses on Sales & Marketing, Human Resources and Organizational Structure, Financial and Information Systems and on-going Strategic Planning.

Our SNAPIT Technology Workforce Survey strongly indicates that counseling and mentorship are particularly important regarding employment processes and practices, performance management, employee communications and planning. In addition to non-technology employers, there are three categories of technology companies that could benefit from such business counseling and mentorship initiatives:

1.) Early stage, high-growth technology companies that have been targeted as potential clients for WTBC, but for some reason have not become clients,
2.) Clients of WTBC that graduated from the WTBC incubator and are no longer clients of WTBC, but could still benefit from assistance and business counseling, and

3.) Technology companies that do not qualify as clients of WTBC, because they are not early stage, or high-growth business candidates.

Without assistance, mentoring or business counseling, impediments to the success of these other categories of technology companies may be completely ignored, merely because entrepreneurs or business owners fail to recognize them as significant problems.

Pathway to Solution

- **The need described in the statements above does not necessarily imply that WTBC should expand a sphere of outreach influence beyond its sanctioned and funded mission.**
- **This need requires additional research and attention. There are other options that may be feasible in addressing many of the developmental needs that have been highlighted by our SNAPIT Technology Workforce Survey results (i.e., employment process, performance management and planning issues).**
- **The practicality of creating a development-oriented management network (or club) should be researched further. The network could have both social as well as developmental implications. The network could focus on implementing "Best Practices" (recruiting, staffing, planning, training, etc.). Many business owners and entrepreneurs may appreciate gaining a better understanding of benefits, services and missions of the Small Business Development Center (SBDC), the Wyoming Business Council (WBC) and other governmental agencies. Guest speakers including University Business Professors, and archived MBA program lectures or Society for Human Resources Management (SHRM) training might be appropriate resources for the network, as well.**

Need #4 - Knowledge Concerning Competitive Compensation and Benefits -

Most technology companies need to become aware of their competitive position with regard to employee compensation and benefits. They need to understand what comparative survey information is available and how to access that information. Local employers need to be encouraged to participate in confidential surveys. Employers also need to understand actual cost-of-living differences (secured through LEDC website) and financial advantages associated with living and working in Laramie. Such information can be invaluable when negotiating or explaining employment offers.

Pathway to Solution

- **Encourage organizations like the HR Roundtable to become more involved in creating and communicating competitive compensation and employee benefit survey data, while providing for a high degree of confidentiality for participants.**
- **Investigate and resolve reasons why a high percentage of technology companies avoid participation in local surveys.**

Need #5 - Small Employer Cost Competitive Access to Healthcare Insurance Plans -

At this point in time, Healthcare Reform continues to be a highly debated topic shrouded in frustration with our current options and uncertainty with the future. Regardless, small employers need to be provided with greater choice as it relates to healthcare plan accessibility, design and cost. Employers also need to understand the competitive implications of various employer-employee cost sharing structures.

Pathway to Solution

- **Work with employers, insurance carriers (i.e., United Healthcare), HR outsourcing firms (i.e., Insperity) and the government in eliminating small employer barriers to providing healthcare insurance under similar arrangements afforded larger employers and groups.**
- **Advocate for expanded small technology employer pooling options.**

Need #6 – Small Employer Workforce Stabilization -

Large work schedule fluctuations tend to create both marketing and operational problems for technology companies and undermine workforce security and need for economic stability. Such forces work to hinder the creation of regular full-time employment, the much preferred classification among technology and professional employees.

Pathway to Solution

- **Work particularly with Laramie Engineering and Environmental companies to create a vehicle for subcontracting work or people among each other.**
- **This need requires additional research and attention.**

Need #7 - Explore the Feasibility of Vocational Skills Training -

This need is primarily the result of several technology employers in printing, construction and manufacturing expressing concern about the diminishing number of qualified employment candidates in construction, industrial and printing trades. There is a general feeling that the academic community is geared to accommodating careers requiring four-year college degrees.

Pathway to Solution

- **Work with Laramie Economic Development and the academic community to determine the feasibility of developing vocational training which corresponds to technology company needs in the Laramie area.**
- **Create or augment a conduit for providing the academic community with business and industry input concerning skills training and other curricula requirements for vocational training.**
- **This need requires additional research and attention.**

Need #8 - Relay SNAPIT Municipal and Community Service Assessments to Responsible Entities -

Most of the feedback received regarding assessments and suggestions pertaining to municipal and community services in Laramie fall beyond the purview of the SNAPIT Partnership. Technology company evaluations of strengths and weaknesses pertaining to Laramie as a place to do business, or community barriers to growth, require consideration by other entities that have appropriate planning, funding, and implementation authority and resources.

Pathway to Solution

- **In accordance with guidance from LEDC, distribute copies of this report to community contacts and entities deemed appropriate in collaborating on initiatives pertaining to community visioning and master planning.**

CONCLUDING COMMENTS

This report represents the concluding commitment made under the Industries Partnership Solutions Grant (IPS), which was sponsored through the Laramie Economic Development Corporation, and which expires effective June 30, 2012.

In accordance with that Industry Partnership Solutions Grant Proposal, SNAPIT's major focus has dealt with identifying common technology workforce issues and needs with the intent of ultimately exploring and implementing solutions that benefit the Laramie technology sector.

In most instances, the solutions identified in this report should be viewed as broadly defined remedial initiatives. As indicated in our IPS Proposal, "These ideas and suggestions are intended to be further explored and expanded upon during the second stage of the partnership." Then, the most effective solutions will be developed into a work plan to be implemented in order to mitigate the major workforce issues identified.

Appendix A

Workforce Challenges/Significant Causes/Best Realistic Solutions
(Technology Company Management Opinions)

Business Category: ENGINEERING & ENVIRONMENTAL CONSULTING

Most Difficult Workforce Challenge:
We have problems finding qualified, experienced professionals in the area who have two or more years of experience....Also, finding experienced CAD technicians who are not overqualified (earning higher than competitive compensation).

Most Significant Cause of Workforce Challenge:
CAD is generally not something taught in school. Most people learn on the job. There are Professional Software Developers that conduct training sessions (i.e., Software Manufacturing Auto Desk).

Best Realistic Solution to Workforce Challenge:
If enough companies have a need, pool resources together to bring a training program to Laramie. Possibly the University could sponsor the program.

Most Difficult Workforce Challenge:
We can't hire experienced engineering talent. Since we're a small company, it's difficult to find people who are willing to do new tasks and take on responsibilities beyond the more traditional scope of the job. This might be fine in larger companies where the volume of work is sufficient to have a narrow focus, but in small companies, everyone needs to be able to wear many hats.

Most Significant Cause of Workforce Challenge:
The cause of the narrow focus problem is more of an attitude thing. We either have to hire Engineers from other companies or bring them in from outside the area.

Best Realistic Solution to Workforce Challenge:
Try to pick up in the interview process whether the person is willing to do what's necessary to get the job done, as opposed to having a "not my job" attitude. We also try to support new assignments with specific training.

Most Difficult Workforce Challenge:
Recruiting qualified people with the goal of developing a long-term relationship. There are two challenges. The first applies to entry level employees. There are work ethic issues in many cases – questions of loyalty to the company, as well as how their behavior affects others (absence reporting deficiencies, etc.). The second applies to the competition that exists for experienced people in this area.

Most Significant Cause of Workforce Challenge:
Most good, solid, and qualified candidates are already settled in where they are located or employed, so we have to do more recruiting outside the area. The problem is in doing so. If the good ones come with you, it may only be temporary. The marginally experienced employees are the ones that actively float around from area to area.

Best Realistic Solution to Workforce Challenge:
This is the tough question. The solution lies in the fact that we have quite a few companies in Laramie competing for the same business in this region – all seeking the same types and caliber of technical people. There is more demand in this area than supply.

Most Difficult Workforce Challenge:
It's really difficult to get qualified candidates and retain them when you do get them. Project Managers are a particular problem.

Most Significant Cause of Workforce Challenge:
We don't ask the right questions. Our interview process needs improvement. We end up hiring people based on our feelings (rather than their qualifications and fit). We don't get to know what the candidate's skills and abilities are. We rely too much on word of mouth references, which aren't all that good.

Best Realistic Solution to Workforce Challenge:
We've tried to create our own tests for writing and other skills.

Most Difficult Workforce Challenge:
Hiring mid-level Project Engineers and Group Leaders – We can find staff, but not as well as we can when we look in Fort Collins.

Most Significant Cause of Workforce Challenge:
There are not that many job opportunities here (in Laramie) for Project Engineers. We are normally looking for a combination of IT and Engineering skills.

Best Realistic Solution to Workforce Challenge:
We might have to do more contract work with Project Engineers outside this location. Our best source of (junior level) Project Engineers has been interns.

Most Difficult Workforce Challenge:
The cost of Healthcare benefits for employees. The company pays the full premium for employees and dependents. In an attempt to lower premiums, the company will pay employees higher salaries, if they take their spouses coverage (assuming the spouse is employed.) Presently, the company is paying an average of almost $25,000 in premiums per year per covered employee, under an age-based premium structure.

Most Significant Cause of Workforce Challenge:
The politicians – They don't want to do anything about reducing the cost of coverage.

Best Realistic Solution to Workforce Challenge:
Allow small business to get coverage under the State of Wyoming Plan. The company has looked at the Chamber of Commerce Plan, but feels it does not provide any cost advantages.

Most Difficult Workforce Challenge:
Finding qualified and experienced technical people. We tend to look at entry level candidates for hiring, because they are the easiest to hire (even if they are not exactly what we prefer).

Most Significant Cause of Workforce Challenge:
As a company, we prefer to grow our own technical people and mold them to fit our needs. Unfortunately, this leads to the perception that our ability to grow is limited.

Best Realistic Solution to Workforce Challenge:
No suggestions given.

Most Difficult Workforce Challenge:
We haven't experienced a major workforce challenge.

Most Significant Cause of Workforce Challenge:
Not Applicable.

Best Realistic Solution to Workforce Challenge:
Not Applicable.

Business Category: MANUFACTURING/REPAIR/CONSTRUCTION

Most Difficult Workforce Challenge:
Lack of talent at all technical levels – Not regarding technical knowledge, but with reference to work ethic and understanding of how business operates under a Capitalistic economic system. The generations coming out of college possess unrealistic expectations. (They need to understand that they need to first produce value before they can receive the benefits from that produced value.)

Most Significant Cause of Workforce Challenge:
Professors and instructors don't properly understand Capitalism. They may even tend to undermine it. How can you teach something you don't understand or can't accept?

Best Realistic Solution to Workforce Challenge:
Require technical people to take courses that focus on the free enterprise system.

Most Difficult Workforce Challenge:
Retaining Plant Operators.

Most Significant Cause of Workforce Challenge:
It's difficult to retain people because of our non-traditional work schedules, the location of our plant (quite isolated) and the fact that we primarily attract a young workforce. Work schedules are structured to accommodate travel and rest at home. Our location is determined by the location of the work. It's typically work that attracts a young, single workforce.

Best Realistic Solution to Workforce Challenge:
We haven't found a best solution.

Most Difficult Workforce Challenge:
Recruiting good trades and technical people – Most don't have the attention to detail that we need.

Most Significant Cause of Workforce Challenge:
There are fewer people going into the trades. There seems to be a lack of motivation on the part of those who do.

Best Realistic Solution to Workforce Challenge:
I generally look for young people with a good work ethic, and then try to grow and mold them. A lot of the older guys tend to want to do things their way, instead of listening to the way things should be done.

Most Difficult Workforce Challenge:
Hiring both experienced Business and Engineering professionals. Entry level candidates are relatively plentiful and easy to get.

Most Significant Cause of Workforce Challenge:
Laramie can be a hard place to live due to its weather. It's a small and relatively modest city for shopping and social outlets – not necessarily attractive to many female spouses. The tax base is low, which impacts the city's ability to build its infrastructure on its own.

Best Realistic Solution to Workforce Challenge:
Just stay persistent with your recruiting efforts and bulldog your way through until you find someone who meets your needs. We try to stay regional in our recruiting efforts, but also must consider a broader recruiting area as well.

Most Difficult Workforce Challenge:
Recruiting new experienced employees – We generally have no problem getting entry level people.

Most Significant Cause of Workforce Challenge:
Our company is still emerging, and therefore it's difficult to compete with other industries and more established or mature companies.

Best Realistic Solution to Workforce Challenge:
When we find a person who fits our needs, we compensate the person to the extent we must in order to get him or her. We end up reallocating our budget accordingly.

Most Difficult Workforce Challenge:
Finding employees who have technical (mechanical) skills and also interpersonal skills for dealing with clients.

Most Significant Cause of Workforce Challenge:
Typically, technical skills for the work out workforce performs are not as valued as finding someone with good soft-skills.

Best Realistic Solution to Workforce Challenge:
We hire people with good soft-skills and train them in the easier technical skills.

Business Category: IT SYSTEMS/SOFTWARE DEVELOPMENT

Most Difficult Workforce Challenge:
This company has a concentration of technical knowledge and skills, but is relatively weak in administrative, financial and sales skills and experience. We hire the majority of our employees directly out of school or out of their intern programs, and that seems to work fine for us.

At times we'll get projects requiring a very unique set of technical skills (i.e., Digital Artist for Virtual Reality). In those cases we are forced to hire employees or contractors from outside the area, which normally takes more time and effort.

Most Significant Cause of Workforce Challenge:
The four major stakeholders in the company are all technical people. We have not given enough attention to the importance of acquiring experienced skills in the administrative/financial/sales area. We did try bringing interns into some of those positions, but it was apparent that they didn't have the exposure or depth of practical knowledge that we need.

Best Realistic Solution to Workforce Challenge:
Recruit outside of the area to get the experience you need. This includes recruiting for technical people with unique skills we need. We'll retain contractors and extend employment offers to the good ones (like an extended probationary period).

Most Difficult Workforce Challenge:
Hiring a good number of people who turn out to be inflexible with regard to the work they will perform or the hours they will work, or just a poor fit for the job. This creates the need to periodically purge the workforce in economically advantageous times, when sales are low. At that time, you get rid of your worse people. (Going through such purge cycles can affect the company's reputation in the community, which makes it even more difficult to recruit good people.)

Most Significant Cause of Workforce Challenge:
Normally, in tight labor markets, you're forced to drop your preferred hiring standards.

Best Realistic Solution to Workforce Challenge:
We haven't found a good solution.

Most Difficult Workforce Challenge:
Finding leadership in technical areas – We don't have software leaders in this community. We need leaders, who can talk strategically, but also communicate with Software Engineers.

Most Significant Cause of Workforce Challenge:
The infrastructure for achieving an adequate supply of technical leadership isn't here yet. As we grow as a technical community, it may exist in 10 years or so. Right now, we can't support the leadership needs in this community.

Best Realistic Solution to Workforce Challenge:
Grow the infrastructure by bringing in the talent needed from outside the area, or grow our own talent. In many cases, bringing the talent in from outside, doesn't take as long as growing our own.

Most Difficult Workforce Challenge:
Recruiting experienced Software Developers – We hire a lot of candidates right out of school with great potential, but not much experience.

Most Significant Cause of Workforce Challenge:
There are not many Software Developers in this area. I'm speaking of experienced people, not the number of software firms. The supply of people is short in comparison to the demand.

Best Realistic Solution to Workforce Challenge:
Expand our search outside the area.

Most Difficult Workforce Challenge:
We have a limited applicant pool with the knowledge of our specific software. Consequently, we have to do a considerable amount of training.

Managing people while they are working off-site can also be challenging.

Most Significant Cause of Workforce Challenge:
Our software is so highly specialized.

The physical distance between our clients and our company affects our ability to manage people.

Best Realistic Solution to Workforce Challenge:
Prompt the government to provide conductivity with improved infrastructure and internet reliability.

Make better use of alternatives to travel (using Fed Ex, video conferencing, server location).

Business Category: SCIENTIFIC-TECHNOLOGICAL RESEARCH/ANALYTICS

Most Difficult Workforce Challenge:
Recruiting people who are qualified in our technology.

Being able to attract and retain employees with benefits like health insurance.

Most Significant Cause of Workforce Challenge:
The technical knowledge (reference to EMATS – signal processing) is somewhat unique and not taught at many universities.

Healthcare insurance is cost prohibitive, particularly for a start-up company. (Investigated the Chamber of Commerce Plan.)

Best Realistic Solution to Workforce Challenge:
We connected with a consultant who holds patents on EMATS – signal processing. We're looking at more recruiting activity at Iowa State, which teaches technology that matches our needs.

Most Difficult Workforce Challenge:
Hiring people with requisite qualifications in Composite Materials and Mechanical Engineering – We normally look for people with at least 3-5 years of experience.

Most Significant Cause of Workforce Challenge:
There is just a very small market for the requisite skills we need.

Best Realistic Solution to Workforce Challenge:
We opened an office in Seattle – to tap into the Boeing market.

Most Difficult Workforce Challenge:
Recruiting and/or developing people who can transition a product from Lab to commercial success. People who understand the considerations that need to be addressed in order to effectively get a product into the market.

Trailing spouses can also be a problem, particularly when that person is looking for employment in this area too.

Most Significant Cause of Workforce Challenge:
There is a lack of experience and training resources pertaining to "commercialization" for technical people. Based on where current employees are in their careers, they are not sufficiently exposed (or not that interested) in the end game of their work. They're really more interested in the technology than the marketing. Most technical people don't know how to perform a marketing analysis or a business analysis.

Best Realistic Solution to Workforce Challenge:
It's a cultural change thing. We need to continuously get them thinking about the end game – how are we going to market the product? We have to help them define the commercial results targeted and then help them develop set-back plans.

With regard to trailing spouses, maybe we have to research more opportunities to telecommute or work in virtual business environments. We should look for less of a reliance on traditional work environments.

Most Difficult Workforce Challenge:
Finding qualified candidates with working knowledge of composites, aerodynamics and aero-elastics.

Most Significant Cause of Workforce Challenge:
We have unique knowledge specifications.

Best Realistic Solution to Workforce Challenge:
So far, we've failed to come up with a good realistic solution. We rely on Dave Walrath at the University, and all its resources to a greater extent than we normally should.

Business Category: GRAPHIC DESIGN (WEB/PRINT)

Most Difficult Workforce Challenge:
Pay is a major issue. There is easy entry into this business. I can't afford pay structures that are more competitive outside of Laramie.

Most Significant Cause of Workforce Challenge:
Laramie needs to grow to support larger runs and more orders. Many problems can be solved with more business volume.

Best Realistic Solution to Workforce Challenge:
I've decided to use more interns from the University. Interns have the basic knowledge and possibly skill levels to do the required work.

Most Difficult Workforce Challenge:
Contractor recruiting is a challenge. Trailing spouses is another difficult challenge.

Most Significant Cause of Workforce Challenge:
The people you would like to retain are not always available when you need them. Some have regular employment elsewhere.

Trailing spouse problems are caused by our small community. There are not that many opportunities and a rather narrow range of traditional career paths that exist in larger metropolitan areas.

Best Realistic Solution to Workforce Challenge:
Possibly organizing a trailing spouses support group that is interested in exploring opportunities for its members.

Most Difficult Workforce Challenge:
Recruiting good, experienced Pressmen.

Most Significant Cause of Workforce Challenge:
Pressmen do not seem to want to live in Laramie, because there are insufficient good Pressmen in this city. Many Pressmen learned their trade when printing was an art. Today, there seems to be a higher need for repeatability.

Best Realistic Solution to Workforce Challenge:
We recruit all over the country, but we normally end up training our own.

Most Difficult Workforce Challenge:
Laramie has a lack of an available workforce above college age. Most of my workforce is in school or part of the transient work force. I would prefer to have some more of a mature, stable workforce that wants to work full-time.

Most Significant Cause of Workforce Challenge:
We offer typical, part-time work that most college students are looking for. We hire the kind of people that are typical in our business. That's who applies, and therefore, that's what I hire.

Best Realistic Solution to Workforce Challenge:
We really don't have a solution.

Business Category: NATURAL RESOURCES/CONSERVATION

Most Difficult Workforce Challenge:
Workforce scheduling due to variations in business – It is not feasible to hire additional people on a project basis. Our business levels are not highly predictable.

Most Significant Cause of Workforce Challenge:
Most causes of business variation are outside the company's control. We deal with assignments that cross many disciplines (i.e., zoology/physiology, climate change, water quality, wild life impact). It would be difficult to bring in any temporary staff or even contractors that could immediately hit the ground running, without giving people more training than it's worth.

Best Realistic Solution to Workforce Challenge:
We tend to staff lean and cover heavy workload periods by working more hours than normal. We have occasionally borrowed technical people from other firms, but that is not a usual practice or always a wise approach. One of the good things about our business is that deadlines are somewhat open-ended.

Most Difficult Workforce Challenge:
Recruiting professional staff can be a real challenge. We have brought in candidates from Texas, Arizona, Colorado, Utah, North Dakota and Illinois. There are not many people with the credentials we prefer in this area.

Most Significant Cause of Workforce Challenge:
We normally like to get people with a Master's degree in Biology or Wild Life Management, which narrows the field somewhat. There are people who don't care for our location – particularly the seasonal changes.

Best Realistic Solution to Workforce Challenge:
The most realistic solution seems to be expanding our recruiting into areas that have people with the credentials we prefer. We use Texas A&M recruiting sites to a considerable extent. Texas A&M has a broad reach into our industry.

Most Difficult Workforce Challenge:
I would like to get enough workload to get to at least a full-time level.

Most Significant Cause of Workforce Challenge:
Inconsistency in workload.

Best Realistic Solution to Workforce Challenge:

Work to increase my revenue and just put in the time it takes to cover variations in workload. I will occasionally work on projects for other companies in this industry.

Appendix B
Educational Credentials & Training Issues

Business Category: ENGINEERING & ENVIRONMENTAL CONSULTING

Required Technical Education	OJT * Training Provided	Most Beneficial Training
BS in Civil Engineering, or Environmental Engineering, or other technical disciplines (have hired Electrical Engineers).	CAD training. Company Policies & Culture Project Management. (* On-the Job)	Project Management that includes Contracts, Scheduling, Planning, Budgeting and Operations for invoicing. A course in Business Processes.
Business or technical degree –	No formal training.	Mapping (ARC view).
For Management only.		Auto-CAD Software training – need to schedule courses on weekends, when employees are available.
For Engineers, a BS in Civil or Structural Engineering.	Comprehensive training as dictated by assignment -	There are sufficient professional organizations that provide classes to meet our needs
For technicians, CAD courses, or equivalent including Intern training.	Either provided internally or through outside sources.	(ACE, etc.) Many times, UW or LCCC sponsor those classes.
BS in Civil Engineering, most of the time.	Safety & Health. Specialized training based on assignments and past experience.	Training needs assessed on individual basis. May not be justification for course or program.
Some type of Bachelor degree, except for Field Sales.	Safety & Health – normally our 100 day plan helps identify individual needs.	Understanding computers. Project Management skills (PSMJ). Business Analysis and Problem Solving skills.
MS in Civil Engineering (prefer). BS in Geology and Chemical Engineering.	Project Manager responsible for providing OJT to lesser experienced engineers.	We try to take advantage of any training program offered through Workforce Services.
BS in Mechanical or Civil Engineering.	Individually developed based on skill and experience.	Budgeting, Financial Accounting, Operational Accounting.
BS in Geology or Wild Life Management or Reclamation.	Reclamation Weed & Plant Training, (normally UW). OSHA & Hazwhopper Training.	Project Management – the analytical side (i.e., Writing Proposals, Budgeting,

		Project Set-up, Client Communications – all process steps).

Business Category: MANUFACTURING/REPAIR/CONSTRUCTION

Required Technical Education	OJT Training Provided	Most Beneficial Training
Two year Technical School degree or Military training. Must be able to understand Prints, Schematics, and Specifications	Not hired anyone we had to train.	Need Electrical Technician courses. Universities and colleges concentrate too much on software design, and not enough on hardware design.
Required Technical Education	**OJT Training Provided**	**Most Beneficial Training**
High school graduate.	Safety training and training on Crystallization.	Leadership courses.
BS in Mechanical, Software, or Chemical Engineering. We look for a Chemistry degree for our sales people.	ISO -9000 prescribed training. Laser Safety training. Common New employee Indoctrination.	Anything I would expect the University to provide is pretty much already a part of their degree program. Specialized software, Optics or Instrumentation training is provided through the product manufacturer.
High school graduate – prefer Some Community College.	DVD's on "How Houses Work" Also train in "How to Work with Insulated Foam" and "How to Hang Trusses."	Bring back Construction Technology courses at LCCC.
For Engineers and Professionals, BS in Engineering, but prefer MS in Engineering. For technical level, prefer some college for understanding of computers, software and project discipline.	Possibly some training for Technicians based on assignments and experience.	Possibly Six Sigma. Understood that the school needs to have sufficient demand to be feasible.
Some college or equivalent Experience suggesting the person has discipline to handle responsibility.	Pesticide Safety – Product of Dept. of Agriculture for UW and Northern Colorado.	Soft skills, such as Crew Cohesion. Forestry courses.

Business Category: IT SYSTEMS/SOFTWARE DEVELOPMENT

Required Technical Education	OJT Training Provided	Most Beneficial Training
BS in Computer Science or Engineering, Systems Administration, Chemical Engineering or Chemistry.	Company processes for validating and working with data bases.	We use LCCC to train people in Excel and Advanced Data Management techniques and Access.
Certificates in fields of their Specialties (i.e., Standard, Microsoft, Cisco, CompT).	Meditech software and AllScripts training. We send people to Boston for Training.	LCCC offers training for technical certifications we need.
No minimal educational standards. Hire mostly Computer Technicians. Interest more important – Ask, "At what age did you make your first computer?" Look for natural ability.	Assign new Computer Tech to experienced one. - Prefer no previous experience - Want to train the company's way of doing things.	Prefer to train our employees ourselves.
BS in Computer Science. Prefer Master degree. Have one Ph.D.	Consists of hands-on project work with a mentor.	We get a good assessment of talent at UW, and pretty much know each candidate's talents. New hires are sent to big industry conferences.

Required Technical Education	OJT Training Provided	Most Beneficial Training
College degree – field or specialty doesn't matter – Discipline to get the degree does matter.	Assign new hire to a mentor (Project Mgr). Work on real customer issues. May not have exact skills – we look for high aptitude	University does good in turning out with good problem solving skills. Leadership, like salesmanship and entrepreneurship is in the person's DNA.

Business Category: SCIENTIFIC-TECHNOLOGICAL RESEARCH/ANALYTICS

Required Technical Education	OJT Training Provided	Most Beneficial Training
BS in Mechanical Engineering, or equivalent. Ability to write user-friendly, error-free code.	Some software development.	Non-destructive testing and evaluation.
No need for a degree.	Wind energy, composite characteristics, aero-elastics, computer simulations and math modeling.	Theoretical models tied to engineering devices. Work planning, such as normally covered in Sr. Design courses.
Must have Engineering degree	Send new hire to 1-2 week	Wouldn't consider computer

(Software, Mechanical, Materials Science).	seminars on certain Engineering software. Training grants through Workforce Services.	science training through UW. Seems to be lack of commitment to good program. Follow own preferences. We discussed this with them in the past.
Typically Ph.D. for Lead Researcher. Research Engineer, Chemical Engineer, Material Science or Bio-Science degree. For Lab Tech, typically Associate Degree or equivalency.	Normally training associated with commercialization.	Product commercialization. For Government contracting courses.

Business Category: GRAPHIC DESIGN (WEB/PRINT)

Required Technical Education	OJT Training Provided	Most Beneficial Training
College degree in any field. Must be computer proficient.	Provide training in Adobe, Photo Shop, Illustrator, etc.	About 2 years ago, UW dropped several extended training courses in Adobe and Microsoft. LCCC filled the gap somewhat, but it would be good to bring some UW courses back.
Look for natural ability more than formal education.	Set person up with Lynda.com And engage them to learn, based on project at hand.	I would short-cut the schools and go directly to Ruben or Mona Gamboa, who have a direct pipeline into the University for training.
Prefer an old Stripper, who likes computers. People with Graphic Arts degrees don't always work out.	We train in pre-press work. Assign them to experienced Pressmen for shadowing. We can tell within 3 months if the person will be any good.	Problem analysis and solving skills. Train in the business of printing and printing processes. Seriously question if Graphic Arts should be in the Art Department of UW. Some universities put it in the School of Business.
Required Technical Education	**OJT Training Provided**	**Most Beneficial Training**
For Web Master, some college experience with Photo Shop.	Will train in Photo Shop if need be.	I appreciate the internships that can be set up at UW, but also think UW should set up courses to help business research issues (example, what it takes to implement EDI. All real life

		experience that could augment course study.

Business Category: NATURAL RESOURCES/CONSERVATION

Required Technical Education	OJT Training Provided	Most Beneficial Training
MS or MA level degree in related field.	Sometimes statistical or GIS software. Possibly, government regulations or legislation.	All new hires have been UW grads. School of Environment and Natural Resources. The curricula complies well with our needs.
Should be proficient in plant Identification.	Data collection. We follow Corps of Engineers standards.	No suggestions.
Prefer MS in Biology or Wild Life Management.	ARC – GIS Mapping. Hand-held computers. Send employees for Wetland Management –related certification. Train in some software.	Fish and Wild Life puts on some training in endangered species that is good.

SECTION I COVER SHEET

1. PROJECT TITLE: Cirrus Sky Technology Park

2. APPLICANT INFORMATION

Applicant (City, Town, County, JPB, Tribe):	City of Laramie
Responsible Elected Official:	Scott Mullner, Mayor
Mailing Address:	PO Box C Laramie, WY 82073
Local Contact:	Jodi Guerin
Position:	Grant Analyst
Mailing Address:	PO Box C Laramie, WY 82073
Phone:	307-721-5201
Email:	jguerin@cityoflaramie.org

3. PROJECT ADMINISTRATION CONTACT

Organization Name:	City of Laramie
Contact Person:	Rich Elliott
Mailing Address:	PO Box C Laramie, WY 82073
Phone:	307-721-5241
Email:	RElliott@cityoflaramie.org

4. TYPE OF PROJECT *Briefly* describe applicable project type.

	Infrastructure Type	***Brief* Description**
√	**Transportation**	This project would extend 22nd St. and 30th St. north of town to the site and develop "Asphalt" Lane between the two.
☐	**Building**	
√	**Water or Sewer**	Water and sewer infrastructure would be installed to create shovel ready lots.
☐	**Educational Development**	
√	**Other**	Data fiber conduit would be installed with underground utilities to accommodate installation for business use.

5. PROJECT COSTS Indicate minimum necessary total public project infrastructure costs.

a. Amount of **loan** requested:	
b. Amount of **grant** requested:	$5,466,330.70
c. Total local contribution (match and ineligible project costs):	$1,963,800.71
TOTAL Project Cost (a+b+c):	$7,415,901.41

DECLARATION: I HERBY CERTIFY THAT THE INFORMATION GIVEN IN THIS APPLICATION TO THE WYOMING BUSINESS COUNCIL IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

Responsible (Elected) Official's Signature and Date: 8/31/12

Print or Type Name and Title: Scott Mullner, Mayor

SECTION II: PRELIMINARY REGIONAL COMMENTS AND CONCERNS

The Regional Director must provide an overview of the project and address any concerns he or she may have. If there are concerns, the applicant is urged to address those as soon as possible, before submitting the application. (Note, these comments are preliminary, and the Regional Director will have an opportunity to revise during the recommendation process.)

This grant represents more than a year of tireless work by the City of Laramie, The University of Wyoming (UW), and the Laramie Economic Development Corporation (LEDC). During this time, I have watched these three entities come together like never before to form a partnership that is unprecedented in Laramie's economic development history. The reasons for such a partnership represent a convergence of two primary concerns: the lost opportunities in data center recruiting and the continued cluster of technology-related companies that continue to emerge from and around technology at the University of Wyoming.

Laramie continues and will continue to be the technology center of Wyoming thanks to the success of the University of Wyoming. Thus, leveraging the University's world-class research with the economic development goals of the City of Laramie and LEDC (and the state) makes as much sense as any project the WBC has considered in its entire history; further, the project levels the playing field for the recruiting efforts of the LEDC with places like Cheyenne, Colorado Springs, and a variety of technology parks in Nebraska and Oregon, which have seen tens of millions of dollars in infrastructure in the last decade alone.

It goes without saying this grant is well written. In fact, it's one of the best grants I've seen during my time with the WBC. The City, LEDC, and UW have met weekly for months leading up to the grant deadline in order to ensure all concerns have been addressed.

The project's true complication lies in the dollar figure being requested--around $5.4 million. I have wrestled with this figure for the last year and have encouraged the City of Laramie and LEDC to refine the number. In my opinion, they have done a good job of cutting the figure back as far as they can and still have a marketable product. The reality is that Laramie has been severely restricted in it's ability to grow in most directions. So growing north (the location of this project) is one of the only viable solutions. Unfortunately, the costs in infrastructure related to this growth are significant, and although the City of Laramie is putting up $500,000 in cash for this project and donating another three-hundred thousand in related services, the ability for a community like Laramie, which has little in the way of natural resources, is quite limited.

There's just no other way of saying it: Laramie can't do this on it's own. It requires BRC assistance as much as any project ever has. The question really becomes not if this is a good project in which to put BRC dollars. That's hardly debatable. The question becomes does the State of Wyoming believe that the return to the taxpayers (in jobs, recruitment, diversification of the tax base, property tax and sales tax benefits, technology advancement, and growth of the University's ability to spin out tech-related companies) is worth the investment?

The preliminary numbers seem to indicate would. In my analysis of such benefits--namely, the tax benefits, lot sales, and recapture funds--the project would indicated a 21% internal rate of return over ten years to the taxpayers (local and state). After discussions with a national data center site selector, it appears as if this park would be fully absorbed in about 10-11 years and would results in a Net Present Value of benefits over $5 million. This conclusion is based on many assumptions (like lot sales and the continued pace of technology at the University of Wyoming), but it appears as if the benefits would be strong.

The removal of caps on the BRC is as much a philosophical question as a economic one. I leave the philosophical question to The Board of Directors. However, the economic question shouldn't give pause. The opportunities this project creates (some of which Laramie has already missed) are real, legitimate, and will be something The State of Wyoming can look back upon with great pride.

--
Thomas C. Johnson
Southeast Regional Director
1938 East Harney
Laramie, WY 82072
Wyoming Business Council
1-307-766-5357
Cell: 1-307-631-9275
Email: thomas.johnson@wyo.gov

Regional Director Signature

8/30/12
Date

SECTION III: PROJECT INFORMATION

1. PROJECT DESCRIPTION. Provide a description of the proposed project.

This project is part of a major economic development effort in Laramie and recognition that with more than 60 technology companies, Laramie has established a sizable and growing technology cluster. A strong regional synergy is developing between Laramie and Cheyenne –with the NCAR- Wyoming Supercomputing Center and the Microsoft data center placement in the Front Range Business Park –creating an attractive environment for data centers, technology businesses and research and development entities. This activity is energizing efforts in Laramie to capitalize on the assets stemming from the university community, including the Wyoming Technology Business Center and the growing number of patents being issued to University-developed technologies which are being placed through license into technology-related businesses. This provides a natural economic development focus on technology, including data centers, in a willing community. Together the communities of Laramie and Cheyenne are establishing a technology hub in southeastern Wyoming that is receiving growing attention from a growing number of businesses with technology and data management at their core.

At a larger scale, development of an important technology hub in southeastern Wyoming is reshaping the economic mosaic of the state. Just looking at major economic drivers we see that fossil energy development is paramount in northeastern Wyoming; northwestern Wyoming is dominated by tourism related to two major national parks –Yellowstone and Grand Teton; the central and western part of the state have major oil, natural gas and mineral extraction; and of course, the entire state has important agricultural components. This mosaic is robust and helps support the argument that economic diversification is occurring. Ten years ago, an impacting technology sector (including data centers) was only a dream – now it is a reality. This application will further that diversification effort.

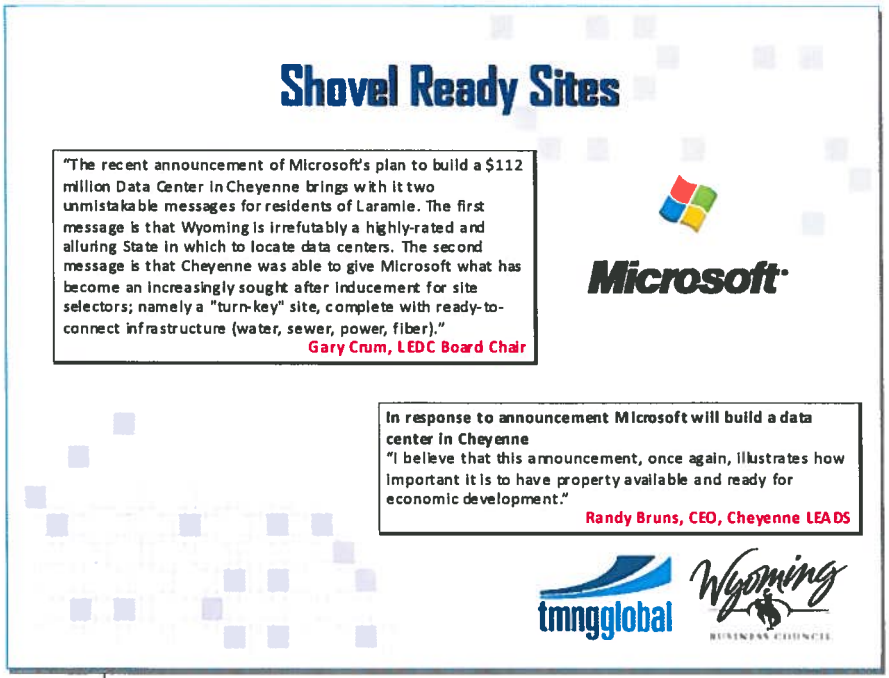
Approximately ten years ago, the Laramie Economic Development Corporation (LEDC) identified technology businesses as a primary focus of business development in Laramie. According to research performed by William Gern, Vice President for Research and Economic Development at the University of Wyoming, this sector had already begun to develop a "cluster" growing from nine (9) tech businesses in 1994 to more than 60 in 2012 with a current total of 469 employees in this sector. These businesses act like a cluster in terms of employees, information sharing, and some business to business contracting. (See the attached "SNAPIT" report)

Concurrent with this growing cluster has been an evolution in computing infrastructure that has focused on "cloud computing". This industry-wide change has

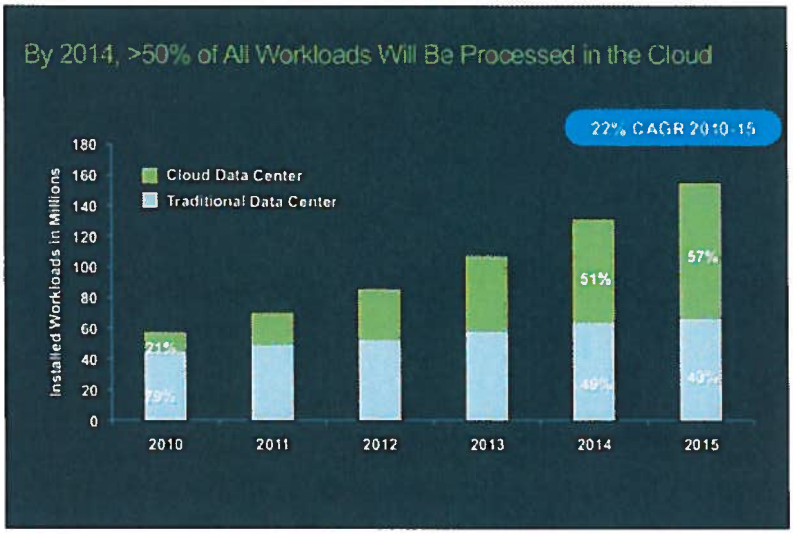
enabled the industry to lower operational costs and increase efficiency while providing higher service volume to their clients. Additionally, this virtualization allows for datacenters to locate away from a company's primary headquarters, and because of security and reliability, many companies actually prefer to be in remote locations.

In 2010 Verizon identified the area just slightly north of the Phase I site proposed by this grant for development. Company officials had identified this site as an ideal location due to the cool climate, relative land stability (from tectonic movement), access to an extremely robust electrical substation and the large amount of undeveloped land. At that time Verizon procured an option to purchase land in this area and the attached letter from the property owner's legal representative indicates continued willingness to support these efforts. The subsequent public announcement generated a high level of interest and as a result LEDC has fielded 38 separate inquiries from companies looking at Laramie as a relocation, expansion or start up location in the past four years. Most of these companies have not disclosed the amount of land required, but at least five require over 100 acres of land. More details about the outcome of these contacts is listed in the attached Technology Prospects Report.

Many of the inquiries Laramie has fielded from companies in this sector have indicated that the town has numerous desirable traits that make Laramie an appealing location, but our lack of shovel ready sites has been a hindrance. Most recently, the City of Laramie was in the running for the Microsoft data center that ultimately went to Cheyenne LEADS North Range Business Park, although in their communication with LEDC the company indicated that Laramie was the preferred site. Again, the lack of a shovel ready site in Laramie caused them to consider Cheyenne which further promoted southeastern Wyoming as a technology hub, but eliminated the Laramie site from consideration (see attached response from Microsoft regarding siting).



In March 2012, a study was contracted by the State of Wyoming Business Council with Joe Sharkey, (Vice President and Principal of TMNG Global) a telecommunications and data center industry expert, to identify the growth opportunity this sector presents for Wyoming. His findings were presented recently in a webinar where he discussed the potential growth in this industry in the upcoming 3-5 year time period. According to Sharkey, only 4% of companies are not planning for expansion, and of the 96% that are planning for growth, 38% are expecting to develop three or more cloud computing sites and 54% are 15,000 square ft. or more in size. In fact, by 2014, more than 50% of all work-load is anticipated to be processed in the Cloud. This explosive level of growth (see chart) also has required companies to look at where they can develop quickly and inexpensively to accommodate their needs. Data centers no longer need to locate near urban centers, and in fact are specifically looking for more rural and secure locations where land and power are inexpensive. This message is confirmed by other industry data regarding emerging trends (see attached articles on Datacenter trends).



Laramie fits these needs in a number of ways; first, there are large tracts of land located adjacent to a brand new Western Area Power Authority (WAPA) switchyard with four separate sources of power (see attached WAPA Diagram). This significantly reduces risk of power failure due to transmission line vulnerability. It also provides redundant power sources should a line fail or should more power be required. Laramie also is home to ten long haul and two regional fiber lines, the most of any location in Wyoming and perhaps the highest number west of the Mississippi according to Sharkey's analysis. Lack of tectonic movement in the area, cool temperatures and availability of educated University of Wyoming graduates also are enticing. Finally, the University of Wyoming and now the business climate in Laramie are producing technology businesses that impact the local economy.

Identification of Laramie as a highly desirable location for a data centers such as Verizon has created a high profile and "buzz" upon which the community intends to capitalize. Not unlike a company that finds itself in the middle of a marketing

opportunity, Laramie has a window of time to strike while there is attention and interest in the area as well as industry need. This grant will help fund an overall vision to create a major technology hub in southeastern Wyoming and will provide the resources to sufficiently prepare to accommodate a company that will be a game changer for the local economy. The proposed efforts follow well the recommendations laid out by Mr. Sharkey in his presentations (see Comments and Recommendations from the study below). This project will create shovel ready sites with development plans, power studies, and fiber plans as per his recommendations. So in Laramie specifically and southeastern Wyoming more generally, one can witness the WBC's goal of both organic growth of existing business and the attraction of new business.

Comments

- **Most social networks & cloud computing companies need to build new because they don't have existing facilities**
- **Established computing service companies find it more cost effective & quicker to build new than to upgrade older design buildings**
- **Data Centers Cluster in a State or Community**
- **Quincy, Moses Lake, Ephrata, Wenatchee, Yakima – Washington**
- **The Dallas, Bend, Prineville Oregon**
- **Indeed Cheyenne's competition on Microsoft was Prineville with 4 DCs**
- **NCAR, Verizon and now Microsoft selections will cause the data center industry to take a hard look at Wyoming**

Recommendations

- **Focus on attracting more common name data center builders – this will substantially increase visibility and interest**
- **Initially focus on high profile/high potential locations/communities for "shovel ready" site development**
- **Assist communities identify high probability sites**
- **Initial development plans**
- **Request (fund) power studies (ESAs)**
- **Develop Power construction time frame**
- **Develop infrastructure plans, costs & timing**
- **Develop local multi-path fiber network plans to interconnect to long haul routes**

The City of Laramie has made development of the technology sector a high priority and has contracted for a Concept and Development Plan of an area on the northern boundary of the City from the Laramie River to 45th Street, stretching north approximately 1.5 miles. This development plan will guide execution of the vision and combined with the marketing and revenue recapture plan will fuel growth in this area. The first phase of this project is contained in this grant with future phases to follow as detailed later in this grant.

To prepare for this development, staff have undertaken design work and easement acquisition to enable the installation of the infrastructure and the current property owner has moved forward on annexation of the property. Electrical studies planned for as part of this effort (and paid for by City match) will determine power availability so companies can accurately assess the infrastructure compatibility for their needs but because of the assessment done by Verizon it is acknowledged that there is enough

power available to accommodate construction and at least one "mega" data center. The City of Laramie has entered into a Memorandum of Understanding with the University of Wyoming for the purchase of a parcel of land in the first phase for a Research and Development Park and it appears that Western Research Institute is also preparing to move forward on new development plans soon.

With all of this in mind, the grant for Phase I of the Cirrus Sky Technology Park would fund the purchase of a parcel of land approximately 149 acres in size on the northern edge of the city limits between 15th and 30th Streets; develop the water, sewer and street infrastructure up both 22nd and 30th Streets; connected by "Asphalt Lane" (naming to follow annexation) on the north (see area map). It would also install the fiber conduit in the new rights of way to accommodate fiber lines required by any company locating in the area, and install power service for construction and initial use. The City is providing matching funds to assess the fiber routes and perform the required Rocky Mountain Power and WAPA power studies.

Budget Overview—Phase I

$2.3 Million—Land Costs
$3.43 Million—Construction Costs
$670,000—Architectural/Surveying
$1.03 Million—General/Management & Planning costs (part in-kind City contribution)

Total Project Cost $7,430,131.41
Total Combined Match $1,963,800.71
Total Grant Request $5,466,330.70

This configuration provides the "shovel ready" sites appropriate for small to medium sized data centers and technology-based organizations and sets up larger parcels of land to the north for a shortened development time due to the proximity to these improvements. This will allow for maximum flexibility when marketing the area and provides the infrastructure and information required by companies looking to build.

Future phases are identified in the attached land use and area maps and are intended to roll forward according to business demand. Phase IB would develop Asphalt Lane and 30th Streets to full city standards and would also include future land use changes and most likely, annexation and zoning. Phase II and III would extend water, sewer, surface water (storm), fiber conduit and road infrastructure along the corridors identified in the development plan. These phases could occur non-sequentially to accommodate business demand. Current costs are identified in the attached Phasing Maps but market forces will impact these estimates over time. The Recapture Plan funds are intended to help fund future phases and the City and LEDC are contemplating other taxing options that could provide funding.

Phase I also incorporates green space and a trail network that is part of the City's overall recreation master-plan design and the larger plan identifies areas for housing to create another live-work-play type of environment. The City has seen success with this model on the Turner Tract with new housing and recreation integrated into the office park area. Initially the City developed the Turner Tract Area Plan (see attached), which detailed the concept, development guidelines, financing and phases. After procuring a grant to fund the initial infrastructure, the area began to attract companies, housing developers and other synergistic entities, developing into a distinctly unique business park. This process is the model for Cirrus Sky Technology Park, with similar documents, but a different business focus.

Additionally, the Laramie Rivers Business Park is home to a number of businesses, two of which reside in Business Council grant funded buildings. The Laramie Greenbelt is connected into this business park specifically because Trihydro found that this amenity offered significant benefit to their employees and they worked to ensure the connection. Jack Bedessem, CEO of Trihydro said, "*When our company was looking for a new Laramie headquarters location, our number one criteria was finding a site that employees would be proud of and matched their lifestyle. The green belt and common area were the deciding factors in selecting our new location. Incorporating similar attributes and building-ready sites into the Cirrus Sky Technology Park will not only be an attraction for prospects, but will also enhance a business' ability to attract and retain the right employees. Hiring is generally easy, but attracting and retaining the right employees is critical to the success of every business. If done right, the Cirrus Sky Technology Park will be a strategic long term investment that will differentiate Laramie and Albany County, and greatly support diversification of Wyoming's economy. The best employees get the job done, and employees who are proud of their work environment help a company succeed. Following a similar model for this Technology Park area will fit nicely with overall community plans as the town expands.*"

Laramie has a history of making good use of State and Federal resources and has systematically pursued funds to develop the infrastructure necessary to build a strong economy and upgrade infrastructure to support business investment. A brief recap of projects include: the Basic Beginnings Daycare, the water/sewer line for the UW Convention Center, infrastructure at the Turner Tract, the Trihydro Building, and the Laramie Technology Building. The University has also pursued investment in the technology industry and the partnership that built the Wyoming Technology Business Center has provided a significant boost to this industry in the Laramie economy, turning out four technology businesses to date according to WTBC staff. Each of these projects is a building block in the foundation of a strong economy and this project will capitalize on these prior projects to improve the economy in Laramie.

Should this grant be awarded, the City will exercise the option to purchase the property that was entered into with the current property owner (see attached agreement). Then, according to the Contingency and Development agreement between the City and LEDC, the property will be developed and conveyed to Laramie Economic Development Corporation a Certified Economic Development Organization for implementation of the development plan, management and marketing.

The infrastructure for this first phase is a stand-alone plan that can facilitate the development of small, medium and large technology and data businesses. Infrastructure is sized and designed to integrate into the long-term plan for the area (see Phasing Maps and Detail). Future phases will move forward according to the needs and locations of the companies and will be funded by recapture money, grants and private investment. These future phases may not move forward in numerically sequential order. For instance, WRI is currently contemplating the development of a new facility that might require water, sewer and fiber lines. If they plan to develop on their existing site at the western edge of the Development Plan Area, efforts would focus on developing infrastructure to Phase III. If a Mega Data Center located on the land north of Phase I, infrastructure for Phase IB (full build out of "Asphalt Lane" and 30th Street) would become the priority. The Development Plan provides the design and cost estimation as the infrastructure integrates into existing City infrastructure. Additionally, future phases could be broken down into slightly smaller "sub" phases to accommodate business demand and funding constraints if necessary.

As the City and LEDC undertook this planning effort, the University of Wyoming revealed an interest in one of the parcels of land in the initial phase of the project which has resulted in the attached "MOU" between the University and the City. If the grant is awarded, the University plans to purchase a parcel of land approximately 23 acres in size in the Phase I area on which to develop a research and development technology campus for companies spinning out of the Wyoming Technology Business Center. This initial purchase is contemplated in the recapture agreement and would provide the first portion of revenue to leverage future development.

2. PUBLIC BENEFIT. Describe the public benefits of the proposed project including the importance of the project to the community and how it promotes economic development. (Please consult the WBC Regional Director for information on conducting an economic impact study for this project.)

Public benefit from this project is multi-faceted. The property acquisition was negotiated at a price that is 71% of the appraised value, providing an initial public value to the project of $596,000 (see attached Option to Purchase and Appraisal).

The project also creates four "build ready" sites ranging in size between 23 and 63 acres in this first phase, with one of these sites to be occupied shortly by the University Research and Development Park. The University site will provide the opportunity for technology businesses to purchase property in a condominium type environment and build the assets of their businesses as well as to provide property taxes back to the community.

Adjacent land owners are contributing a total value of $242,414 in donated rights of way and easements to allow for the installation of required infrastructure to the property (see attached ROW estimates). These easements and rights of way also will enable the extension of infrastructure to the north of town which will support the development of businesses in the tech park, and also will improve water pressure and flow to the neighborhood on the northwest part of town, which has been a major impediment to development in this area. The high cost of bringing wet infrastructure to this elevated bench has precluded development of this area by the private sector and virtually requires that this area can only be developed with public investment.

Future development of the fiber loops assessed as part of this project (paid for by City match) will provide feasibility and timeline information on three long-haul data lines running through the area. Assessments would be performed on Routes 1, 3 and 4 as prioritized with the feedback and assistance of Joe Sharkey and recommended in the Development Plan. This will position Laramie attractively by providing the information required by most data companies looking to locate in the area. The longer-term impact on local businesses will be the availability of these fiber loops to other local technology businesses as they are developed.

This project also will help improve the Laramie economy in several ways. The first is by continuing to grow a business sector that provides higher than average incomes, thereby increasing median incomes overall. The Adjusted Median Household Income Report currently ranks Laramie 18th from the bottom among 99 Wyoming communities. Albany County is third from the bottom among the 23 Counties, which is improved from the 2000 Census when Albany County was at the very bottom (see attached Wyoming AMHI Report).

The SNAPIT report estimates that the technology sector will add an additional 165 jobs over the next five years with an average salary of $65,000/year. In addition, according to RIMS II data (as evaluated in the attached Development Plan), Microsoft's decision to locate in another town results in a lost opportunity to Laramie that totals $5 million. This project would have generated property taxes to Albany County of $440,000 with an annual payroll of $2.2 million for the 58 jobs, and construction of the facility would have generated $1,053,000 in local sales taxes. This

business is considered a "medium" sized data center meaning that the range of economic impact for a company the size of the Verizon "mega" data center would be significantly larger.

Luckily, because Microsoft elected to locate in Cheyenne, Laramie can capitalize on the local synergy created by regional co-location and it is likely that other companies will continue to look at this area as a promising business location. This creates a very unique opportunity for Laramie to learn what companies like Microsoft require, evaluate the impact and incentivize other companies.

Diversifying the local economy to include new, growing businesses creates additional revenue to support community services provided by the City and County through sales and property taxes. The Wyoming Association of Municipalities conducted a survey to determine the cost of municipal services on a per person basis. The average across the communities surveyed was $2,252 and included all sources of revenue (Local, State and Federal) as well as expenses (enterprise and general fund). Laramie currently is at 64% of this State average, with only $1,453 available to provide services to the citizens.

Again, using Microsoft as a case study, the annual impact of a facility of this size in sales and property taxes is approximately $500,000 annually. This is reiterated by the Wyoming Business Council Sample Data Center Impact Report which estimates the potential tax impact of a 20 MW data center on State and Local Taxes. (See attached) In this example, the total tax return is estimated to be $19,716,243 over ten years (for construction and annual operations), making the case that the investment of State funded incentives can provide significant return to the taxpayers. A business of this type provides a significant positive impact in a community like Laramie with lower than average wages, sales, and property taxes which is why the community is willing to invest $500,000 of cash match in a project of this nature. The funds set aside for this purpose come from general fund revenues, which during a time of lean budgets is an indicator of local support.

Also, the adjoining property owners will be bound by a reimbursement agreement as their properties are developed. This agreement allows the City to recapture the cost of the portion of infrastructure that each adjoining property owner utilizes as they proceed with development and utilize it as part of the recapture funds to fuel additional phases of this project (this is detailed in the attached Chapter 15 of the City Unified Development Code). This also supports the expansion of infrastructure for local residential development in the planning area.

As this project provides additional diversity in the economy adding new types of businesses to widen our sales and property tax collections, it adds diversity to the job market and assists the University of Wyoming with recruitment. The University often finds it difficult to recruit quality faculty because there are few work opportunities for the highly skilled trailing spouses that often accompany them (see Wages in the SNAPIT report). Job creation diversity enhances recruiting ability for UW and this sector supports higher wages which are reinvested into the local economy.

3. PROJECT GOALS AND OBJECTIVES. Describe the goals of the project and identify indicators or measures to be used to determine at the conclusion of the project if goals were achieved and if the project is a success. The performance measures should focus on solid, measurable actions related to the project. Examples of indicators may be the amount of money leveraged (from other public or private sources), number of self-sufficient jobs created, number of business-ready lots created, etc.

The primary goal of this project is to provide Laramie a competitive advantage in growing and recruiting technology businesses by providing companies with the information and infrastructure required to select Laramie as a development site. The initial phase of this project will create '"build ready" sites for two to six technology and data center businesses and install infrastructure to support additional ancillary technology businesses, residential neighborhoods and add open space connections to our bike trail network.

Additionally, Laramie seeks to create an environment supportive of the technology industry, one that makes a statement about community intent to recruit and support this sector. The project provides space and an attractive environment for the University to create a technology campus for businesses further enhancing the "cluster" that has naturally begun to form in Laramie. The simple declaration that this project makes about the type of environment Laramie can offer to tech businesses will help recruitment at the University, in existing tech businesses as well as for companies new to town. As previously stated by Jack Bedessem of Trihydro, creating an environment that supports active lifestyles is key to the success of technology businesses.

Phase I of this project is also just a part of a much larger vision. The ultimate goal is to create a technology park on this northern flank of town with Western Research Institute as an anchor on the west, a University Research and Development facility on the east, room for ancillary technology and supply companies, data centers, housing and a trail network that will create a live/work/play environment. This combination provides synergy to the businesses as they co-locate, quality of life to the employees,

opportunity to the University of Wyoming and WRI and it improves the overall economy of Laramie. This truly is a game-changing opportunity for the community.

The Wyoming Technology Business Center and LEDC worked to support this project by conducting a case study of a community with correlating successes. Specifically, they looked at our region to find a community that was once a small town with one or two dominant industries that experienced a "game changing" turn of events. Then they looked at the community to determine what caused the change and how we might emulate it.

Looking at Loveland and Fort Collins, which share our history of being a small rural community dominated by the university and agriculture, we see many correlations. In the 60's Hewlett-Packard chose Loveland as a new headquarters. As detailed in the attached history of Hewlett-Packard, the spin off businesses and resulting growth in the local economy have created a technology hub that we can use to guide our efforts in this industry.

This project will diversify the local economy, while taking advantage of the strengths of our existing economic base (education). The experience on the Front Range causes us to believe that the enhancement of this sector will support the University in attracting faculty as well as students into the technology division, which will in turn support the businesses in the sector with graduates who can stay in Wyoming and be gainfully employed. This is a "win" on all fronts, increasing economic diversity, revenue generation, reducing the "brain-drain" of students and creating support for UW.

When a private company commits to locating on this site, we anticipate a significant company investment. Using calculations from the Development Plan and from State information about the Verizon project (both attached), the range of physical investment could be anywhere from $15 million for a small technology or data center up to $4 billion for a company the size of Verizon. As the State Tax Impact Analysis (attached) shows, this increase in business property significantly increases property taxes returned to the County and supports increased sales tax revenues.

Additionally, as exemplified by the Hewlett-Packard experience along the Front Range, the data center businesses will attract other ancillary businesses to support their activities resulting in additional jobs and revenues flowing in the community. This will also benefit existing businesses in the technology sector, bringing supplies and services closer and creating a deeper pool of technology employees in the area.

4. PROJECT NEED. Describe in sufficient detail the need for the project and why BRC funds are necessary. Include any other funding options which have been pursued for this project. Evidence of project need is demonstrated through a well-developed justification for public financing. The discussion should also address why other financing options could not be obtained or are not feasible and repercussions if funding is denied.

First and foremost, the trend with data centers is on a sharp upward trajectory. Most companies anticipate identifying and building multiple sites in the next 2-4 years. While companies in this industry will continue to grow and expand, the large growth currently underway began in about 2009 and the window of opportunity to participate in this industry requires that we respond quickly.

Joe Sharkey, Vice President of TMNG Global provided this assessment of opportunity in the data center industry when we inquired about his estimation of the "window of opportunity".

"Due to several recent significant factors and changes in mobile communications, computing systems designs, corporate computing strategies and cloud computing in general the data center industry has been experiencing an unprecedented shift from building upgrades or refitting to building new sites.

Starting in 2009 several social media companies and emerging, but extremely fast growing, cloud computing companies and many corporate or enterprise data center operators realized that using new technologies and building new facilities to better maintain the environment of the new technologies was less costly and usually quicker to accomplish than upgrading existing data center facilities. By mid 2010, companies like IBM, Amazon, Yahoo, Google, Facebook, Microsoft, Twitter, Dell, Cisco, HP and others were all looking at building between 3 and 8 new 20MW to 30MW data centers in a 3 to 5 year period. At one point we knew of about 25 large to very large data centers from this few companies that were in the initial and site planning stages. Most of these companies are now about half way through these building cycles with only a few now looking past 2014 or 2015 at possibly needing more sites. So we are currently about midway or "at the apex" of the currently know growth spurt.

As has been noted before site selection for these companies and many enterprise operators is a one shot opportunity. If power, fiber and infrastructure cannot be "guaranteed" in a given timeframe the opportunity is lost. Microsoft, for example, when looking in Wyoming indicated they had 5 sites to select and build in a 2+ year period and the site selection team did not have time to revisit a site or location if it was not shovel ready. They indicated that there were so many ready sites to choose from that a not yet ready site would not be considered for any of the pending facilities let alone for their next site. Even if a company is planning multiple sites a missed

opportunity for their most pressing site will often cause the location to be "off their list" for any of their sites. The ability to have a build ready location today is critically important the first time a site selection process occurs. Often even if improvements are made at a location the site selectors on a missed opportunity will not be going back."

This reality also coincides with the experience in Laramie with Microsoft and reinforces the need to move this project forward most expeditiously, while Laramie has the residual "buzz" from the Verizon selection and while there is still sufficient need in the industry.

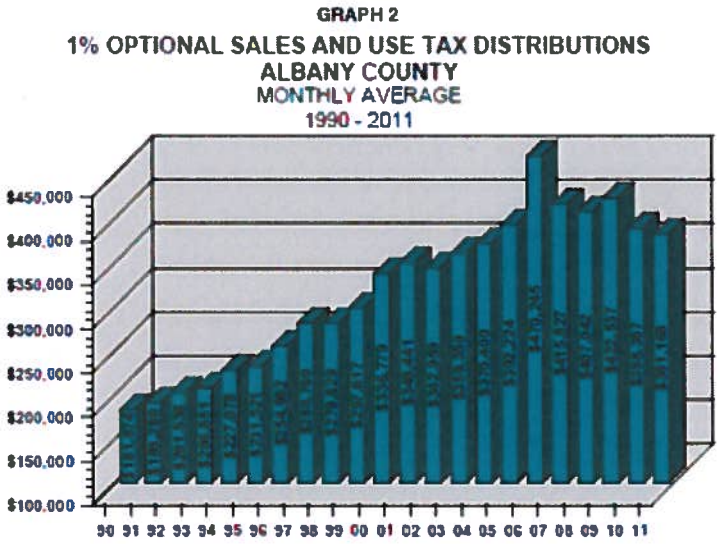
From a local standpoint, Laramie has good reason to work hard to improve the economy. The State of Wyoming has over the years developed methods of funding local government that rely heavily on mineral generated revenue. Albany County is without any significant mineral resources and this is reflected in local government funding, with Albany County ranked third from the bottom (see attached 2011 Cost of Maintaining County Government). Laramie median incomes ranked 18th from the bottom, in the lowest 20% in the State (see attached AMHI Report). This places the burden for municipal services more heavily on the shoulders of our local citizens than in other counties but without the salaries required to do so.

Despite low incomes, Albany County residents have consistently taxed themselves to provide quality of life amenities and public services. The leadership of LEDC has been instrumental in helping the community understand that quality of life is a critical factor for companies interested in locating or relocating to a community and the citizens have taken that to heart.

Specific Purpose Tax Funded Recreation Center in Laramie

Tax revenues have generally declined since their high point in 2007 as indicated in the chart from the Laramie Area Economic Indicators (below) report in part because of the national recession, and this has further intensified the need to improve our local economic opportunities.

GRAPH 2



It is important to note that despite these challenging economic times the City has elected to set aside money (over two budget cycles) from the General Fund Budget to provide a portion of the match on this grant. This $500,000 is not from another grant, it is money that could be used for any other budgetary purpose and makes a strong statement about how high this project ranks on the City's list of priorities.

A large data center or technology company would provide much needed property tax base and new jobs to help increase our median wage and local government funding. Both of these are critical to our local ability to reinvest in economic development as well as to provide an appropriate level of community maintenance and services for our citizens and the University of Wyoming.

A reaffirming indicator of the level of local need can be found on the Small Business Administration website located at http://www.sba.gov/content/understanding-hubzone-program. This page describes a nationally identified "HUBZone" for the purposes of directing support to areas that are economically distressed. The website describes the program as "Historically Underutilized Business Zones". In the attached "HUBZone" map you can see that most of Laramie qualifies as a HUBZone, with about half listed as a primary or secondary distressed area. Although this project does not seek benefits from this program, it is useful information to confirm the need for this project.

The City and LEDC also have evaluated the land in and around the community for this and other projects, and the Development Plan further evaluated the requirements of technology and data oriented companies to identify other potentially available sites. This is really the only site with appropriate electrical infrastructure and acreage located together. The Snowy Range Substation, located on site, is a very desirable asset because it eliminates the need for distribution lines of significant length and vulnerability. It also has four separate electrical supply sources, for maximum redundancy during power outages.

Few sites in the area have large acreage; the Airport Park and the Turner Tract are two currently available locations. The Airport Park is not desirable because of company buffer requirements and the restrictions of an "airport influence zone" on building height to accommodate the air service. The Turner Tract was designed and zoned as a live/work office environment and the requirements for building design and the proximity to residential property are not desirable for the industry. Other sites around town are primarily smaller, more isolated lots that would require infill development, which is also a departure from the goal of creating a campus to facilitate the synergy created by co-location.

The Laramie Economic Development Corporation maintains records of contacts by companies in the technology sector, their requirements and the ultimate outcome of their inquiry. We know that Microsoft eliminated Laramie from location possibilities because sites weren't sufficiently prepared with infrastructure. Also, through the work of Joe Sharkey, who conducted the power and telecommunications assessment for the State of Wyoming, we know that companies require certain infrastructure be available and ready for the site to be considered. While it is always possible that a company could chose Laramie without the investment on this site, we know that this becomes a serious handicap when trying to attract businesses and we don't believe we can wait if we are serious about our pursuit of this industry.

The University of Wyoming and the Wyoming Technology Business Center also have been supporters and partners in this endeavor for a number of reasons. According to Jo Chytka at UW Career Services, the University graduates approximately 25 students each year in computer sciences and about 60% leave town to find a job. Interestingly, most of the graduates prefer to stay in Wyoming or the region and additional opportunities should help with retention. Additionally, some technology employers in Laramie provide summer jobs and internships for UW students that often lead to full-time employment. With the need for more qualified employees in this industry, increased local job opportunities and the impact of a large data center coming to town will significantly impact the economics of Laramie and most likely the University.

According to Jon Benson, CEO of the Wyoming Technology Business Center, their facility is supporting 36 companies. In addition, there are twelve technology companies in residence in the Wyoming Technology Business Center. Four graduates of the Wyoming Technology Business Center reside in Laramie and employ approximately 95 people with an average salary of $65,000 per year resulting in significant economic impact in Laramie from these companies. As mentioned earlier, it is estimated that Laramie houses more than 60 technology-related businesses many of which have some association with the University of Wyoming and the University continues to spin out businesses carrying significant licensed UW technology. This

growth has caused technology companies outside of Wyoming to express interest in coming to Laramie to be part of the growing technology enterprise. In addition, as the University expresses itself as a major entity in Energy Sciences and Research, some companies are developing interest in locating near UW because of faculty with significant expertise in energy science. For these reasons, the University listed in its latest planning document a plan to develop a research park. As a state entity, UW has initiated the required Level I planning (part of the state-required three level process). As part of the Level I plan, UW is carefully considering the Cirrus Sky Technology Park as the site for this research park. Such a park will be very beneficial in meeting the economic goals of UW and providing a site for technology businesses which have benefited from the incubation services provided by WTBC as the company expands from its initial roots. It is a very logical and necessary, next step.

Additionally, because of the current lack of industry diversity in Laramie, many of the spouses of faculty and staff have difficulty finding adequate employment. This leads to difficulty in recruiting faculty at the University. A larger, more diverse economic base will help develop more opportunity for "trailing spouses" as well as qualified graduates. This same diversity also provides new opportunities for the entirety of our highly skilled and educated citizens as it supports recruiting for the University.

The Development Plan identifies potential sources of additional funding such as the federal EDA grant, and the WBC State Planning Grant. The City will continue to pursue these funds to develop phases beyond Phase I. If this grant through the Wyoming Business Council is approved, the Federal grant would allow for the use of BRC funds as part of the match to increase the size of the award, but it is most important that we are able to move quickly to complete this initial phase of the project.

5. REHABILITATION. Will the requested grant or loan fund the rehabilitation or expansion of existing infrastructure or facilities?

Yes √ No ☐

If "yes," explain.

This project will be an expansion of existing City infrastructure and has been designed to minimize cost and maximize impact. Water and sewer infrastructure in this area of town requires significant changes to provide adequate pressure on this up-gradient site. Once the ridge is crested, adequate water pressure can be provided to create fire-flow and supply business and residential needs. According to development plans for this area of town, the waterline will also be built to an "over-sized" capacity to accommodate the planned future growth of the area rather than just this 149 acre

site. The design also creates a necessary loop for the data fiber network by placing a conduit alongside the water and sewer pipe that allows for threading data lines according to business needs as they become evident, allowing for connection to numerous long-haul fiber lines.

The roads will also be extensions of 22nd and 30th Streets, connected with a new road currently called "Asphalt Lane" along the northern boundary. The electrical infrastructure has been designed to be located along this same corridor and will also accommodate the coaxial cable line from the local provider. Relocation of the electrical lines will move forward as companies purchase land in Phase I and will accommodate the required lot configuration.

Rights of way are being negotiated for the extension of water and sewer service with landowners adjacent to the project to create the most appropriate alignment for service. Additionally, as part of a greenway and open space initiative, land has been identified through the site that will connect with existing trails and current plans. (see attached map)

6. OWNERSHIP. Will the applicant own the improvements funded by this program?

Yes √ No ☐

If "no," then who will own the improvements?

The grant request includes funds required to purchase the initial parcel of land (estimated at approximately 149 acres) to be developed. This will enable the City and LEDC to most appropriately utilize the land as an economic development incentive and create opportunity for future expansion as detailed in the business plan and revenue recapture plan.

All water, sewer, streets and fiber conduit will be owned as part of the project and governed under the contingency and development agreement between LEDC and the City of Laramie. This also provides opportunity for the project to recapture the cost of infrastructure installation as non-participating land owners adjacent to the project develop their parcels as outlined in City codes potentially generating revenue for the use of the fiber conduit.

7. TIMELINE. Describe a realistic project timeline. Include the number of months the project will take, and any other authorizations, permits, funding, or activities necessary prior to the commencement of the project. If the project is to be phased, provide a separate timeline for future phases.

Recognizing that the development of Phase I will provide companies the shovel ready sites and information they require to commit to locating in Laramie, the community is moving forward on an aggressive timeline.

Cirrus Sky Grant Timeline

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
Grant Application Submitted													
Electrical Studies													
Infrastructure Design													
Bid Documents Prepared													
WBC Board Review													
SLIB Review													
Annexation Study & Comp Plan amended													
Grant Funds Authorized													
Annexation Complete													
Land Purchase Option Exercised													
Construction bidding													
Construction													
Phase I Completion													

The City set aside funds to provide match for this grant and in conjunction with LEDC has developed the overall development plan, a business plan, negotiated an option to purchase the land and is obtaining agreements for infrastructure easements supporting the project.

The City has worked with the landowner to proceed with annexation so that the process will conclude in January shortly after a SLIB decision and studies will be underway shortly with Rocky Mountain Power and Western Area Power Administration to plan for the power required by a data center.

Although the City does not have the resources to fund the construction of the infrastructure on this project without grant support, the City is fully committed to moving this project along as quickly as possible to provide the best possible opportunity to recruit a data center. Design work is being done in-house and is due to be complete in spring 2013 with bidding and construction in spring/summer of 2013. This is an aggressive timeframe which is the result of the urgency the community feels is required to attract a data center. This would allow for a company to have a shovel ready site available in fall 2013 within the proposed project site or a larger site to the north within a short time frame (estimated at 6 months from fall 2013).

8. SIMILAR SITES. Are there similar sites or facilities within the community that are un-utilized or under-utilized?

Yes ☐ **No √**

If "yes" please detail what makes this project unique or necessary.

As detailed above, the City and LEDC have evaluated the land in and around the community to determine if there are existing sites that could provide the required acreage and infrastructure. This is the only site in the area with the robust electrical service and transmission capacity required by businesses of this type. The Snowy Range Substation, located on site is a very desirable asset because it eliminates the need for distribution lines of significant length and vulnerability. It also has four separate sources of electricity providing supply, which provides maximum redundancy during power outages.

Few sites in the area have large acreage; the Airport Park and the Turner Tract are two currently available locations. The Airport Park is not desirable because of company buffer requirements, and the restrictions of an "airport influence zone" on building height to accommodate the air service. The Turner Tract was designed and zoned as a live/work office environment and the requirements for building design and the proximity to residential property are not desirable for the industry. Other sites around town are primarily smaller, more isolated lots that would require infill development, which is also a departure from the goal of creating a campus to facilitate the synergy created by co-location.

The Trans-Modal Site to the south of town is a site dedicated to another type of business entirely and not appropriate for this use and it does not have the required water and sewer amenities. Other sites around town are primarily smaller, more isolated lots that would require infill development, which is also a departure from the goal of creating a campus to facilitate the synergy created by co-location.

9. SOCIAL SERVICES, IF APPLICABLE. If the project will expand social services, explain whether demand for those services is outpacing the existing supply of services. Attach any relevant documentation. What is the net effect on the local economy? Attach any relevant documentation.

N/A

10. REVENUE. Will the project funded by BRC generate revenue?

Yes √ No ☐

The Cirrus Sky Data Park anticipates generating revenue from the sale of property, utilization of fiber conduit/right of way and reimbursement agreements for the development of adjacent property. The use of this revenue is contemplated in detail in the Recapture Plan (please see attachment) and also in the business plan, but generally it is anticipated that the revenue will help support economic development operations, provide matching funds for future grants and also develop a pool of funds to help facilitate future expansion of the park.

If "yes," how will revenue be used? Attach a specific plan that anticipates revenue streams and prioritize economic development initiatives to be paid for with the revenue. (See Section VII)

Please see Recapture Plan in the Attachments section (incorporated as part of the Contingency and Development agreement).

SECTION IV: SITE INFORMATION

1. What is the location/address of the project?

As indicated in the area map, the site is north of Laramie between the extensions of 15th and 30th Streets, approximately 149 acres in size on the current northern boundary of Laramie. (see attached map)

2. Is the project site publicly owned?

Yes ☐ No √

If "no," identify current property owners with contact information.

The property owner of the Phase I site is currently Chuck Coughlin, with whom the City has an option to purchase should this grant be successful. (see attached purchase agreement) According to the development agreement between LEDC and the City, the property will be conveyed from the City to LEDC, a Certified Economic Development Organization for management upon the success of the grant.

Charles E Coughlin, Jr.
PO Box 5022
Riverside, CA 92517

3. Describe the site including total acres or square footage, size of developable area, and number of parcels for development. Also, describe any structures on the site, including useable square footage.

The site for Phase I is approximately 149 acres in size (see attached map), with future phases totaling approximately 2500 acres.

4. Does the project involve land or building acquisition?

Yes √ No ☐

If "yes," then who owns the site and what steps are being taken, and by whom, to acquire the property?

The property is currently under an option to purchase with the City of Laramie and is undergoing annexation in preparation for a successful grant application. Should the grant be successful in January, it will be finalized later that month and the option to purchase will be exercised.

5. How is the site currently used?

The site is currently an undeveloped field.

6. What is the proposed future land use of the site? Is it based on a community development plan? Reference the plan and describe how this project is consistent with that land use plan.

This area had originally been contemplated by both the City of Laramie and Albany County as an extension of residential land use because of proximity to residential neighborhoods and growth patterns, which tend to be smaller subdivisions. However, the interest from Verizon caused a short but intense public discussion about the area and the potential future use.

In preparation for a technology park, the City is creating a new Technology Zoning district which will be applied upon completion of annexation. The Comprehensive Plan and Future Land Use Map are being amended to accommodate this usage as well (see attached Land Use Maps).

This area, as desired by industry, would be buffered from the residential areas by some lower impact business areas for ancillary businesses (see the attached Data Center Concept Plan). This still leaves some distance between existing residential use and businesses for open space or more housing.

The City is using the same model that was used in the development of the Turner Tract with new housing and recreation integrated into the office park area. Initially the City developed the Turner Tract Area Plan (see attached), which detailed the concept, development guidelines, financing and phases. After procuring a grant to fund the initial infrastructure, the area began to attract companies, housing developers and other synergistic entities, developing into a distinctly unique business park. This process is the model for Cirrus Sky Technology Park, with similar documents, but a different business focus.

7. Is the site zoned?

Yes √ No ☐

If "yes," then what is the current zoning designation and is the proposed use consistent with that designation?

The site currently sits in the county, but as explained above, it is included in the City's Land Use Plan due to the close proximity to the incorporated boundary. Upon success of this grant, annexation will move forward and the new Technology Zone will become applicable. Additionally, completion of the amendment to the Comprehensive Plan and Future Land Use Maps will occur prior to January 2013.

Will a zone change be required for intended use? Explain.

The Technology Zone will become applicable when the property is annexed upon success of this grant.

8. Are there any known environmental concerns at the site, especially asbestos, wetlands, floodplains, or sage grouse area?

Yes ☐ No √

If yes, explain:

9. What infrastructure is necessary to serve the proposed site (i.e., water, sewer, electricity, natural gas, transportation facilities, and telecommunications) and what are the current coverage, quality, and capacity of the existing infrastructure? If there are deficiencies within any of the infrastructure systems, explain how the deficiencies will be improved.

The infrastructure proposed in this grant is required to create buildable lots in the technology park area. Infrastructure includes an electrical line for construction, water-

line, sewer-line, fiber conduit and roads. These are all extensions of existing city infrastructure and will be sized to meet the contemplated use for existing and future business and residential land. (see Development Plan)

The Development Plan and the City engineering department have developed preliminary designs for the infrastructure and calculations for the linear footage of the various infrastructure, including recent cost evaluations and these are attached in the construction documents for reference. Generally, there will be approximately 9,800 linear feet of water, sewer and fiber infrastructure in the first phase and another 12,600 linear feet in future phases.

SECTION V: COMMUNITY INFORMATION

***** Attach portions of any relevant plans, studies, assessments, or reports. Reference the attachment in your answer.**

1. Does the community have an economic development plan or other study of the local economy?

Yes √ No ☐

If "Yes," then provide the names and dates of relevant plan(s) and describe how does the proposed project fits into overall economic development strategy of the community.

The *Laramie Comprehensive Plan,* Chapter 9: Economic Development, adopted May 2007 (attached) identifies several areas of need that this project addresses. Specifically, the need for incomes to increase to keep up with housing costs, ease the site selection process and improve the infrastructure capacity.

The addition of primary jobs will help to improve our median household income and help improve the ratio of income that goes towards housing to a more reasonable level. It will also help Laramie retain more graduates from the University because of the enhanced opportunities that come with increased job creation for trailing spouses.

Developing the infrastructure necessary to accommodate a data center in advance of their commitment will help decrease the amount of time it takes for a company to relocate, thereby improving competitiveness in site selection. As mentioned above, having this infrastructure already developed is a key criteria for many companies and has already eliminated Laramie for at least one company and we hope that will be the last.

The Plan identifies goals for infrastructure management that detail the support of new technologies in data and communications. This goal supports a recognized technology oriented focus for economic development activities, even though when it was adopted in 2007 the community didn't have a full understanding of what lay ahead in the rapidly evolving technology sector.

The City adopts goals annually and included in these goals for 2010, 2011 and 2012 as a first priority for economic development to *"Provide advocacy and adequate support to ensure a Mega-Data Center locates in Laramie".* The City has taken several steps to support this effort including the creation of a development plan, business plan and design work for Phase I of this plan.

The *Comprehensive Economic Development Strategy* (High Plains Economic Development District of Wyoming, October 2010) as attached details a number of goals and strategies that LEDC and the City have been pursuing to strengthen our economy. Specifically, a project listed under Goal #1 is locating a data center in our region. Contacts from data center businesses indicate that if we are successful in installing the infrastructure to develop "build-ready" lots we will be able to support the relocation of a data center.

2. What are the community's strengths, weaknesses, opportunities and threats? Explain.

Chapter 9 of our Laramie Comprehensive Plan (attached) details a Strengths, Weaknesses, Opportunities, and Threats Analysis(SWOT) which was conducted for Laramie based on a review of economic and demographic characteristics, discussions with area residents and representatives of local organizations, input of the Citizen Project Advisory Team (CPAT) and LEDC, and the consultant's experience working with communities across the country. The table of this analysis listed below reinforces other indicators about the quality of our workforce, and you can also see that the community is making progress in addressing our weaknesses and threats.

CHAPTER 9: ECONOMIC DEVELOPMENT

Table 9.1. Laramie SWOT

Strengths	Opportunities
Population/Workforce	**Downtown**
- Stable population growth	- Expansion and revitalization
- Educated population	- Mixed use, including residential living
- UW, WyoTech, and LCCC	- University leveraging
Economy	**Economy**
- Retail growth	- Partners in Progress Initiative
- Engineering/technology companies	- Airport related businesses
- UW Business Incubator	- Healthcare/medical expansion
- Downtown businesses/restaurants	- Educational Opportunites (Hathaway Scholarship)
Infrastructure	- Tourism
- Airport	**New Development**
- Interstate 80	- New conference center
- Rail	- Turner Tract/Grandview Heights
- Available/quality water supply	- Reynolds Crossing
- Good Aquifer protection	- Coughlin Pole Mountain
Livability	- South Gait property
- UW education, events, and activities	**Redevelopment**
- Accessibility to public lands	- North of Downtown
- Ridge and rangeland views	- "Tired" neighborhoods
- Tree area	**Livability**
- Quality of healthcare	- Trail expansion
- Quality of K-12 education	- Recreation Center
- Small-town values	- Resource and view/ridge protection
Weaknesses	**Threats**
Housing	**Housing/Neighborhoods**
- Affordability	- Integrity of well established neighborhoods
- Availability	- Declining housing conditions
- Rental vs. owner occupany	**Infrastructure**
Infrastructure	- West Laramie's Standards
- Water transmission and distribution	- Aquifer vulnerability
- Aging conditions of wastewater mains	- Requisite funding for reconstruction
- Storm drainage	**Economy**
Economy	- Continued rising energy prices
- Low wage levels	- Recruitment/Retention of physicians
- Lack of employee benefits	- Lack of quality office space
- Tax exempt properties	- Workforce shortage
- Timeliness of development review/approval	**Transportation**
- Shortage of trade labor	- Loss of air service
Appearance and Image	- Increased congestion
- Lack of identity and gateways	
- Corridor aesthetics	

Additionally, the Wyoming Infrastructure Report (attached) outlined strengths and weaknesses of the southeast quadrant of the state of Wyoming, which includes Albany County. (see below)

Strengths	Weaknesses
• Population –Open Space • The three largest population cities – staffing needs for multiple centers • Multiple power plant with dual 230 KVA looped distribution mostly along I-25 and I-80 • Power costs • Fiber along I-80 and I-25 as well as SR211 to Horse Creek and then west • Climate • Proximity to Denver International Airport • University of Wyoming	• Generally the rest of the quadrant • Water & sewer except in municipal areas • No major airport within 1.5 hrs • Only one shovel ready site with power, fiber, water and sewer • Power conditions and/or rates in some areas • Torrington should be a good location but the fiber is weak

The study evaluated different regions of Wyoming as well as specific communities and identified Laramie as a very competitive location for a potential data center site based on community assets. As the report states;

-Laramie—very good power including a brand new WAPA switchyard, ten long haul national and two regional fiber routes and at least three designated commercial development locations including the "Verizon" site.

All of these items give the community good reason to believe that the location of a data center in Laramie is likely if barriers can be removed and the right incentives are in place.

3. What steps are being taken to promote economic development in the community by the applicant or other groups within the community? (For example, business recruitment and retention programs, workforce development, future public investments, marketing campaigns, amenities, etc.)

The City has a contractual relationship with LEDC whereby LEDC provides economic development services for the community at large. LEDC provides marketing services for commercial and business property, works with site selectors and companies for recruitment and coordinates economic development efforts with the City. Recently LEDC has led an effort to enhance the technology sector in Laramie through a

partnership grant with the Workforce Development Council resulting in the "SNAPIT" report. Additionally, after identifying that a lack of rail transportation services is a barrier to a number of companies looking to relocate in Laramie, LEDC was successful in efforts to develop a Trans-modal site in the southern part of the community.

LEDC markets commercial property on the Turner Tract and surrounding areas for the City. As a result, property continues to develop in the area with Inter-tech E&E, Wyoming Workforce Services, Basic Beginnings, Farm Bureau, the City Recreation Center, Laramie County Community College and a residential development. The Laramie Technology Building is also now the home of a technology business, which is located next to the Trihydro campus, which has one building that was funded through the Wyoming Business Council.

Additionally, LEDC has developed a website specifically tailored to the technology industry with information required by data center site selectors. This has yielded many inquiries in addition to the ones referred by the State of Wyoming Business Council.

These efforts in conjunction with $27 million of investments through the sixth penny tax to improve the condition of local infrastructure improve the capacity of the community to support new business development. This project would be a major step for the community in pursuit of the technology industry, which is identified as a growing cluster by the University and LEDC.

4. Is there a community or economic development group or committee that is proactively working or implementing an economic development strategy?

Yes √ No ☐

Explain.

The Laramie Economic Development Corporation is a local nonprofit with 27 years of history and business leaders from throughout the community. The City of Laramie has a strong and contractual relationship with the organization for economic development services in the community. They are the "front door" for companies interested in locating in Laramie and have developed a comprehensive and web-accessible property inventory that includes demographic, community and workforce information.

Their proactive efforts have resulted in the identification of various "gaps" in our economic development that they have aggressively worked to fill. In their early years, they helped spur the development of business park facilities for small manufacturers and service companies at the Laramie Rivers Business Park. They have also spear-

headed quality of life projects such as the Recreation Center and gateway beautification and support other community organizations that work to improve our economy such as the Laramie Main Street Alliance and the Laramie Area Chamber of Commerce.

LEDC uses the CEDS report (attached) in conjunction with other industry trends to stay abreast of changes in the local and national economic development landscape. The board also has an annual planning retreat where priorities for the year are identified for work efforts each year (see attached Annual Report). This has resulted most recently in the Trans-modal site development, the SNAPIT report and now the Technology Park.

5. Is there a list of current commercial and industrial vacancies available to prospective business?

Yes √ No ☐

Explain.

The Laramie Economic Development Corporation website has a comprehensive list of business property for sale or lease on their *ZoomProspector* site. This site also provides a host of community demographic information typically only available for larger urban areas. This site can be viewed at http://laramie.zoomprospector.com/. Additionally, the Laramie Main Street Alliance manages a Downtown Property inventory and coordinates commercial listings with LEDC.

Recently, LEDC had occasion to identify tracts of land for specific projects such as the GE facility, the rail spur, and Verizon. Each project required in-depth analysis of available property which has assisted in the identification of assets specific to each location. The assessments revealed that properties in town as they currently exist do not serve the data center industry as the Wyoming Infrastructure Report reports their needs. The community has other available sites to accommodate ancillary technology businesses and anticipate that these locations will be utilized as such.

6. Has the community identified targeted industries?

Yes √ No ☐

Explain.

The Laramie Economic Development Corporation through their partnership with High Plains Economic Development District collaborated on the *Comprehensive Economic Development Strategy* (attached) and has identified goals and strategies to improve the economy.

Goal #1 includes Project 1. Encourage a data center to relocate to southeast Wyoming, which is specifically what this project would accomplish. Additional goals include *establishing strong public-private partnerships and improving public infrastructure*, which are important components of this project as well.

Additionally, the State of Wyoming commissioned the Wyoming Infrastructure Report which identified specific reasons that the Laramie Area would be a site of interest for data centers. This information is in line with local experience and information regarding the growing technology cluster. This project is a public declaration that Laramie intends to become the Technology Capitol of Wyoming.

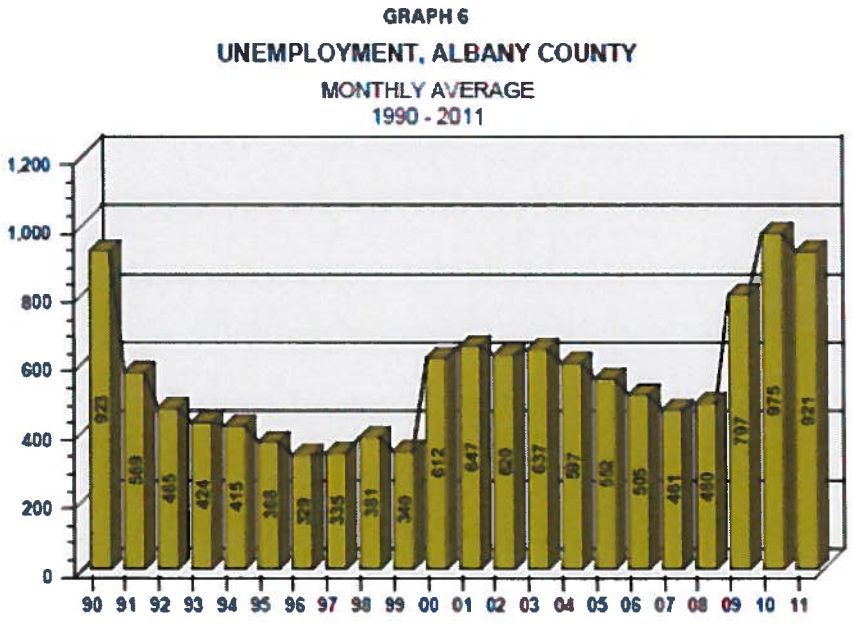
7. Are there any studies or surveys summarizing labor force characteristics, skills, supply or demand?

Yes √ No ☐

Explain.

The Census data that the City of Laramie hosts on its website and the *ZoomProspector* program on the LEDC website provide a host of information about the workforce in Laramie- great resources for prospective employers unique for a town of such small size.

As you see in the unemployment chart below like many areas of the country, we have citizens who are looking for employment and many others are under-employed. Our census data indicates that Laramie residents are above average in many ways, especially in their pursuit of education, making high tech industry a good target for new businesses in our community.



Almost 50% of Laramie residents over 25 years of age hold at least a four-year college degree. This has resulted in a long history of "under-employment" in Albany County and finds many college graduates working under capacity in the service sector. The University of Wyoming, Laramie County Community College – Albany County Campus, and WyoTech all have a strong presence in the

community, ensuring the continued education and development of Laramie's citizens and an educated workforce.

Additionally, the University of Wyoming seeks to develop a Research and Development Park to further enhance opportunities for technology businesses and create additional synergy in the sector. This has the ability to help recruit students and faculty for the University as well as create new economic opportunity for residents.

8. How does the availability of the local labor force compare to the demand for labor should this Business Ready project be successful? If necessary reference any applicable labor statistics.

As seen in the unemployment chart from the Laramie Area Economic Indicators report (above), unemployment has increased since 2008 significantly when compared to previous years. Under-employment has persisted for decades, leading our highly skilled and educated workers to dominate the service industry. With a high proportion of college educated citizens, Laramie is well positioned to provide employees to the technology sector.

Additionally, according to the most recent census, Laramie grew at a rate of just over 13%, making us one of the fastest growing towns in the country. This is good news for companies interested in locating in Laramie because of the increase in potential workforce.

9. How does the availability of the housing compare to the demand for housing should this Business Ready project be successful? If necessary reference any applicable local housing statistics.

According to the Laramie Area Economic Indicators report, residential housing development is improving with continued construction and renovation of homes and apartments. (chart below)

BUILDING PERMITS

City of Laramie

2001 - 2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
New Residences	31	44	75	104	97	74	113	86	72	90	82	868
New Apartments/Duplex	14	3	12	32	47	30	17	6	3	3	31	198
Remodels (includes re-roofing)	275	288	256	262	278	255	268	1,258	1,197	450	266	5,053
Mobile Homes/Constr. Trailers	28	37	40	26	12	3	1	0	0	0	0	147
Demolish	5	6	6	2	9	7	11	7	14	21	17	105

Note: New Residences may include Single-family homes, Townhouses, or Condos

Source: City of Laramie Building and Engineering Department Annual Report

Additionally, the community has identified in the Comprehensive Plan those areas where additional housing would be appropriate and several are in the areas adjacent to the proposed data center park. (see attached land use map)

In 2012, the City has also seen a number of active plats for single family and multi-family housing, many in this area. The University is constructing new housing complexes that were taken off line in the past few years and this should also add to available housing stock, freeing up rental housing in other areas of town. These combined conditions should easily allow for Laramie to absorb the people filling positions at a new data center business.

SECTION VI: BUDGET INFORMATION

The project budget pages need to show how all eligible costs will be covered by both cash and in-kind contributions. Construction costs represented here must be supported by estimates from a qualified engineer or architect.

Part A: Eligible Project Costs

Eligible Project Costs		
1.	Land, structures, rights-of-way, appraisals, etc.	$2,306,914.20
2.	Architectural and engineering fees	$385,251.30
3.	Other fees (surveys, tests, etc.)	$285,612.15
4.	Project inspection fees (incl. in #2.)	$
5.	Site work	$
6.	Demolition and removal	$
7.	Construction	$3,435,442.95
8.	Miscellaneous/Other (Please explain in detail below)	$314,462.21
9.	Subtotal (sum of lines 1 through 8)	$6,727,682.81
10.	Contingencies (contingency and general mobilization)	$702,448.60
Total Eligible Project Costs		
11.	**Total Eligible Project Costs** *Use this amount for Part B, Number 1 and as the Total Eligible Project Costs as listed on the cover sheet.*	**$7,430,131.41**

Further explanations:
8. Misc. Other—Signage, Development Plan, Planning team

Part B: Funding Sources

1. Total Eligible Project Cost *This amount will be the same as Part A, Number 11 and will be reflected on the Cover Sheet as the Total Project Cost.*	$7,430,131.41	1a

2. Local Match

a. Cash Match. List cash match funding source(s) and amount. Indentify whether the amount has been provided or is being requested. Provide the status and the date funds were approved or the date that funds are expected to be approved.

Cash Match Source	Status (approved or pending)	Date of Approval	Cash Amount
City of Laramie	Approved	June 2011/12	$500,000
			$
		Total Cash Match	**$500,000** 2a

b. In-kind Match. List in-kind contribution types, descriptions, sources and values. These amounts should also be reflected in Part A: Project Costs.

Description	Source	Value
Planning Team/Development Plan	City/Community Members	$237,662.21
Right of Way Acquisition	Adjacent land owners	$242,414.20
Appraisal, survey and Construction Admin.		$387,724.30
Land Value purchase price vs value		$596,000
	Total In-kind Match	**$1,463,800.71** 2b
c. Total Local Match (Sum 2a and 2b)		**$1,963,800.71** 2c

Match Percentage (2c divided by 1a) A BRC grant and/or loan request in up to $250,000 requires a minimum match of 5% of the Total Eligible Project Costs. A BRC grant and/or request over $250,000 requires a minimum match of 15% of the Total Eligible Project Costs.	26%

4. Business Ready Community (BRC) Request (Subtract 1 - 2c) *This is the amount of money you need to complete the project.*	**$5,466,330.70**

Part C: Ineligible Costs

Ineligible project costs include fixtures, appliances, equipment or other features of a facility not physically attached.

1. Ineligible Project Costs (if applicable)	
Ineligible Items	Amount
	$
	$
TOTAL Ineligible project costs	**$**
2.. Local Contribution Toward *Ineligible* Project Costs (if applicable)	
Source of Funding	Amount
	$
TOTAL Source of Funding for Ineligible Project Costs	**$**

Part D: Total Project Costs

Total Eligible Project Costs	**$7,430,131.41**
Total Ineligible Project Costs	$
Total Project Cost	**$7,430,131.41**

SECTION VII: REVENUE RECAPTURE PLAN

Revenue generated by the applicant or a private developer through publicly funded infrastructure projects must be recaptured by the applicant at a rate negotiated between the applicant and other partners and commensurate with the public investment. A plan must be designed demonstrating how the recaptured funds will be managed and utilized for the purpose of economic development. The viability and thoroughness of the recapture plan for revenue generating projects will anticipate revenue streams and prioritize economic development initiatives to be paid for with the revenue while allowing the community flexibility to respond to opportunities.

The intent of the revenue recapture plan is to ensure that the BRC funding allocated to a project will continue to remain in the community fostering community and economic development activities. The following are some examples of eligible uses for recaptured funds: revolving loan fund, façade improvements, downtown development, beautification, marketing, matching funds for future grants or loans, public infrastructure improvements encouraging economic development, trainings and seminars, economic development studies and plans, and entrepreneurship initiatives. Revenue recaptured funds may not be used for operations and management costs.

The plan must:

- identify projected revenue streams from the project and state the amount of revenue anticipated to be recaptured
- discuss how these recaptured funds will be managed
- state specifically how the recaptured funds will be utilized
- state goals and objectives that are consistent with existing community and economic development plans
- identify any additional funding and partnerships that may be involved
- details of the revenue recapture plan must be noted in the resolution of support

SECTION VIII: ADDITIONAL INFORMATION FOR LOAN REQUESTS

Skip this section if you are applying only for a grant.

A general BRC loan may be made to fund the entire funding request or fund a portion of the project in conjunction with a BRC grant request. A Special Assistance Loan may be used to loan additional funding in excess to the maximum BRC award amount and/or the full or partial funding of the required match.

The WBC Council will recommend an interest at either no or low interest and a term for repayment. The State Loan and Investment Board will have final approval.

In addition to completing the application and providing all necessary documents, the following must be submitted:

- Proposed security for the loan
- Method of repayment for the loan
- An additional resolution passed by the applicant stating the method of repayment and proposed security for the loan
- A summary of the applicant's total investments and cash balances for the two preceding years (Complete chart on the following page)

Should an applicant be awarded a BRC, the applicant will have to enter into a loan agreement with the WBC.

1. Identify the revenue source(s) that will be used to service loan debt for total public project costs.

2. List all sources of proposed security for the loan.

3. Complete following General Financial Information Form.

General Financial Information Form for BRC Loan Requests

Financials prepared by: Mader, Tschacher, Peterson & Co., LLC

Date: 6/30/2011

Entity: City of Laramie

Tax ID Number 836000072

GENERAL FUND ANALYSIS	**Current FY**	**Previous Two FY's**	
	FY : 2011	**FY :** 2010	**FY :** 2009
REVENUES			
Taxes			
Local Property Taxes	$1,671,868	$1,671,138	$1,563,275
Local Sales Tax	$8,552,115	$9,386,250	$9,500,038
Other Local	$2,565,636	$2,541,009	$2,447,474
Intergovernmental Revenues	$7,792,049	$9,523,509	$9,910,599
Other	$3,130,290	$2,877,116	$3,161,109
EXPENDITURES			
General Gov't.	$5,969,255	$5,763,060	$6,016,598
Physical Security	$11,915,939	$12,544,674	$12,457,295
Other	$6,018,296	$5,094,148	$6,888,500
ASSESSED VALUATION	$203,440,680	$198,021,160	$196,444,119
TOTAL MILLS LEVIED	8	8	8
Provide Breakdown of the mill levy distribution for this FY	The full 8 mills are distributed to the city.		
TOTAL INVESTMENTS	$37,982,702	$25,287,384	$24,037,476
TOTAL CASH BALANCES	$59,285,212	$45,430,860	$45,078,718

	Current FY 2011
TOTAL BONDED AND NON-BONDED INDEBTEDNESS	
Principal Balance	**$36,815,175(see note below)
Interest Rate	Rates range between 0%-6.6%, most in the 2.5%-4% range (see note in grant attachments)
Remaining Term	Terms up to 2042 (see notes)
SALES AND USE TAX LEVY	5th and 6th penny are imposed

**Of this total;

$10,000,000 is for the Territorial Prison and off-set by a 0 coupon bond.
$22,300,000 is from the 2010 SPT election and paid for by SPT Revenue.
$3,501,965 is from the 2001 SPT election, is fully collected and will be paid when mature.

This leaves the actual indebtedness of the General Fund at;

$1,013,210

ORIGINAL

BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM
GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

1. **Parties.** The parties to this Grant Agreement are the State of Wyoming, by and through the Wyoming Business Council ("WBC"), whose address is 214 West 15th Street, Cheyenne, Wyoming 82002 and the City of Laramie, a political subdivision of the State of Wyoming ("Grantee"), whose address is P.O. Box C, Laramie, WY 82070.

2. **Purpose of Grant Agreement.** The WBC shall provide Business Ready Community Grant and Loan Program ("BRC") Community Readiness funds to Grantee in the amount set forth in Section 4, and Grantee shall undertake and complete materials, projects and/or services (collectively, the "Project") described in Attachments A, B, C, and D attached hereto. Performance by Grantee of the requirements of this Grant Agreement and compliance with all BRC program rules and regulations is a condition to Grantee's receipt of monies hereunder.

3. **Term of Grant Agreement and Required Approvals.** This Grant Agreement shall commence upon the date the last signature is affixed hereto. All construction services shall be completed by June 30, 2015, unless an extension is approved by WBC. This grant agreement shall terminate on June 30, 2018, unless otherwise amended or terminated in accordance with the terms and conditions specifically provided herein. This agreement may be extended when, in the sole discretion of the WBC, circumstances require an extension. Any extension shall be done by written amendment.

4. **Payment.** WBC agrees to grant monies to Grantee for performance of the Project, as invoices are submitted for work done in connection with the Project, completed in accordance with the requirements of this Agreement and the BRC program. The total payment to Grantee under this Grant Agreement shall not exceed five million four hundred sixty-six thousand three hundred thirty-one dollars ($5,466,331) ("Grant"). Payment will be made following Grantee's delivery to WBC of invoices detailing services performed in connection with the Project in a form satisfactory to WBC. Payment shall be made from WBC's BRC budget pursuant to the schedule shown on Attachment B hereto. No payment shall be made for any services performed in connection with the Project prior to the date upon which the last required signature is affixed to this Grant Agreement.

5. **Responsibilities of Grantee Regarding the Project.** The Project to be undertaken is described in Attachment A and C which are attached and made a part of this Grant Agreement.

6. **Responsibilities of WBC.** WBC will, at its discretion, assist in providing Grantee access to information, including without limitation providing Grantee with information concerning BRC program requirements, rules and other statutes and regulations referred to herein, and will cooperate with Grantee whenever possible. WBC shall have no obligations, other than those specifically set forth herein, regarding the Project or its performance.

97215

7. **Special Provisions.**

A. Budget Transfer Limitation. Grantee agrees it will not exceed any of the line item totals listed in Attachment B by more than twenty percent (20%) without prior approval from WBC. Such changes will not result in any change in the total Project costs, or a change in the Grant amount.

B. Default and Remedies. In the event Grantee or any subgrantee of Grantee under this Grant Agreement defaults or is deficient in the performance of any term of this Grant Agreement or any requirements of the BRC program rules and regulations, then WBC shall have the right to exercise all remedies provided by law or in equity, including without limitation:

(i) Immediately terminating this Grant Agreement without further liability or obligation of WBC;

(ii) Issuing a letter of warning advising Grantee of the deficiency and putting the Grantee on notice that additional action will be taken if the deficiency is not corrected or is repeated;

(iii) Recommending, or requesting Grantee to submit proposals for corrective actions, including the correction or removal of the causes of the deficiency;

(iv) Advising Grantee to suspend disbursement of funds for the deficient activity;

(v) Advising Grantee to reimburse any amounts improperly expended and reprogram the use of the funds in accordance with applicable requirements;

(vi) Changing the method of payment to Grantee; and/or

(vii) Reducing, withdrawing, or adjusting the amount of the Grant.

C. Extension of Construction. WBC may, at its discretion, without a written amendment to this Grant Agreement, extend the construction services date if Grantee provides written justification for the extension and that the completion of construction services will not exceed six (6) months from the construction services date established herein. A construction services date extension of six (6) months or less will not change the termination date established herein. All other extensions shall be done by written amendment to this Grant Agreement.

D. Monitor Activities. The WBC shall have the right to monitor all Project related activities of the grantee. This shall include, but not be limited to, the right to make site inspections at any time, to bring experts and consultants on site to examine or evaluate completed work or work in progress, and to observe personnel in every phase of performance of the Project.

E. No Finder's Fees. No finder's fee, employment agency fee, broker fee or other such fee related to this Grant Agreement shall be paid by either party.

F. Non-Supplanting Certification. Grantee hereby affirms that BRC grant funds will be used to supplement existing funds, and will not replace (supplant) funds that have been appropriated for the same purpose.

G. Publicity. Any publicity given to the Project or services provided herein, including, but not limited to, notices, information, pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Grantee, shall identify the Business Ready Community Grant and Loan Program as the funding program.

H. Reporting. Within 15 calendar days at the conclusion of each calendar quarter during the Term of this Grant Agreement, Grantee shall furnish WBC with a progress report. Each progress report shall set forth, in narrative form, the Project work accomplished under the Grant during the quarter or any other information requested by WBC. At the end of the term, Grantee shall furnish WBC with a comprehensive report of the Project and accomplishments pursuant to the Grant. Grantee shall likewise furnish WBC with a cumulative financial statement, reflecting total expenditures pursuant to this Grant Agreement upon completion of construction services.

I. Retention of Records. Grantee agrees to retain all records related to the Project which are required to be retained pursuant to this Grant Agreement or the BRC program rules and regulations for ten (10) years following WBC's date of notice to Grantee of closeout of the Grant, provided all audit requirements have been fulfilled.

8. General Provisions

A. Amendments. Any changes, modifications, revisions or amendments to this Grant Agreement which are mutually agreed upon in writing by the parties hereto shall be incorporated by written instrument, signed by all parties to this Grant Agreement.

B. Americans with Disabilities Act. The Grantee shall not discriminate against a qualified individual with a disability and shall comply with the Americans with Disabilities Act, P.L. 101-336, 42 U.S.C. 12101, et seq., and/or any properly promulgated rules and regulations related thereto.

C. Applicable Law/Venue. The construction, interpretation and enforcement of this Grant Agreement shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming shall have jurisdiction over this Grant Agreement and the parties, and venue for any action shall be in the First Judicial District, Laramie County, Wyoming.

D. Assignment. Certain duties and responsibilities of the Grantee may be delegated to Laramie Economic Development Corporation, whose address is 2523 E. Garfield, Suite A,

Laramie, WY 82070, pursuant to the Memorandum of Understanding shown in Attachment C. Those duties include, but are not limited to further develop, market, promote, and sell property upon completion of construction of the Project funded by this Grant. Neither party shall assign or otherwise transfer any of the rights or delegate any of the duties set forth in this Grant Agreement without the prior written consent of the other party. Grantee shall not use this Grant Agreement, or any portion thereof, for collateral for any financial obligation, without the prior written permission of WBC. Any assignment to Laramie Economic Development Corporation as permitted by the preceding sentence will not relieve Grantee of its responsibility to perform or cause to be performed all duties under this Grant.

E. Assumption of Risk. The Grantee shall assume the risk of any loss of state funding, due to the Grantee's failure to comply with state requirements. The WBC shall notify the Grantee of any state determination of noncompliance.

F. Audit/Access to Records. The WBC and any of its representatives shall have access to any books, documents, papers, and records of the Grantee that are pertinent to this Grant Agreement.

G. Availability of Funds. Each payment obligation of the WBC is conditioned upon the availability of government funds that are appropriated or allocated for the payment of this obligation. If funds are not allocated and available for the continuance of the services performed by the Grantee, the Grant may be terminated by the WBC at the end of the period for which the funds are available. The WBC shall notify the Grantee at the earliest possible time of the services that will or may be affected by a shortage of funds. No penalty shall accrue to the WBC in the event this provision is exercised, and the WBC shall not be obligated or liable for any future payments due or for any damages as a result of termination under this section. This provision shall not be construed to permit the WBC to terminate this Grant Agreement to acquire similar services from another party.

H. Award of Related Grant Agreements. The WBC may undertake or award supplemental or successor grant agreements for work related to this Grant Agreement. The Grantee shall cooperate fully with other grantees and the WBC in all such cases.

I. Compliance with Laws. The Grantee shall keep informed of and comply with all applicable federal, state and local laws and regulations in the performance of this Grant Agreement.

J. Entirety of Grant Agreement. This Grant Agreement consisting of eight (8) pages, Attachment A, consisting of one (1) page, and Attachment B, consisting of one (1) page, and Attachment C, consisting of fourteen (14) pages, and Attachment D, consisting of ten (10) pages, represents the entire and integrated Grant Agreement between the parties and supersedes all prior negotiations, representations, and agreements, whether written or oral.

K. Extensions. Nothing in this Grant Agreement shall be interpreted or deemed to create an expectation that this Grant Agreement will be extended beyond the term described herein. This Grant Agreement may be renewed by agreement of both parties in writing, provided that there is no right or expectation of renewal or extension beyond the Term, and any renewal or extension will be determined at the discretion of WBC and subject to any necessary WBC approval. Any agreement to extend this Grant Agreement shall include, but shall not be limited to: an unambiguous identification of the Grant Agreement being extended; the term of the extension; a statement that all terms and conditions of the original Grant Agreement shall, unless explicitly delineated in the exception, remain as they were in the original Grant Agreement; and, if the duties of either party will be different during the extension than they were under the original Grant Agreement, a detailed description of those duties.

L. Indemnification. The Grantee shall indemnify, defend, and hold harmless the State, the WBC, and their officers, agents, employees, successors, and assignees from any and all claims, lawsuits, losses, and liability arising out of Grantee's failure to perform any of Grantee's duties and obligations hereunder or in connection with the negligent performance of Grantee's duties or obligations, including but not limited to any claims, lawsuits, losses, or liability arising out of Grantee's malpractice.

M. Independent Contractor. Grantee shall function as an independent contractor for the purposes of this Grant Agreement, and shall not be considered an employee of WBC for any purpose. Grantee shall assume sole responsibility for any debts or liabilities that may be incurred by the Grantee in fulfilling the terms of this Grant Agreement, and shall be solely responsible for the payment of all federal, state and local taxes, which may accrue because of this Grant Agreement. Nothing in this Grant Agreement shall be interpreted as authorizing Grantee or its agents and/or employees to act as an agent or representative for or on behalf of WBC, or to incur any obligation of any kind on the behalf of WBC. Grantee agrees that no health/hospitalization benefits, workers' compensation and/or similar benefits available to WBC employees will inure to the benefit of Grantee or Grantee's agents and/or employees as a result of this Grant Agreement.

N. Kickbacks. The Grantee certifies and warrants that no gratuities, kickbacks or contingency fees were paid in connection with this Grant Agreement, nor were any fees, commissions, gifts, or other considerations made contingent upon the award of this Grant Agreement. If the Grantee breaches or violates this warranty, the WBC may, at its discretion, terminate this Grant Agreement without liability to the WBC, or deduct from the Grant Agreement or consideration, or otherwise recover, the full amount of any commission, percentage, brokerage, or contingency fee.

O. Notices. All notices arising out of, or from, the provisions of this Grant Agreement shall be in writing and given to the parties at the address provided under this Grant Agreement, either by regular U.S. mail or delivery in person. Delivery shall be deemed to have occurred 3 days following deposit in the U.S. mail or upon delivery in person.

P. **Ownership of Documents/Work Product/Materials.** All documents, records, field notes, data samples, specimens, and materials of any kind resulting from performance of this Grant Agreement are at all times the property of the WBC.

Q. **Prior Approval.** This Grant Agreement shall not be binding upon either party, no services shall be performed under the terms of this Grant Agreement, and the Wyoming State Auditor shall not draw warrants for payment on this Grant Agreement, until this Grant Agreement has been reduced to writing and approved as to form by the Office of the Attorney General.

R. **Severability.** Should any portion of this Grant Agreement be judicially determined to be illegal or unenforceable, the remainder of this Grant Agreement shall continue in full force and effect, and either party may renegotiate the terms affected by the severance.

S. **Sovereign Immunity.** The State of Wyoming and WBC do not waive sovereign immunity by entering into this Agreement and the Grantee does not waive governmental immunity, and each specifically retains all immunities and defenses available to them as sovereigns or governmental entities pursuant to Wyo. Stat. § 1-39-101, et seq., and all other applicable law. Designations of venue, choice of law, enforcement actions, and similar provisions shall not be construed as a waiver of sovereign immunity. The parties agree that any ambiguity in this Contract shall not be strictly construed, either against or for either party, except that any ambiguity as to sovereign immunity shall be construed in favor of sovereign immunity.

T. **Taxes.** Grantee shall pay all taxes and other such amounts required by federal, state and local law, including but not limited to social security taxes, workers' compensation, unemployment insurance and sales taxes in connection with performance of the Project and this Grant Agreement.

U. **Termination of Grant Agreement.** This Grant Agreement may be terminated, without cause, by either party upon thirty (30) days written notice. The WBC may terminate this Grant Agreement immediately for cause if the Grantee fails to perform in accordance with the terms and conditions of this Grant Agreement. Should the Grantee fail to perform in a manner consistent with the terms and conditions set forth in this Grant Agreement, payment under this Grant Agreement may be withheld until such time as the Grantee performs its duties and responsibilities.

V. **Third Party Beneficiary Rights.** The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Grant Agreement shall not be construed so as to create such status. The rights, duties and obligations contained in this Grant Agreement shall operate only between the parties to this Grant Agreement, and shall inure solely to the benefit of the parties to this Grant Agreement. The provisions of this Grant Agreement are intended only to assist the parties in determining and performing their obligations under this Grant Agreement.

W. Time is of the Essence. Time is of the essence in the performance by Grantee all provisions of the Grant Agreement.

X. Titles Not Controlling. Titles of sections are for reference only, and shall not be used to construe the language in this Grant Agreement.

Y. Unused/Misused Funds. The WBC shall be entitled to recover from the Grantee any full or partial payment made under this Grant Agreement for: 1) any payments used for purposes not authorized, or performed outside this Grant Agreement, 2) any payments for services the Grantee is unable to provide, 3) any payments for services the Grantee did not provide but was required to provide under the terms of this Grant Agreement.

Z. Waiver. The waiver of any breach of any term or condition in this Grant Agreement shall not be deemed a waiver of any prior or subsequent breach.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

9. **Signatures.** By signing this Grant Agreement, the parties represent and warrant that they have read and understood it, that they agree to be bound by the terms of the Grant Agreement, that they have the authority to sign it, and that they have received a signed and dated copy of the Grant Agreement.

The effective date of this Grant Agreement is the date of the signature last affixed to this page.

WYOMING BUSINESS COUNCIL

Robert K. Jensen, Chief Executive Officer — Date: 2.26.13

Molly Spangler, Director
Investment Ready Communities — Date: 2.26.13

CITY OF LARAMIE

David Paulekas — Date: 2-22-13
Paul Paulekas, Mayor
City of Laramie

ATTORNEY GENERAL'S OFFICE APPROVAL AS TO FORM

S. Jane Caton #9725 — Date: 2-1-13
S. Jane Caton
Senior Assistant Attorney General

ATTACHMENT A TO
BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM
GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

Grantee will receive the sum of $5,466,331 of the Business Ready Community (BRC) program funds. Grantee will, in turn, use the funds to purchase 149 acres on the northern edge of the city limits between 15th Street and 30th Street, connected with Asphalt Lane on the north to begin development of Cirrus Sky Technology Park. Grant funds will also be used for the installation of a 1,250 foot extension of 22nd Street, a 3,450 foot development of a parkway, arterial road, a 3,000 foot extension of 30th Street, 2,700 linear-feet of 10-inch waterline, 7,900 linear-feet of 24-inch waterline, and 8,000 linear-feet of sewer line within the project area.

The city of Laramie will own the infrastructure and will own the property during the construction phase of the project. The city will transfer ownership of the property to Laramie Economic Development Corporation (LEDC) once construction is completed. LEDC will be responsible to further develop, market, promote, and sell the property.

LEDC will be contracted with the city of Laramie to manage the revenue recaptured from the sale of lots, projected new tax benefits, and utility development agreements with adjacent landowners as property is developed. The projected revenue recapture at the end of year five is $6,327,512, and at the end of year ten is projected to be $15,589,759. The recaptured revenue will be utilized as follows:

- 80% will be utilized for future development of Cirrus Sky Technology Park, and for matching grants in surrounding area.
- 20% will be utilized for marketing and promotion of the park and other properties within the community, administrative costs, and other economic development related projects.

The project is more particularly described in the BRC application received by the WBC on August 31, 2012, and the Contingency and Development Agreement made October 2, 2012, by and between the Grantee and LEDC.

Grantee will be required to provide information as requested by the State of Wyoming, by and through the WBC, about sale of lots, partnership with the University of Wyoming in development and recruitment of technology related businesses, data center recruitment, future development of the Cirrus Sky Technology Park, job creation, revenue recapture, additional investments, marketing, promotion, other related business recruitment, and business development efforts.

ATTACHMENT B TO
BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM
GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

being tracked by Paddy

Projected Grant Expenditure Schedule for Laramie					
DESCRIPTION	BRC	MATCH			TOTAL
		Cash (City)	In-kind (City)		
Land Acquisition	$1,345,040	$116,960	$	874,914	$2,336,914
Non Construction Costs	$266,470	$23,171	$	351,225	$640,866
Construction Costs	$3,854,821	$359,869	$	1,305,750	$5,520,440
Total Project Cost	$5,466,331	$500,000	$	2,531,889	$8,498,220

For the above Projected Grant Expenditure Schedule "Non Construction Costs" include: appraisal, architectural, engineering, and project inspection fees; "Construction Costs" include: site work, materials, labor, utilities, and contingencies.

The WBC must receive a copy ...iversity of Wyoming for the purchase of 23 lots.

Before funds can be drawn do... ...st provide the WBC with a copy of the:

- Receipt of documentatic... ...cess completion

This grant is incrementally fun... ...ove Projected Grant Expenditure Schedule. The W... ...vouchers or invoices approved by the Grantee are su... ...requests and billing documentation, the WBC wil... ...two percent (92%). Verification of all in-kind contri...

If actual costs of the project ...d in Attachment B, Grantee agrees to pay the differ... ...gh the BRC Program and the actual costs of the completed Project.

If there is additional funding for the project, the Grantee must provide the WBC with all necessary information regarding the funding.

ATTACHMENT C TO
BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM
GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

CONTINGENCY & DEVELOPMENT AGREEMENT

Between the City of Laramie and Laramie Economic Development Corporation for
Economic Development Project To Develop a Technology Business Park North of City Limits

This Contingency & Development Agreement (hereinafter referred to as the "Agreement") is made and entered into this 02nd day of October, 2012, by and between the City of Laramie, Wyoming (hereinafter referred to as "City"), a Wyoming municipal corporation, whose address is 406 Ivinson Avenue, Laramie, Wyoming 82070, and the Laramie Economic Development Corporation (LEDC), a Wyoming non-profit corporation and Community Development Corporation in the State of Wyoming, whose address is 2523 E. Garfield St. Suite B, Laramie, Wyoming 82070.

Section I. Project Description

A. LEDC is a Wyoming non-profit corporation and community development organization formed and duly authorized under Wyoming State Statute. The Business Ready Community Grant and Loan Program authorizes project administration by a community development organization other than the grant applicant pursuant to a written agreement between the applicant and the community development organization.

B. The City intends to apply to the Wyoming Business Council for a Business Ready Community Grant and Loan Program award under the Community Readiness funding category in the amount of Five Million Four Hundred Thousand Dollars ($5,400,000.00) (hereinafter referred to as the "Grant"). The proposed Community Readiness Project will purchase the property ("Project Site") currently owned by Charles E. Coughlin, Jr. that is located to the North of the City limit between 15th Street and 30th Street, more particularly defined by the attached Exhibit "A." The City has acquired an option to purchase the Project Site and intends to exercise that option with a portion of the grant funds mentioned herein, more particularly defined by the attached Exhibit "B." The remaining funds from the grant are to be used to install certain infrastructure in and around the Project Site in order to provide a ready site for potential users of the site who have an interest in the specific amenities available on the site in accordance with the details provided in the grant application, hereinafter referred to as the "Project." It is the agreement and intention of the parties, that following completion of the necessary infrastructure at the Project Site, and annexation of the Project Site into the City of Laramie, the City shall transfer title of the entire Project Site by way of Warranty Deed to LEDC not later than January 1, 2015. It is of benefit to the City and saves City resources to request that LEDC utilize its expertise to administer the project once the improvements have been accepted by the City and the City Council approves the transfer of deed title.

C. The City and LEDC believe the Project will create a substantial public benefit to both Laramie and Albany County, in the form of job creation, expansion of the tax base, and

increased economic development opportunities. Though the project will not immediately affect Laramie's economy and tax base, it will greatly help to facilitate business recruitment and retention opportunities by creating a business park suitable to certain identifiable businesses in need of high electric power usage and intensive telecommunication options, which is currently unavailable in Laramie. As these recruitment and retention opportunities come to fruition, they will in turn result in job creation or preservation thereby helping to produce additional (sales) tax revenue and stimulate the economy.

Section II. Agreement

Now, therefore, in exchange of the mutual promises exchanged herein, the City and LEDC hereby agree as follows:

1.0 **Contingencies; Termination; Assumption of Business Risks.** This Agreement is contingent upon approval of the Business Ready Grant Application in the full amount of Five Million Four Hundred Thousand Dollars ($5,400,000.00) by the Wyoming Business Council and the State Loan and Investment Board, and the funding of the Grant in the full amount of the application. Should a lesser amount be awarded, the Agreement will be amended or terminated accordingly.

1.1. The City and LEDC shall each have the unilateral right to terminate this Agreement, for any reason, at any time prior to the time Grant funds are expended on the Project.

1.2. The Parties acknowledge that the application for grant funding to the Wyoming Business Council requires the City as applicant, to solicit citizen input through a published public hearing before submission of an application and adoption of a resolution by the City Council. In the event the City Council does not pass a resolution supporting the application by the City to the Wyoming Business Council for grant funds for this Project, the City shall have the right to declare this Agreement null and void and of no further force or effect, whereupon, the Parties shall be released from performing all obligations, covenants, and promises contained in this Agreement, and each party shall bear and be solely responsible for the payment of all costs and expenses of any kind or nature that it has incurred pursuant to this Agreement.

1.3. The Parties agree that nothing in this Agreement shall be construed to mean that the City is obligated to proceed with the Project if it does not receive the requested funding from the Wyoming Business Council, nor shall anything be construed to mean the City is obligated to expend further funds for the Project in excess of the funds received from the Wyoming Business Council, unless LEDC provides appropriate assurances of payment of such excess amounts.

1.4. LEDC assumes all business risks that the Application may not be approved, and, if approved, that the Grant may not be funded.

2.0 **Term of Agreement.** This Agreement shall become effective upon execution, and shall remain in full force and effect for the term of the development of the property pursuant to Paragraph 3.3 below and for the term of the grant agreement with the Wyoming Business Council if the grant is awarded. The term of this agreement shall include the entire period from the transfer of title to LEDC until such time as LEDC has completely removed itself from the ownership of the Project, or any property interest therein, including reversionary interests, or payments therefor.

3.0 **Grant Match & Consideration.** Now, therefore, in consideration of the matters noted above and of the mutual benefits and obligations set forth in this Agreement, City and LEDC hereby agree as follows:

3.1 **Location:** The land upon which the Project will be constructed will comprise an approximately 149 acre tract in Albany County, Wyoming, owned by Charles E. Coughlin, Jr. located to the North of the present City limits between 15th Street and 30th Street as outlined in Exhibit "A" – Project Site, which is incorporated herein by this reference. The Project Site is intended to be purchased from Coughlin with a portion of the grant funds mentioned herein pursuant to the provisions of an option on the purchase of the property presently held by the City, together with some additional property, all which is deemed necessary for the successful operation of the project. Once the property is purchased by the City, it is intended to be annexed into the City with the proper zoning for the intended use.

3.2. **Grant Match and Project Contribution:** The City will be responsible for the grant match of 15% of total project costs eligible under BRC rules. The City agrees to pay for all costs associated with the project, including but not limited to annexation costs, taxes to the extent any exist, engineering, surveying and soil studies, insurance, and project management and administration for the installation of the infrastructure.

3.3 **Grant Documents Control.** It is understood between the parties that the terms and conditions for the expenditure of the grant funds, and the recapture of those funds, are to be controlled by the documents which are created and referenced by the Wyoming Business Council grant that is the basis for this agreement. This agreement is intended to conform to those terms and conditions, and define the roles and responsibilities of the parties in an effort to properly administer the grant funds for the public benefit.

Section III. Obligations and Responsibilities of the Parties

4.0 **Responsibilities and Obligations of the City:**

4.1 **Option to Purchase.** In anticipation of the requested funding from the Wyoming Business Council and the funds will be committed to the Project, the City has acquired an Option to Purchase the property described above from Mr. Coughlin, which is attached hereto as

"Attachment B" and incorporated herein by this reference. Upon receipt of the funds from the grant mentioned herein, the City shall use a portion of those funds to exercise the option and acquire the property.

4.2 In the event the funds are not obtained from the grant application, the City may terminate this agreement without recourse, but without claim for any funds expended in pursuit of the grant.

4.3. The City, in consultation with LEDC, agrees to prepare, submit, and sponsor an application to the Wyoming Business Council for a Business Ready Community Grant for the Project on or before September 1, 2012.

4.4. Notify WBC that LEDC is the designated community development organization with respect to the administration of the Grant.

4.5 The City shall construct and install the infrastructure that is designated in the grant into the Project Site.

4.6. The City's Project Representative identified in Paragraph 6.12. shall be authorized to act on the behalf of the City with respect to the Project. The City and/or its designee shall render decisions in a timely manner pertaining to documents submitted by the Project Manager in order to avoid unreasonable delay in the orderly and sequential progress of the Project Manager's services.

4.7 Additional responsibilities of the City, may be included within other paragraphs of this Agreement, including but not limited to paragraphs 5.5-6. below.

5.0 <u>Responsibilities and Obligations of the LEDC:</u>

5.1. LEDC shall meet the statutory definition of a Community Development Organization (CDO) as set forth in Wyo. Stat. §9-12-301 (a)(ii), and as a Wyoming Not-For-Profit company in accordance with Wyo. Stat. §17-19-101, et seq. during the term of this agreement. LEDC agrees to provide information, and to otherwise assist and consult with the City in the preparation and submission of the application for the Business Ready Community Grant on the Project to the Wyoming Business Council.

5.2. LEDC acknowledges and agrees that the Project and future development is to be designed and constructed to City's specifications, and, subject at all times to compliance with all applicable building codes and governmental laws, ordinances, and regulations.

5.3. LEDC shall make such recommendations for the design of the Project, and offer such assistance in the grant application process as may be requested by the City.

5.4. LEDC agrees to make recommendations as appropriate and take good faith efforts within budgetary and time constraints to best market, promote and advertise the project in the venues most likely to contact those entities and businesses which may be interested in the project site and the amenities found therein. The recommended marketing plan shall include the estimated budget for marketing and real estate services and shall be submitted to the City Manager April 1, 2013, or at such other date as may be mutually agreeable.

5.5. LEDC agrees to take ownership of the Project Site at such time as both parties agree that the improvements have been substantially completed and accepted by the City and the City Council approves the transfer of title by way of warranty deed to LEDC and LEDC accepts such transfer. Such transfer shall occur via a closing. At closing, the City shall execute and deliver a good and sufficient statutory warranty deed in favor of LEDC with no expectation of a transfer of funds, free and clear of all leases and tenancies, all liens and encumbrances, except:

i. Liens for special improvements disclosed to LEDC in writing;
ii. Building and zoning regulations;
iii. City, County and State subdivision laws; and
iv. Reservations, restrictions, covenants and easements of record in the real estate records of the grantor-Grantee index within the Albany County Clerk's office as of the date hereof.
v. The infrastructure that is present in or on the Project Site.

Thereafter closing, LEDC agrees to manage, promote, lease or sell the properties in the project site purely for the purpose of furthering the economic development opportunities of the community.

5.6 Title Insurance. Upon request from LEDC, the City shall furnish LEDC with a title insurance policy in the full amount of the appraised price, to be issued by a title company in its customary form guaranteeing record title to the subject property to be merchantable in City, subject to the allowed exceptions as stated in paragraph 6.E. above. A commitment for said title insurance shall be ordered by Seller and will be delivered to Buyer within thirty (30) days prior to closing. The cost for said owner's title guarantee insurance policy shall be borne by LEDC.

5.7 Title Contingency. Except as stated in Paragraph 6.5. above, if title is not merchantable or otherwise recordable and written notice of such defect(s) is given by LEDC to City within ten (10) days after LEDC's receipt of such commitment and shall not be rendered merchantable within thirty (30) days after such written notice, then this Agreement at LEDC's option, may be specifically enforced or may be declared void and of no effect, and each party hereto shall be released from all obligations hereunder and the payments made hereunder shall be thereupon returned forthwith to Buyer; PROVIDED, HOWEVER, that in lieu of correcting such defect(s), City may, within said thirty (30) days, obtain a commitment for an endorsement to or a separate owner's title insurance policy in the amount of the purchase price reflecting title insurance protection in regard to such defects(s), and LEDC shall accept the then existing

insured title in lieu of such merchantable title. LEDC shall pay the full premium for such owner's title insurance policy.

5.8 Taxes. To the extent any exist, all real estate taxes and assessments, if any, for the year of closing and personal property taxes, prepaid rents, water rents, sewer rents, if any, shall be prorated to the date of closing, using for such purpose the rate and valuation shown on the latest available tax assessment.

5.9 Fees, Closing Costs and Attorneys' Fees. LEDCs agrees to pay the standard closing fee, charged by a title company, should it exist at closing. Each party shall pay its own attorneys fees and costs. LEDC shall pay any costs associated with filing fees or costs incurred to record the change in ownership herein.

5.10 Risk of Loss. Risk of loss under the Agreement shall remain with City from the time of acquisition by the City pursuant to the Option attached as Exhibit "B" until date of closing wherein ownership is transferred by the City to LEDC.

5.11. Recapture of Grant Funds. LEDC shall develop and provide to the City Manager on March 1, 2013, or such other date as may be mutually agreed upon, a detailed Operational Business Plan for the technology business park which specifies the anticipated costs, the anticipated absorption rate, flow of income and the anticipated recovery of those public provided funds over the life of the project. The business plan should demonstrate how public investment in the project will be recaptured and designated for future economic development uses by LEDC, but no other economic development entity. Recaptured funds shall be used in accordance with the provisions of the Recapture Agreement, which is attached hereto as Attachment C and made a part hereof by this reference.

5.12. Annual Report. LEDC will provide an annual written report of the actual uses made of funds received under this Agreement to the City Manager within sixty (60) days of the end of each calendar year and identifying economic development outcomes of those uses.

5.13. Default. In the event that either party defaults on any or all of the provisions contained within this agreement, then the non-defaulting party shall have the following alternatives unless further amended by the parties:

Provide notice of the default to the defaulting party and require correction of said default within a period of time not to exceed thirty (30) days. The non-defaulting party may also choose to waive one or more defaults, and not have the waiver effect its decision on any subsequent defaults.

In the event notice is provided and the party alleged to be in default fails to adequately cure its default, the non-defaulting party may declare this Agreement to be terminated. The City may additionally require LEDC to assign its rights to the City

in each and every asset, including improvements and real property, by giving written notice of such decision, specifically but not limited to those requirements and provisions in paragraph 5.1 herein.

6.0 General Provisions.

6.1. Amendments. Either Party may request an amendment, change, modification or revision of this Agreement. Any amendment, change, modification or revision to this Agreement which is mutually agreed upon by and between the Parties shall be incorporated by written instrument, and shall become effective only when signed by both Parties. With regard to the City's approval of any such amendment, change, modification or revision, the City shall comply with any applicable procedural or public notice requirements.

6.2. Applicable Law. The laws of the State of Wyoming shall govern the construction, interpretation and enforcement of this Agreement. The courts of the State of Wyoming shall have jurisdiction over any action arising out of this Agreement and over the Parties, and venue shall be in the Second Judicial District, Albany County, Wyoming.

6.3. Assignment; Agreement Not Used as Collateral. The Parties shall not assign or otherwise transfer any of the rights, or delegate any of the duties, set forth in this Agreement without the prior written consent of the other party. For so long as LEDC is in compliance with, and performing this Agreement and the Lease Agreement according to their terms, then any corporate reorganization, whether by virtue of a sale of stock, or by consolidation or merger, which does not require an assignment of this Agreement, shall have no legal consequence under this Agreement. LEDC shall not use this Agreement, or any portion hereof, for collateral for any financial obligation without prior written consent by the parties.

6.4 Sale. LEDC agrees to notify the City if it intends to dissolve, divests itself of the majority of its corporate assets, or becomes insolvent. Such notice shall be provided in accordance with the notice provision of this Agreement. If City determines that the proposed dissolution, divestures or insolvency is not inconsistent with the continued satisfactory performance of Consultant's obligations under this Agreement, then City may, at its option, terminate or renegotiate the Agreement. The parties further agree and acknowledge that upon default and/or ownership of public infrastructure, the infrastructure or facility can be sold to a private entity without advertising the sale or calling for bids, provided that the applicant, makes a determination that the sale will benefit the economic development of the community, holds a public hearing, notice of which shall include the appraised value of all real properties involved and notice of proposed terms of any contract with a private entity and is published at least once each week for three (3) consecutive weeks in a newspaper of general circulation in the county in which the city or town is located. All sales must be done in accordance with all applicable statutes.

6.5. Liability. Each Party will be responsible for its own actions in providing services under this Agreement, and shall not be liable for any civil liability that may arise from the furnishing of the services by the other Party.

6.6. Indemnification.

6.6.1. LEDC shall indemnify, defend and hold harmless the City, and its officers, agents, employees, successors and assigns, from any and all claims, lawsuits, losses and liability arising out of LEDC's failure to perform any of LEDC's duties and obligations hereunder or in connection with the negligent performance of LEDC's duties or obligations, including but not limited to any claims, lawsuits, losses or liability arising out of LEDC's negligence.

6.6.2. LEDC shall be liable to the City for all damages and every expense, cost, attorneys' fees and payment incurred by the City to the extent caused by the negligence, negligent acts, errors, or omissions under this Agreement by LEDC or LEDC's sub consultants.

6.6.3. To the fullest extent permitted by law, LEDC agrees to indemnify, defend, protect, and hold harmless the City and City's agents, and their respective successors and assigns, from any and all claims, judgments, damages, penalties, fines, costs, liabilities, and losses (including, but not limited to, loss, or restriction on use of rented space or of any amenity of the Project and sums paid in settlement of claims, attorney fees, consultant fees, and expert fees) that arise during or after the term of this Agreement or the lease, directly or indirectly from the presence of hazardous materials or other problems with the Project Site on, in, or about the Project Site, which is actually caused or permitted by LEDC or LEDC's agents. This indemnification by LEDC of the City and City's representatives includes, but is not limited to, any and all costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal, or restoration work required by any federal, state, or local governmental agency or political subdivision because of the presence of that hazardous material in, on, or about the Project Site actually caused or permitted by LEDC. LEDC shall promptly notify the City of any release of hazardous materials in, on, or about the Project Site that LEDC or LEDC's agents become aware of during the term of this Agreement or the lease with LEDC, whether caused by LEDC, LEDC's agents, or any other persons or entities.

6.7. Sovereign Immunity. The City does not waive its sovereign immunity by entering into this Agreement, and retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this Agreement.

6.8. Third Party Beneficiary Rights. The Parties do not intend to create in any other individual or entity the status of a third party beneficiary, and this Agreement shall not be construed so as to create such status. The rights, duties and obligations contained in this Agreement shall operate only between the Parties, and shall inure solely to the benefit of the Parties. The Parties intend and expressly agree that only the Parties signatory to this Agreement

shall have any legal or equitable right to seek to enforce this Agreement, to seek any remedy arising out of a party's performance or failure to perform any term or condition of this Agreement, or to bring an action for the breach of this Agreement.

6.9. Force Majeure. No Party shall be liable for failure to perform under this Agreement if such failure to perform arises out of causes beyond the control and without the fault or negligence of the nonperforming party. Such causes may include, but are not limited to, acts of God or the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, and unusually severe weather. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays. This provision shall not be effective unless the failure to perform is beyond the control and without the fault or negligence of the nonperforming party.

6.10. Breach & Remedies. If a Party believes the other Party is in breach of any provision of this Agreement then such Party shall notify the other Party in writing of the alleged breach, including within such notice the facts of the conduct constituting the alleged breach and the steps necessary to cure the alleged breach. The Parties agree to meet within five (5) working days of such notice to discuss and attempt to resolve the alleged breach. If the alleged breach has not been cured or otherwise resolved within ten (10) calendar days of such meeting, then either Party may take such steps as it deems necessary and appropriate to enforce its rights under this Agreement; if such action involves the commencement of litigation, then the prevailing party shall be entitled to recover its costs, including reasonable attorney fees incurred in such court action.

6.11. Publicity. Any publicity of the program or services provided herein prior to the commencement of the transfer of title to the property prepared by LEDC or by an agent of LEDC, including, but not limited to, notices, information, pamphlets, press releases, research, reports, signs, and similar public notices, shall identify the City as the sponsoring agency, and shall not be released without prior written approval from the City. LEDC shall submit all such requests for approval of planned publicity to the City in writing. The City shall have ten (10) business days within which to review such requests, and shall not unreasonably withhold approval; if the City fails to reply to LEDC on any such request within ten (10) business days, then the City shall be deemed to have approved the request as submitted.

6.12. Designated Representatives & Notice. The City and LEDC hereby designate the below-named individuals as their respective Designated Representatives, with full power and authority to act on their respective behalves with regard to the Project:

City's Designated Representative(s) LEDC's Designated Representative

City's Designated Representative(s)	LEDC's Designated Representative
Janine Jordan, General Contact (City Manager)	Gaye Stockman, CEO
P.O. Box C Laramie, WY 82070	2523 E. Garfield, Suite A Laramie, WY 82070
telephone (307) 721-5243	telephone (307) 742-2212
facsimile (307) 721-5211	facsimile (307) 742-8200

All notices and invoices required in this Agreement shall be in writing, properly addressed to the named Designated Representatives, and mailed first-class, postage prepaid. All notices sent via U.S. Postal Services are deemed effective on the date of postmark. Notices and invoices mailed through another carrier (e.g., UPS or FedEx) are effective upon receipt.

6.13. Ownership of Documents/Work Product/Materials. All construction documents, including but not limited to the plans and specifications, whether complete or incomplete, together with any other reports, records, field notes, data, samples, specimens, and materials of any kind resulting from performance of this Agreement and which shall have been paid for by the City, shall be and remain the property of City, provided, however, that in the event the Project is not completed, LEDC shall have the right, but not the obligation, to purchase from the City all or any part of such documents and materials.

6.14. Severability. If a court of competent jurisdiction should determine that any provision of this Agreement is illegal or unenforceable, the remainder of the Agreement shall continue in full force and effect, and the Parties shall endeavor, in good faith, to negotiate a replacement for the provision which was determined to be illegal or unenforceable.

6.15. Titles Not Controlling. Titles of paragraphs are for reference only, and shall not control the construction of the language in this Agreement.

6.16. Waiver. The waiver of any breach of any term or condition in this Agreement shall not be deemed a waiver of any prior or subsequent breach.

6.17. Entirety of Agreement. This Agreement, consisting of 13 pages represents the entire and integrated Agreement between the Parties and supersedes all prior negotiations, representations and Agreements, whether written or oral.

THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK

IN WITNESS WHEREOF, the Laramie City Council has caused this Agreement to be signed and executed in its behalf by its Mayor, and duly attested by its City Clerk, and LEDC Corporation, has signed and executed this Agreement, the day and year first written above.

CITY OF LARAMIE, WYOMING

By: _____
Scott Mullner, Mayor and President of the City Council

Attest: _____
Sue Morris-Jones, MMC/City Clerk

City Attorney's Office
Approved as to Form:

_____
David Clark, City Attorney

ACKNOWLEDGMENT

STATE OF WYOMING)
)ss.
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Scott Mullner and Sue Morris-Jones, the Mayor and City Clerk of the City of Laramie, Wyoming, this 2 day of October, 2012.

Witness my hand and official seal.

ROBIN DESPAIN NOTARY PUBLIC
COUNTY OF ALBANY STATE OF WYOMING
MY COMMISSION EXPIRES NOVEMBER 7, 2013

_____
Notary Public

My Commission Expires: November 7, 2013

LEDC

By: Gaye Stockman
Gaye Stockman, CEO

By: Megan Goetz
Megan Goetz, Chair Board of Directors

Attest: Roy Schmett
Roy Schmett, Secretary

ACKNOWLEDGEMENT

STATE OF WYOMING)
) ss
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Gaye Stockman and Megan Goetz, known to me to be the CEO and Board Chair of **LEDC**, this 10th day of October, 2012.

Witness my hand and official seal.

JEANNIE CZECH - NOTARY PUBLIC
COUNTY OF ALBANY STATE OF WYOMING
MY COMMISSION EXPIRES JANUARY 12, 2014

Notary Public

My Commission expires January 12, 2014.

Attachment C

RECAPTURE AGREEMENT

THIS AGREEMENT is intended to be incorporated within the Contingency and Development Agreement executed by the parties, the City of Laramie (City) and the Laramie Economic Development Corporation (LEDC) concerning the development of the real property lying to the North of the present City limits between an extension of 15th Street and 30th Street referred to as Cirrus Sky Technology Park (Cirrus Sky) Phase I. The project is partially funded with a grant from the Wyoming Business Council and the City of Laramie. Those sources of funds are public in nature and must be properly spent for appropriate projects and uses. Once those funds have been expended the value of the property is anticipated to be significantly increased and available for sale or lease to businesses. It is the receipt of funds from those anticipated private sources to LEDC that are the subject of this agreement to insure that those funds are properly accounted for and expended for appropriate uses.

LEDC is anticipated to become the legal title holder of the Cirrus Sky Phase I property once the basic infrastructure has been installed, with the City reserving the ownership of the infrastructure. As the owner, LEDC is expected to further develop, market, promote and sell or lease the property to businesses which can make the best use of the property. The expenses that are incurred by LEDC are anticipated to be significant, together with the costs associated with the further development of the property.

The funds which are received by LEDC from the sale or lease of the Cirrus Sky Phase I property are to be used in the priorities set forth hereinafter. At such time as the development of the Cirrus Sky Phase I property has been completed, and such is recognized by the City in a resolution, then the requirement for the priority of development of the Cirrus Sky property shall be removed from the priority list.

The priority for expenditure of recaptured funds from the sale or lease of the Cirrus Sky property shall be for the further development of the property, including for a period specified below for all of the approved phases of development during the duration of this agreement. Not less than eighty percent (80%) of the recaptured funds as received from Phase I shall be devoted to the further development of the Cirrus Sky Phase I property and the specified match for grants to assist in the development of the specified improvements.

The priorities for the expenditure of the identified 80% of the recaptured funds shall be as follows for the period specified below:

A. Completion of the development of the Cirrus Sky project, as defined in the application to the Wyoming Business Council.
B. Matching any grant funds for any further development of the property adjoining the Cirrus Sky property which is situate to the West to the Laramie River, East to 45th

Street or to the North as part of a similar development for a period not to exceed five (5) years from the completion date of the Cirrus Sky property as specified elsewhere in this agreement.

The remaining percentage of recaptured funds shall be used for the below listed priorities:

a. Marketing and promotion of the Cirrus Sky property.
b. Marketing and promotion of the other facets of property within the Community which is available for economic development purposes.
c. Administrative costs of LEDC.
d. Other economic development projects and programs by LEDC within Albany County which have been approved by the City.

The recaptured funds shall be accounted separately by LEDC during the entire period of five years beyond the completion date of the Cirrus Sky property as recognized by the City by resolution. That accounting shall be in the form of an annual report due to the City on or before not less than 30 days prior to May 1 of each applicable year.

ATTACHMENT D TO
BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM
GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

OPTION
CONCERNING PURCHASE OF REAL PROPERTY

THIS OPTION CONCERNING PURCHASE OF REAL Property is made effective on the 2nd day of September, 2012, by and between the City of Laramie, a Wyoming Municipality ("City"), Laramie Economic Development Corporation, a Wyoming non-profit corporation ("LEDC") and the University of Wyoming ("UW").

RECITALS

WHEREAS, the Parties have executed an MOU regarding UW's involvement in the acquisition and development of a business technology park ("Cirrus Sky Technology Park" hereinafter referred to as "Cirrus Sky") by the City and LEDC; and

WHEREAS, the Parties acknowledge that UW's purchase of a portion of Cirrus Sky property is an essential component of the ability of the City and LEDC to successfully pursue the Wyoming Business Council (WBC) Business Ready Community grant (hereinafter referred to as "WBC grant")and eventual acquisition and development of Phase I of Cirrus Sky; and

WHEREAS, the WBC grant proceeds would be used by the City to exercise an option for purchase of the Cirrus Sky property from the current real property owner, Charles E. Coughlin, Jr., as well as to install ready-to-connect infrastructure (water, sewer, power, fiber and road) to the property. The scope of the purchase by the City and the infrastructure is further defined in the attached Exhibit "A" and known as "Phase I";

WHEREAS, that MOU contemplated execution of an Option (herein referred to as "Option") for UW to purchase a portion of the Cirrus Sky Technology Park:

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES CONTAINED HEREIN, AND OTHER GOOD AND VALUABLE CONSIDERATION, THE RECEIPT AND SUFFICIENCY OF WHICH IS HEREBY ACKNOWLEDGED, THE PARTIES AGREE AS FOLLOWS:

1. GRANT OF OPTION. In consideration of the sum of One Thousand Dollars ($1,000.00) paid by UW to the City, receipt of which is hereby acknowledged, the City hereby grants to UW an exclusive option to purchase the following described real property and premises (hereinafter referred to as "UW Parcel") which is an approximate 23.13 acres, more or

less, parcel of vacant land located in the south-west corner of the full Cirrus Sky property more clearly defined and denoted by the attached Exhibit "B" and generally known as:

> The south-west twenty-three and thirteen-hundredths acres of undeveloped real property to be potentially owned by the City which lays in Section 23, Township 16N, Range 73W, Albany County, Wyoming, West of an extension of 30th Street and East of an extension of 15th Street, Laramie, Wyoming, the south boundary of which shall be the north boundary of the envisioned City greenbelt trail property to be owned and operated by the City of Laramie.

It is further the intent of the Parties that if all or substantially all of the WBC grant to develop Phase I of the Cirrus Sky is awarded, that, subject to the contingencies and terms and conditions herein, UW intends to purchase the UW Parcel and locate its envisioned research and development park thereon. Except as otherwise provided herein and subject to the contingencies herein, if UW does not exercise the Option pursuant to Paragraph 3 herein or the Parties fail to execute a Contract for Purchase of Real Property as contemplated under Paragraph 5 herein, the City shall retain the payment from UW under this Paragraph, and neither the City nor LEDC shall have any other claim or cause of action against UW arising out of this Option.

2. **EFFECTIVE DATE; EXPIRATION DATE**. This Option shall become effective immediately upon the signatures of all the Parties and shall expire June 30, 2013, unless extended or renewed by mutual consent of the Parties. If the SLIB disapproves the City's application for the grant referenced in this Paragraph, or the City otherwise fails to acquire the Cirrus Sky property by June 30, 2013, then UW's payment under Paragraph 1 herein shall be refunded by the City to UW not later than thirty (30) days following such disapproval, and in no event later than August 1, 2013.

3. **NOTICE OF EXERCISE**. This Option is to be exercised, if at all, by UW by a written notice of intent to proceed signed by UW and sent to City and LEDC by United States postage paid mail, postmarked on or before the expiration date as provided in Paragraph 2 herein, addressed to City and LEDC at the following addresses:

City Manager of the City of Laramie
406 Ivinson Avenue
Laramie, Wyoming 82070

Laramie Economic Development Corporation
P.O. Box 1250

2523 East Garfield Street, Suite B
Laramie, WY 82073-1250

If UW issues a notice of intent to proceed under this Paragraph a commitment for title insurance shall be ordered by City and will be delivered to UW as soon as practicable following UW's issuance of the notice of intent.

4. CONTINGENCIES. This Option is subject to the contingencies identified herein:

A. FINANCING & FUNDING CONTINGENCY: The duties and obligations of all of the Parties to either offer or exercise this Option are contingent upon the following financing and funding contingencies:

i. The duties and obligations of the City to sell the Parcel to UW shall be expressly contingent upon the approval and award of the WBC grant and the subsequent acceptance of the grant award by the Laramie City Council for the purchase of the Cirrus Sky property and intended infrastructure developments and enhancements thereon in substantially the same form as the application submitted in August 2012.

ii. Any duties and obligations of LEDC to sell the Parcel to UW shall be expressly contingent upon the approval by the LEDC Board of Directors.

iii. The City and LEDC shall make good faith efforts to secure such additional sources of revenue sufficient to facilitate the implementation of the development plans for the Phase I Cirrus Sky project, and UW shall not impede such good faith efforts.

B. DUE DILIGENCE, UTILITIES AND INSPECTION CONTINGENCIES: This Option and the duties and obligations of the City, LEDC, and UW set forth herein are expressly contingent upon the approval by UW of the condition of the UW Parcel up and until the date of closing. This express contingency includes the following express understandings and agreements:

i. It is understood and agreed that the Parties have not to date agreed on a specific legal description of the UW Parcel to be sold hereby. This sale is completely contingent upon the Parties' good faith negotiation of an

agreement upon an appropriate legal description of approximately 23.13 acres in the approximate location identified on the attached Exhibits "A" and "B."

ii. It is understood and agreed that UW has to confirm that its purchase of the UW Parcel will allow it to comply with the rules, regulations, standards and policies of the various local, state, regional or national institutions, organizations and entities with which UW associates, from which UW receives certification or accreditation, or from which UW receives funding. As such, UW shall have up until closing to conduct inspections of the UW Parcel and to carry out any other investigations or analyses which are necessary to allow UW to make a decision whether it can proceed with the purchase. UW at its option shall have the right to inspect itself or to select licensed contractors or other qualified professionals to inspect the UW Parcel as to general condition including but not limited to matters of survey, electricity, gas, telephone, foundation, land size, boundaries, ingress and egress, water quality and quantity, access, fitness of UW's intended use and environmental hazards such as asbestos, formaldehyde, radon gas, lead based paint and any other hazardous materials on or near the UW Parcel. The City shall disclose to UW all environmental and archeological assessments with regard to the UW Parcel it conducts prior to closing of the sale of the UW Parcel. UW shall disclose to the City all environmental and archeological assessments with regard to the UW Parcel it conducts prior to closing of the sale of the UW Parcel.

5. TERMS OF SALE. In the event UW issues a notice of intent as provided in Paragraph 3 herein, the Parties shall in good faith negotiate and enter into a Contract for Purchase of Real Property as soon as reasonably practicable thereafter. The Parties acknowledge that the City may elect to transfer ownership of the Cirrus Sky property to LEDC prior to execution of the Contract for Purchase of Real Property. In that event, the references to the City in this Option shall apply to and be binding upon LEDC unless the context of the reference clearly means the City. The Parties agree that the Contract for Purchase of Real Property shall be subject to the following terms and conditions:

A. PURCHASE PRICE. The total purchase price of the UW Parcel shall be the total number of acres in the parcel times fourteen thousand dollars ($14,000.00) per acre which the Parties agree represents the fair market value of the property prior to the improvements to the Cirrus Sky property which are anticipated to be funded by the WBC community-ready grant.

B. DEED. At closing, the City shall execute and deliver a good and sufficient statutory warranty deed in favor of the UW Board of Trustees, free and clear of all leases and tenancies and including the release and waiver of all homestead rights, if any, and deliver the same to UW at the date of closing, conveying said UW Parcel free and clear of all liens and encumbrances, except:

i. Liens for special improvements disclosed to UW in writing within thirty (30) days of execution of this Option;

ii. Building and zoning regulations;

iii. City, County and State subdivision laws; and

iv. Reservations, restrictions, covenants and easements of record in the real estate records of the Grantor-Grantee index within the Albany County Clerk's office as of the date hereof.

Any encumbrance required to be paid shall be paid at the time of closing. Title shall be conveyed to UW as shown above.

C. CLOSING DATE. The closing of the transaction shall be specified in the Contract for Purchase of Real Property and occur as soon as practicable following execution of that Contract for Purchase of Real Property. Closing shall take place at the office of the title insurance company, or at such other location as mutually agreed by the Parties. If the sale closes, the sum of $1,000.00 paid by UW under Paragraph 1 herein shall be credited towards to the purchase price paid by UW.

D. IMPROVEMENTS. The Contract for Purchase of Real Property shall contain provisions memorializing the following:

a. The City and LEDC shall construct all improvements funded under the terms and conditions of the WBC grant for the Cirrus Sky project.

b. UW agrees that the UW Parcel shall be used exclusively for the purposes of a research and development park as contemplated in UW's 2011-2016 Capital Facilities Plan and University Plan 3 as approved by UW's Board of Trustees. In accordance with the grant application and the covenants for Cirrus Sky Phase I the UW properties will not accommodate industrial uses. UW envisions that the Wyoming Technology Business Center (WTBC) within UW's Office of Research and Economic Development will be the principal entity at UW involved with infrastructure development, marketing, and

business development services for the UW Parcel within the Cirrus Sky project.

c. UW shall be responsible for funding all other improvements on the UW Parcel.

d. UW shall not be responsible for funding improvements constructed by the City or LEDC in the Cirrus Sky project not located on UW's Parcel except that UW shall contribute funding in a manner and in amounts comparable with other landowners within the Cirrus Sky project for development and maintenance of the City-owned greenbelt trail bordering the UW property to the south. UW will contribute to maintenance and development of greenspace commons areas within the technology park in accordance with the covenants and commons area agreement to be developed by LEDC.

E. RECAPTURE PLAN. The Parties understand that as part of the WBC grant application and approval process, a recapture plan is required. The Contract for Purchase of Real Property shall contain provisions memorializing that:

a. The purchase price paid by UW to the City shall be used by the City and LEDC for recapture purposes as specified in the terms and conditions of the WBC grant.

b. UW agrees that all proceeds it receives from the sale of real property within the UW Parcel in excess of its cost of acquisition shall be used only for the following:

i. Costs associated with the marketing and sale of real property within the UW Parcel, including cooperative marketing efforts with the City and LEDC for the Cirrus Sky project;

ii. Costs associated with improvements located within the UW Parcel which improvements shall be to further the UW research and development park;

iii. Contributions toward the development and maintenance of the City-owned greenbelt trail, and other greenspace common areas within the technology park in accordance with the covenants and common area agreement to be developed by LEDC;

iv. Costs of providing business development and other economic development services to businesses located within the UW Parcel;

v. Costs of providing business development and other economic development services to businesses, in coordination with LEDC, located in the Cirrus Sky project but not located within the UW Parcel;

vi. If agreed to by all the Parties, other expenditures that would promote both the success of the UW research and development park and the Cirrus Sky project;

vii. Funding for economic development programs of the WTBC, which shall be the lowest priority.

6. MISCELLANEOUS PROVISIONS.

A. BINDING EFFECT. This Option shall be binding upon and inure to the benefit of the Parties hereto and their respective heirs, legal representatives, and assigns.

B. NON-WAIVER. No delay or failure by any Party to exercise any right hereunder, and no partial or single exercise of such right shall constitute a waiver of that or any other right, unless otherwise expressly provided herein.

C. HEADINGS. Headings in this Option are for convenience only and shall not be used to interpret or construe its provisions.

D. GOVERNING LAW/JURISDICTION. This Option shall be construed in accordance with and governed by the laws of the State of Wyoming. Jurisdiction and venue for any dispute shall be the courts of the State of Wyoming, Albany County.

E. TIME OF ESSENCE. Time is of the essence of this Option.

F. ENTIRE AGREEMENT AND AMENDMENTS. All prior understandings and agreements among the Parties regarding UW's intent to purchase the UW Parcel are merged in this Option, which constitutes the entire and sole agreement among the Parties. No Party relies upon any statement or representation made by anyone unless contained herein. Any changes, modifications, revisions or amendments to this Option which are mutually

agreed upon by the Parties shall be incorporated by written instrument, and effective when executed and signed by all Parties to this Option.

G. NOTICES. All notices hereunder shall be in writing and delivered personally or mailed by United States mail, addressed to the Parties as forth below.

UW's address shall be:

Vice President for Research and Economic Development
University of Wyoming
Dept. 3355
1000 East University
Laramie, WY 82071

City's address shall be:

City Manager of the City of Laramie
406 Ivinson Avenue
Laramie, Wyoming 82070.

LEDC's address shall be:

Laramie Economic Development Corporation
P.O. Box 1250
2523 East Garfield Street, Suite B
Laramie, WY 82073-1250

Either party may notify the other party in writing of a different address for notice hereunder.

H. SEVERABILITY. If any provision of this Option is held to be illegal or unenforceable, the remaining provisions shall be considered valid and enforceable.

J. LEGAL CONSEQUENCES. The Parties hereto acknowledge that signing this document has legal consequences. Each Party has either consulted with legal counsel or been given

sufficient opportunity to consult with legal counsel regarding the legal consequences of signing this document.

IN WITNESS WHEREOF the Parties have set their hands the day and year first above written.

CITY
CITY OF LARAMIE, WYOMING

By: _____ 10·2·2012
Scott Mullner, Mayor and President of the City Council — Date

Attest: _____ 10-2-2012
Sue Morris-Jones, ||MC — Date
City Clerk

LEDC
LARAMIE ECONOMIC DEVELOPMENT CORPORATION:

By: _____ 9/13/12
Megan Goetz, Board Chair — Date

_____ 9/13/12
Dave Coffey, Board Vice Chair — Date

_____ 9/13/12
Gaye Stockman, President & CEO — Date

ORIGINAL
12051

BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM AMENDMENT NUMBER ONE TO GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

1. **Parties.** This Amendment is made and entered into by and between the State of Wyoming, through the Wyoming Business Council ("WBC"), whose address is 214 West 15th Street, Cheyenne, WY 82002; and the City of Laramie, a political subdivision of the State of Wyoming ("Grantee"), whose address is P.O. Box C, Laramie, WY 82073.

2. **Purpose of Amendment.** This Amendment shall constitute the first Amendment to the Grant Agreement between the WBC and the Grantee which was duly executed on February 1, 2013, and which became effective February 26, 2013. The purpose of this Amendment is to replace Attachment B with Attachment E to revise line item budget amounts for Construction and Non-Construction costs. These changes do not affect the awarded grant amount, Grantee's committed match, or total project cost.

The original Grant Agreement provided Business Ready Community Grant and Loan Program ("BRC") Community Readiness grant funds to Grantee for the purchase of 149 acres on the northern edge of the city limits between 15th Street and 30th Street, connected with Asphalt Lane on the north to begin development of Cirrus Sky Technology Park for the total grant amount of five million four hundred sixty-six thousand three hundred thirty-one dollars ($5,466,331), with a Construction Service completion date of June 30, 2015, and a Grant Agreement expiration date of June 30, 2018.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto, and shall remain in full force and effect through the term of the Grant Agreement, as amended, unless terminated pursuant to the provisions of the Grant Agreement, or pursuant to federal or state statute or rule or regulation.

4. **Payment.** No payment shall be made by either party to the other party as a result of this Amendment.

5. **Additional Responsibilities of WBC.** The WBC shall not take on any additional responsibilities as a result of this Amendment.

6. **Additional Responsibilities of Grantee.** The Project to be undertaken is described in Attachment E, which is made a part of this Grant Agreement. The Grantee shall not take on any additional responsibilities as a result of this Amendment.

7. **Special Provisions**

A. **Same Terms and Conditions.** With the exception of items explicitly delineated in this Amendment, all terms and conditions of the Grant Agreement between the WBC and the Grantee, including but not limited to sovereign immunity, and including all prior amendments to this Grant Agreement, shall remain unchanged and in full force and effect.

8. **General Provisions**

A. **Entirety of Grant Agreement** This Grant Agreement, consisting of eight (8) pages, Attachment A, consisting of one (1) page, and Attachment B. consisting of one (1) page, and Attachment C, consisting of fourteen (14) pages. and Attachment D. consisting of ten (10) pages. and this Amendment One. consisting of three (3) pages. and Attachment E. consisting of one (1) page, represents the entire and integrated Grant Agreement between the parties and supersedes all prior negotiations, representations, and agreements, whether written or oral.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

9. **Signatures.** In witness thereof, the parties to this Amendment through their duly authorized representatives have executed this Amendment on the days and dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment as set forth herein.

The effective date of this Amendment is the date of the signature last affixed to this page.

WYOMING BUSINESS COUNCIL

Shawn Reese — 10-31-14
Shawn Reese
Chief Executive Officer
Date

10.29.14
Molly Spangler, Director
Investment Ready Communities
Date

CITY OF LARAMIE

Ted Paulekas Mayor — 10-22-14
Dave Paulekas, Mayor
City of Laramie
Date

ATTORNEY GENERAL'S OFFICE APPROVAL AS TO FORM

S. Jane Caton # 12051 — 9-16-14
S. Jane Caton
Senior Assistant Attorney General
Date

ATTACHMENT E TO THE BUSINESS READY COMMUNITY GRANT AND LOAN PROGRAM GRANT AGREEMENT BETWEEN THE WYOMING BUSINESS COUNCIL AND THE CITY OF LARAMIE

Amendment One Projected Grant Expenditure Schedule for Laramie - Cirrus Sky Technology Park					
DESCRIPTION	BRC	MATCH			TOTAL
		Cash (City)	In-kind (City)		
Land Acquisition	$1,343,200	$116,800	$	874,914	$2,334,914
Non Construction Costs	$31,305	$2,722	$	351,225	$385,252
Construction Costs	$4,091,826	$380,478	$	1,305,750	$5,778,054
Total Project Cost	$5,466,331	$500,000	$	2,531,889	$8,498,220

For the above Projected Grant Expenditure Schedule "Non Construction Costs" include: appraisal, architectural, engineering, and project inspection fees; "Construction Costs" include: site work, materials, labor, utilities, and contingencies.

This grant is incrementally funded as costs are incurred according to the above Projected Grant Expenditure Schedule. The WBC will release funds only after payment vouchers or invoices approved by the Grantee are submitted to the WBC. After receipt of cash requests and billing documentation, the WBC will pay the amounts of invoices at ninety-two percent (92%). Verification of all in-kind contributions must be submitted to the WBC.

If actual costs of the project are more than the available funds indicated in Attachment B. Grantee agrees to pay the difference in the amount of funds awarded through the BRC Program and the actual costs of the completed Project.

If there is additional funding for the project, the Grantee must provide the WBC with all necessary information regarding the funding.

CONTINGENCY & DEVELOPMENT AGREEMENT
Between the City of Laramie and Laramie Economic Development Corporation for
Economic Development Project To Develop a Technology Business Park North of City Limits

This Contingency & Development Agreement (hereinafter referred to as the "Agreement") is made and entered into this 02nd day of October, 2012, by and between the City of Laramie, Wyoming (hereinafter referred to as "**City**"), a Wyoming municipal corporation, whose address is 406 Ivinson Avenue, Laramie, Wyoming 82070, and the Laramie Economic Development Corporation **(LEDC)**, a Wyoming non-profit corporation and Community Development Corporation in the State of Wyoming, whose address is 2523 E. Garfield St. Suite B, Laramie, Wyoming 82070.

Section I. Project Description

A. LEDC is a Wyoming non-profit corporation and community development organization formed and duly authorized under Wyoming State Statute. The Business Ready Community Grant and Loan Program authorizes project administration by a community development organization other than the grant applicant pursuant to a written agreement between the applicant and the community development organization.

B. The **City** intends to apply to the Wyoming Business Council for a Business Ready Community Grant and Loan Program award under the Community Readiness funding category in the amount of Five Million Four Hundred Thousand Dollars ($5,400,000.00) (hereinafter referred to as the "Grant"). The proposed Community Readiness Project will purchase the property ("Project Site") currently owned by Charles E. Coughlin, Jr. that is located to the North of the City limit between 15th Street and 30th Street, more particularly defined by the attached Exhibit "A." The **City** has acquired an option to purchase the Project Site and intends to exercise that option with a portion of the grant funds mentioned herein, more particularly defined by the attached Exhibit "B." The remaining funds from the grant are to be used to install certain infrastructure in and around the Project Site in order to provide a ready site for potential users of the site who have an interest in the specific amenities available on the site in accordance with the details provided in the grant application, hereinafter referred to as the "Project." It is the agreement and intention of the parties, that following completion of the necessary infrastructure at the Project Site, and annexation of the Project Site into the City of Laramie, the City shall transfer title of the entire Project Site by way of Warranty Deed to **LEDC** not later than January 1, 2015. It is of benefit to the **City** and saves **City** resources to request that **LEDC** utilize its expertise to administer the project once the improvements have been accepted by the City and the City Council approves the transfer of deed title.

C. The **City** and **LEDC** believe the Project will create a substantial public benefit to both Laramie and Albany County, in the form of job creation, expansion of the tax base, and

increased economic development opportunities. Though the project will not immediately affect Laramie's economy and tax base, it will greatly help to facilitate business recruitment and retention opportunities by creating a business park suitable to certain identifiable businesses in need of high electric power usage and intensive telecommunication options, which is currently unavailable in Laramie. As these recruitment and retention opportunities come to fruition, they will in turn result in job creation or preservation thereby helping to produce additional (sales) tax revenue and stimulate the economy.

Section II. Agreement

Now, therefore, in exchange of the mutual promises exchanged herein, the **City** and **LEDC** hereby agree as follows:

1.0 Contingencies; Termination; Assumption of Business Risks. This Agreement is contingent upon approval of the Business Ready Grant Application in the full amount of Five Million Four Hundred Thousand Dollars ($5,400,000.00) by the Wyoming Business Council and the State Loan and Investment Board, and the funding of the Grant in the full amount of the application. Should a lesser amount be awarded, the Agreement will be amended or terminated accordingly.

1.1. The **City** and **LEDC** shall each have the unilateral right to terminate this Agreement, for any reason, at any time prior to the time Grant funds are expended on the Project.

1.2. The Parties acknowledge that the application for grant funding to the Wyoming Business Council requires the **City** as applicant, to solicit citizen input through a published public hearing before submission of an application and adoption of a resolution by the **City** Council. In the event the City Council does not pass a resolution supporting the application by the **City** to the Wyoming Business Council for grant funds for this Project, the **City** shall have the right to declare this Agreement null and void and of no further force or effect, whereupon, the Parties shall be released from performing all obligations, covenants, and promises contained in this Agreement, and each party shall bear and be solely responsible for the payment of all costs and expenses of any kind or nature that it has incurred pursuant to this Agreement.

1.3. The Parties agree that nothing in this Agreement shall be construed to mean that the **City** is obligated to proceed with the Project if it does not receive the requested funding from the Wyoming Business Council, nor shall anything be construed to mean the **City** is obligated to expend further funds for the Project in excess of the funds received from the Wyoming Business Council, unless **LEDC** provides appropriate assurances of payment of such excess amounts.

1.4. **LEDC** assumes all business risks that the Application may not be approved, and, if approved, that the Grant may not be funded.

2.0 Term of Agreement. This Agreement shall become effective upon execution, and shall remain in full force and effect for the term of the development of the property pursuant to Paragraph 3.3 below and for the term of the grant agreement with the Wyoming Business Council if the grant is awarded. The term of this agreement shall include the entire period from the transfer of title to **LEDC** until such time as **LEDC** has completely removed itself from the ownership of the Project, or any property interest therein, including reversionary interests, or payments therefor.

3.0 Grant Match & Consideration. Now, therefore, in consideration of the matters noted above and of the mutual benefits and obligations set forth in this Agreement, **City** and **LEDC** hereby agree as follows:

3.1 Location: The land upon which the Project will be constructed will comprise an approximately 149 acre tract in Albany County, Wyoming, owned by Charles E. Coughlin, Jr. located to the North of the present City limits between 15th Street and 30th Street as outlined in Exhibit "A" – Project Site, which is incorporated herein by this reference. The Project Site is intended to be purchased from Coughlin with a portion of the grant funds mentioned herein pursuant to the provisions of an option on the purchase of the property presently held by the **City**, together with some additional property, all which is deemed necessary for the successful operation of the project. Once the property is purchased by the City, it is intended to be annexed into the City with the proper zoning for the intended use.

3.2. Grant Match and Project Contribution: The **City** will be responsible for the grant match of 15% of total project costs eligible under BRC rules. The **City** agrees to pay for all costs associated with the project, including but not limited to annexation costs, taxes to the extent any exist, engineering, surveying and soil studies, insurance, and project management and administration for the installation of the infrastructure.

3.3 Grant Documents Control. It is understood between the parties that the terms and conditions for the expenditure of the grant funds, and the recapture of those funds, are to be controlled by the documents which are created and referenced by the Wyoming Business Council grant that is the basis for this agreement. This agreement is intended to conform to those terms and conditions, and define the roles and responsibilities of the parties in an effort to properly administer the grant funds for the public benefit.

Section III. Obligations and Responsibilities of the Parties

4.0 Responsibilities and Obligations of the City:

4.1 Option to Purchase. In anticipation of the requested funding from the Wyoming Business Council and the funds will be committed to the Project, the **City** has acquired an Option to Purchase the property described above from Mr. Coughlin, which is attached hereto as

"Attachment B" and incorporated herein by this reference. Upon receipt of the funds from the grant mentioned herein, the **City** shall use a portion of those funds to exercise the option and acquire the property.

4.2 In the event the funds are not obtained from the grant application, the **City** may terminate this agreement without recourse, but without claim for any funds expended in pursuit of the grant.

4.3. The **City**, in consultation with **LEDC**, agrees to prepare, submit, and sponsor an application to the Wyoming Business Council for a Business Ready Community Grant for the Project on or before September 1, 2012.

4.4. Notify WBC that **LEDC** is the designated community development organization with respect to the administration of the Grant.

4.5 **The City** shall construct and install the infrastructure that is designated in the grant into the Project Site.

4.6. The **City**'s Project Representative identified in Paragraph 6.12. shall be authorized to act on the behalf of the **City** with respect to the Project. The **City** and/or its designee shall render decisions in a timely manner pertaining to documents submitted by the Project Manager in order to avoid unreasonable delay in the orderly and sequential progress of the Project Manager's services.

4.7 Additional responsibilities of the **City**, may be included within other paragraphs of this Agreement, including but not limited to paragraphs 5.5-6. below.

5.0 Responsibilities and Obligations of the LEDC:

5.1. **LEDC** shall meet the statutory definition of a Community Development Organization (CDO) as set forth in Wyo. Stat. §9-12-301 (a)(ii), and as a Wyoming Not-For-Profit company in accordance with Wyo. Stat. §17-19-101, et seq. during the term of this agreement. **LEDC** agrees to provide information, and to otherwise assist and consult with the **City** in the preparation and submission of the application for the Business Ready Community Grant on the Project to the Wyoming Business Council.

5.2. **LEDC** acknowledges and agrees that the Project and future development is to be designed and constructed to **City**'s specifications, and, subject at all times to compliance with all applicable building codes and governmental laws, ordinances, and regulations.

5.3. **LEDC** shall make such recommendations for the design of the Project, and offer such assistance in the grant application process as may be requested by the **City**.

5.4. **LEDC** agrees to make recommendations as appropriate and take good faith efforts within budgetary and time constraints to best market, promote and advertise the project in the venues most likely to contact those entities and businesses which may be interested in the project site and the amenities found therein. The recommended marketing plan shall include the estimated budget for marketing and real estate services and shall be submitted to the City Manager April 1, 2013, or at such other date as may be mutually agreeable.

5.5. **LEDC** agrees to take ownership of the Project Site at such time as both parties agree that the improvements have been substantially completed and accepted by the City and the City Council approves the transfer of title by way of warranty deed to LEDC and LEDC accepts such transfer. Such transfer shall occur via a closing. At closing, the **City** shall execute and deliver a good and sufficient statutory warranty deed in favor of LEDC with no expectation of a transfer of funds, free and clear of all leases and tenancies, all liens and encumbrances, except:

i. Liens for special improvements disclosed to LEDC in writing;
ii. Building and zoning regulations;
iii. City, County and State subdivision laws; and
iv. Reservations, restrictions, covenants and easements of record in the real estate records of the grantor-Grantee index within the Albany County Clerk's office as of the date hereof.
v. The infrastructure that is present in or on the Project Site.

Thereafter closing, LEDC agrees to manage, promote, lease or sell the properties in the project site purely for the purpose of furthering the economic development opportunities of the community.

5.6 **Title Insurance.** Upon request from **LEDC, the City** shall furnish **LEDC** with a title insurance policy in the full amount of the appraised price, to be issued by a title company in its customary form guaranteeing record title to the subject property to be merchantable in **City**, subject to the allowed exceptions as stated in paragraph 6.E. above. A commitment for said title insurance shall be ordered by Seller and will be delivered to Buyer within thirty (30) days prior to closing. The cost for said owner's title guarantee insurance policy shall be borne by **LEDC**.

5.7 **Title Contingency.** Except as stated in Paragraph 6.5. above, if title is not merchantable or otherwise recordable and written notice of such defect(s) is given by LEDC to City within ten (10) days after LEDC's receipt of such commitment and shall not be rendered merchantable within thirty (30) days after such written notice, then this Agreement at LEDC's option, may be specifically enforced or may be declared void and of no effect, and each party hereto shall be released from all obligations hereunder and the payments made hereunder shall be thereupon returned forthwith to Buyer; PROVIDED, HOWEVER, that in lieu of correcting such defect(s), City may, within said thirty (30) days, obtain a commitment for an endorsement to or a separate owner's title insurance policy in the amount of the purchase price reflecting title insurance protection in regard to such defects(s), and LEDC shall accept the then existing

insured title in lieu of such merchantable title. LEDC shall pay the full premium for such owner's title insurance policy.

5.8 Taxes. To the extent any exist, all real estate taxes and assessments, if any, for the year of closing and personal property taxes, prepaid rents, water rents, sewer rents, if any, shall be prorated to the date of closing, using for such purpose the rate and valuation shown on the latest available tax assessment.

5.9 Fees, Closing Costs and Attorneys' Fees. LEDCs agrees to pay the standard closing fee, charged by a title company, should it exist at closing. Each party shall pay its own attorneys fees and costs. LEDC shall pay any costs associated with filing fees or costs incurred to record the change in ownership herein.

5.10 Risk of Loss. Risk of loss under the Agreement shall remain with City from the time of acquisition by the City pursuant to the Option attached as Exhibit "B" until date of closing wherein ownership is transferred by the City to LEDC.

5.11. Recapture of Grant Funds. **LEDC** shall develop and provide to the City Manager on March 1, 2013, or such other date as may be mutually agreed upon, a detailed Operational Business Plan for the technology business park which specifies the anticipated costs, the anticipated absorption rate, flow of income and the anticipated recovery of those public provided funds over the life of the project. The business plan should demonstrate how public investment in the project will be recaptured and designated for future economic development uses by **LEDC**, but no other economic development entity. Recaptured funds shall be used in accordance with the provisions of the Recapture Agreement, which is attached hereto as Attachment C and made a part hereof by this reference.

5.12. Annual Report. **LEDC** will provide an annual written report of the actual uses made of funds received under this Agreement to the City Manager within sixty (60) days of the end of each calendar year and identifying economic development outcomes of those uses.

5.13. Default. In the event that either party defaults on any or all of the provisions contained within this agreement, then the non-defaulting party shall have the following alternatives unless further amended by the parties:

> Provide notice of the default to the defaulting party and require correction of said default within a period of time not to exceed thirty (30) days. The non-defaulting party may also choose to waive one or more defaults, and not have the waiver effect its decision on any subsequent defaults.
>
> In the event notice is provided and the party alleged to be in default fails to adequately cure its default, the non-defaulting party may declare this Agreement to be terminated. The City may additionally require **LEDC** to assign its rights to the **City**

in each and every asset, including improvements and real property, by giving written notice of such decision, specifically but not limited to those requirements and provisions in paragraph 5.1 herein.

6.0 General Provisions.

6.1. Amendments. Either Party may request an amendment, change, modification or revision of this Agreement. Any amendment, change, modification or revision to this Agreement which is mutually agreed upon by and between the Parties shall be incorporated by written instrument, and shall become effective only when signed by both Parties. With regard to the **City**'s approval of any such amendment, change, modification or revision, the **City** shall comply with any applicable procedural or public notice requirements.

6.2. Applicable Law. The laws of the State of Wyoming shall govern the construction, interpretation and enforcement of this Agreement. The courts of the State of Wyoming shall have jurisdiction over any action arising out of this Agreement and over the Parties, and venue shall be in the Second Judicial District, Albany County, Wyoming.

6.3. Assignment; Agreement Not Used as Collateral. The Parties shall not assign or otherwise transfer any of the rights, or delegate any of the duties, set forth in this Agreement without the prior written consent of the other party. For so long as **LEDC** is in compliance with, and performing this Agreement and the Lease Agreement according to their terms, then any corporate reorganization, whether by virtue of a sale of stock, or by consolidation or merger, which does not require an assignment of this Agreement, shall have no legal consequence under this Agreement. **LEDC** shall not use this Agreement, or any portion hereof, for collateral for any financial obligation without prior written consent by the parties.

6.4 Sale. **LEDC** agrees to notify the **City** if it intends to dissolve, divests itself of the majority of its corporate assets, or becomes insolvent. Such notice shall be provided in accordance with the notice provision of this Agreement. If **City** determines that the proposed dissolution, divestures or insolvency is not inconsistent with the continued satisfactory performance of Consultant's obligations under this Agreement, then **City** may, at its option, terminate or renegotiate the Agreement. The parties further agree and acknowledge that upon default and/or ownership of public infrastructure, the infrastructure or facility can be sold to a private entity without advertising the sale or calling for bids, provided that the applicant, makes a determination that the sale will benefit the economic development of the community, holds a public hearing, notice of which shall include the appraised value of all real properties involved and notice of proposed terms of any contract with a private entity and is published at least once each week for three (3) consecutive weeks in a newspaper of general circulation in the county in which the city or town is located. All sales must be done in accordance with all applicable statutes.

6.5. Liability. Each Party will be responsible for its own actions in providing services under this Agreement, and shall not be liable for any civil liability that may arise from the furnishing of the services by the other Party.

6.6. Indemnification.

6.6.1. **LEDC** shall indemnify, defend and hold harmless the **City**, and its officers, agents, employees, successors and assigns, from any and all claims, lawsuits, losses and liability arising out of **LEDC**'s failure to perform any of **LEDC**'s duties and obligations hereunder or in connection with the negligent performance of **LEDC**'s duties or obligations, including but not limited to any claims, lawsuits, losses or liability arising out of **LEDC**'s negligence.

6.6.2. **LEDC** shall be liable to the **City** for all damages and every expense, cost, attorneys' fees and payment incurred by the **City** to the extent caused by the negligence, negligent acts, errors, or omissions under this Agreement by **LEDC** or **LEDC**'s sub consultants.

6.6.3. To the fullest extent permitted by law, **LEDC** agrees to indemnify, defend, protect, and hold harmless the **City** and **City**'s agents, and their respective successors and assigns, from any and all claims, judgments, damages, penalties, fines, costs, liabilities, and losses (including, but not limited to, loss, or restriction on use of rented space or of any amenity of the Project and sums paid in settlement of claims, attorney fees, consultant fees, and expert fees) that arise during or after the term of this Agreement or the lease, directly or indirectly from the presence of hazardous materials or other problems with the Project Site on, in, or about the Project Site, which is actually caused or permitted by **LEDC** or **LEDC**'s agents. This indemnification by **LEDC** of the **City** and **City**'s representatives includes, but is not limited to, any and all costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal, or restoration work required by any federal, state, or local governmental agency or political subdivision because of the presence of that hazardous material in, on, or about the Project Site actually caused or permitted by **LEDC**. **LEDC** shall promptly notify the **City** of any release of hazardous materials in, on, or about the Project Site that **LEDC** or **LEDC**'s agents become aware of during the term of this Agreement or the lease with **LEDC**, whether caused by **LEDC**, **LEDC**'s agents, or any other persons or entities.

6.7. Sovereign Immunity. The **City** does not waive its sovereign immunity by entering into this Agreement, and retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this Agreement.

6.8. Third Party Beneficiary Rights. The Parties do not intend to create in any other individual or entity the status of a third party beneficiary, and this Agreement shall not be construed so as to create such status. The rights, duties and obligations contained in this Agreement shall operate only between the Parties, and shall inure solely to the benefit of the Parties. The Parties intend and expressly agree that only the Parties signatory to this Agreement

shall have any legal or equitable right to seek to enforce this Agreement, to seek any remedy arising out of a party's performance or failure to perform any term or condition of this Agreement, or to bring an action for the breach of this Agreement.

6.9. Force Majeure. No Party shall be liable for failure to perform under this Agreement if such failure to perform arises out of causes beyond the control and without the fault or negligence of the nonperforming party. Such causes may include, but are not limited to, acts of God or the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, and unusually severe weather. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays. This provision shall not be effective unless the failure to perform is beyond the control and without the fault or negligence of the nonperforming party.

6.10. Breach & Remedies. If a Party believes the other Party is in breach of any provision of this Agreement then such Party shall notify the other Party in writing of the alleged breach, including within such notice the facts of the conduct constituting the alleged breach and the steps necessary to cure the alleged breach. The Parties agree to meet within five (5) working days of such notice to discuss and attempt to resolve the alleged breach. If the alleged breach has not been cured or otherwise resolved within ten (10) calendar days of such meeting, then either Party may take such steps as it deems necessary and appropriate to enforce its rights under this Agreement; if such action involves the commencement of litigation, then the prevailing party shall be entitled to recover its costs, including reasonable attorney fees incurred in such court action.

6.11. Publicity. Any publicity of the program or services provided herein prior to the commencement of the transfer of title to the property prepared by **LEDC** or by an agent of **LEDC**, including, but not limited to, notices, information, pamphlets, press releases, research, reports, signs, and similar public notices, shall identify the **City** as the sponsoring agency, and shall not be released without prior written approval from the **City**. **LEDC** shall submit all such requests for approval of planned publicity to the **City** in writing. The **City** shall have ten (10) business days within which to review such requests, and shall not unreasonably withhold approval; if the **City** fails to reply to **LEDC** on any such request within ten (10) business days, then the **City** shall be deemed to have approved the request as submitted.

6.12. Designated Representatives & Notice. The **City** and **LEDC** hereby designate the below-named individuals as their respective Designated Representatives, with full power and authority to act on their respective behalves with regard to the Project:

City's Designated Representative(s)	**LEDC**'s Designated Representative

City's Designated Representative(s)	LEDC's Designated Representative
Janine Jordan, General Contact (City Manager)	Gaye Stockman, CEO
P.O. Box C Laramie, WY 82070	2523 E. Garfield, Suite A Laramie, WY 82070
telephone (307) 721-5243	telephone (307) 742-2212
facsimile (307) 721-5211	facsimile (307) 742-8200

All notices and invoices required in this Agreement shall be in writing, properly addressed to the named Designated Representatives, and mailed first-class, postage prepaid. All notices sent via U.S. Postal Services are deemed effective on the date of postmark. Notices and invoices mailed through another carrier (e.g., UPS or FedEx) are effective upon receipt.

6.13. Ownership of Documents/Work Product/Materials. All construction documents, including but not limited to the plans and specifications, whether complete or incomplete, together with any other reports, records, field notes, data, samples, specimens, and materials of any kind resulting from performance of this Agreement and which shall have been paid for by the **City**, shall be and remain the property of **City**, provided, however, that in the event the Project is not completed, **LEDC** shall have the right, but not the obligation, to purchase from the **City** all or any part of such documents and materials.

6.14. Severability. If a court of competent jurisdiction should determine that any provision of this Agreement is illegal or unenforceable, the remainder of the Agreement shall continue in full force and effect, and the Parties shall endeavor, in good faith, to negotiate a replacement for the provision which was determined to be illegal or unenforceable.

6.15. Titles Not Controlling. Titles of paragraphs are for reference only, and shall not control the construction of the language in this Agreement.

6.16. Waiver. The waiver of any breach of any term or condition in this Agreement shall not be deemed a waiver of any prior or subsequent breach.

6.17. Entirety of Agreement. This Agreement, consisting of 13 pages represents the entire and integrated Agreement between the Parties and supersedes all prior negotiations, representations and Agreements, whether written or oral.

THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK

IN WITNESS WHEREOF, the Laramie City Council has caused this Agreement to be signed and executed in its behalf by its Mayor, and duly attested by its City Clerk, and **LEDC** Corporation, has signed and executed this Agreement, the day and year first written above.

CITY OF LARAMIE, WYOMING

By: _____
Scott Mullner, Mayor and President of the City Council

Attest: _____
Sue Morris-Jones, MMC/City Clerk

City Attorney's Office
Approved as to Form:

_____
David Clark, City Attorney

ACKNOWLEDGMENT

STATE OF WYOMING)
)ss.
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Scott Mullner and Sue Morris-Jones, the Mayor and City Clerk of the City of Laramie, Wyoming, this 2 day of October, 2012.

Witness my hand and official seal.

ROBIN DESPAIN NOTARY PUBLIC
COUNTY OF ALBANY
STATE OF WYOMING
MY COMMISSION EXPIRES NOVEMBER 7, 2013

_____
Notary Public

My Commission Expires: November 7, 2013

LEDC

By: Gaye Stockman
Gaye Stockman, CEO

By: Megan Goetz
Megan Goetz, Chair Board of Directors

Attest: Roy Schmett
Roy Schmett, Secretary

ACKNOWLEDGEMENT

STATE OF WYOMING)
) ss
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Gaye Stockman and Megan Goetz, known to me to be the CEO and Board Chair of **LEDC**, this 10th day of October, 2012.

Witness my hand and official seal.

JEANNIE CZECH - NOTARY PUBLIC
COUNTY OF ALBANY STATE OF WYOMING
MY COMMISSION EXPIRES JANUARY 12, 2014

Notary Public

My Commission expires January 12, 2014

Attachment C

RECAPTURE AGREEMENT

THIS AGREEMENT is intended to be incorporated within the Contingency and Development Agreement executed by the parties, the City of Laramie (City) and the Laramie Economic Development Corporation (LEDC) concerning the development of the real property lying to the North of the present City limits between an extension of 15th Street and 30th Street referred to as Cirrus Sky Technology Park (Cirrus Sky) Phase I. The project is partially funded with a grant from the Wyoming Business Council and the City of Laramie. Those sources of funds are public in nature and must be properly spent for appropriate projects and uses. Once those funds have been expended the value of the property is anticipated to be significantly increased and available for sale or lease to businesses. It is the receipt of funds from those anticipated private sources to LEDC that are the subject of this agreement to insure that those funds are properly accounted for and expended for appropriate uses.

LEDC is anticipated to become the legal title holder of the Cirrus Sky Phase I property once the basic infrastructure has been installed, with the City reserving the ownership of the infrastructure. As the owner, LEDC is expected to further develop, market, promote and sell or lease the property to businesses which can make the best use of the property. The expenses that are incurred by LEDC are anticipated to be significant, together with the costs associated with the further development of the property.

The funds which are received by LEDC from the sale or lease of the Cirrus Sky Phase I property are to be used in the priorities set forth hereinafter. At such time as the development of the Cirrus Sky Phase I property has been completed, and such is recognized by the City in a resolution, then the requirement for the priority of development of the Cirrus Sky property shall be removed from the priority list.

The priority for expenditure of recaptured funds from the sale or lease of the Cirrus Sky property shall be for the further development of the property, including for a period specified below for all of the approved phases of development during the duration of this agreement. Not less than eighty percent (80%) of the recaptured funds as received from Phase I shall be devoted to the further development of the Cirrus Sky Phase I property and the specified match for grants to assist in the development of the specified improvements.

The priorities for the expenditure of the identified 80% of the recaptured funds shall be as follows for the period specified below:

A. Completion of the development of the Cirrus Sky project, as defined in the application to the Wyoming Business Council.
B. Matching any grant funds for any further development of the property adjoining the Cirrus Sky property which is situate to the West to the Laramie River, East to 45th

Street or to the North as part of a similar development for a period not to exceed five (5) years from the completion date of the Cirrus Sky property as specified elsewhere in this agreement.

The remaining percentage of recaptured funds shall be used for the below listed priorities:

a. Marketing and promotion of the Cirrus Sky property.
b. Marketing and promotion of the other facets of property within the Community which is available for economic development purposes.
c. Administrative costs of LEDC.
d. Other economic development projects and programs by LEDC within Albany County which have been approved by the City.

The recaptured funds shall be accounted separately by LEDC during the entire period of five years beyond the completion date of the Cirrus Sky property as recognized by the City by resolution. That accounting shall be in the form of an annual report due to the City on or before not less than 30 days prior to May 1 of each applicable year.

CITY OF LARAMIE COUNCIL WORK SESSION April 26, 2016

Agenda Item: Presentation

Title: Bill Nye Western Corridor

Recommended Council MOTION:

Work session; no action can be taken.

Administrative or Policy Goal:

Chapter 8, Transportation's Thoroughfare Improvement and Effective Capacity Management Goals and Action Statements state: "Update the Major Street and Highway Plan based on suggestions found within the plan. Changes are needed to lessen the rigid, non-planned location of many of the roads found in the Major Street and Highway Plan." (pg. 8-19); "Coordinate with WYDOT, Albany County and private property owners in conducting a traffic engineering and design study along collectors, arterials and other major roads to identify necessary and feasible improvements such as acceleration/deceleration lanes, turn lanes at major intersections, ROW property acquisition and the effective use of medians." (pg. 8-20); and "8. Streets facility standards should be replaced with the standards that give them the longest life and quality available at this time. This should help reduce the backlog of maintenance." (pg. 8-20).

Background:

On April 7, 2015 the City Council approved a Professional Services Agreement with AVI PC to complete the Bill Nye Avenue Corridor Study, with the purpose of analyzing the existing Bill Nye Avenue Corridor between south 9th Street and south 3rd Street. AVI PC and the City agreed to expand the geographical scope (at no additional cost) to include an alignment along 15th Street as another option. The adopted 2010 Major Street Plan, and its predecessors, call for an alignment that crosses Spring Creek on a new bridge at approximately 5th Street. The purpose for this study is to identify whether the existing alignment is acceptable, or if better alternatives exist.

This study is partly the result of recent City Council discussion regarding B.F.R. Development's compliance with the Delayed Improvement Agreement requiring construction of Bill Nye Avenue and other associated improvements as specified in the Agreement.

On February 9, 2016 AVI PC presented a draft of the final document to the City Council. The purpose of this presentation is to provide a summary of the final draft. It is anticipated that the final study will be available for adoption by resolution at the May 19, 2016 City Council meeting.

Legal/Statutory Authority:

n/a

BUDGET/FISCAL INFORMATION:

REVENUE

Source	Amount	Type
Fees/Charges for Service		
Grants for Projects	$50,000.00	WYDOT Cooperative Agreement: 04-07-2015
Loans on Project		
Other		
Total	$50,000.00	

EXPENSE

Project Cost.

Project Budget	Amount	Funds
Project Cost	$62,500.00	300-3315-410 73-20 Streets & Bridges
Loans on Project		
Grants for Project	$50,000.00	WYDOT Cooperative Agreement: 04-07-2015
Other/Outside Projects		
City's Amount	$12,500.00	
Contingency 0%	$0.00	
Total Amount	$62,500.00	

Amount spent to date (approved and adopted by Council)

Budget	Amount	Funds
Total Budget Allocation	$62,500.00	
Less Amount Spent to Date	$27,973.10	
Remainder of Budget	$34,526.90	

Responsible Staff:

Future dates are subject to change

Work Session	February 9, 2016, April 26, 2016
Advertised	
Public Hearing Held	
Pub. Hearing Advertised	
Introduction/1st Reading	May 19, 2016 (Resolution)
2nd Reading	
3rd Reading	

Attachments:

Bill Nye Avenue Corridor Study

Bill Nye Avenue Corridor Study

DRAFT

April 2016

Submitted By:

AVI pc
1103 Old Town Lane, Ste. 101
Cheyenne, Wyoming 82009
(307) 637-6017

Table of Contents

page #'s

Acknowledgements ..... 1 thru 2
- Lead Agencies 1
- Consultant Team 1
- Work Cited 2

1.0 Introduction ..... 3 thru 4

2.0 Glimpse ..... 5 thru 12
- Historical Review 5
- Existing Corridor and Boundary Conditions 5
- Utilities 6
- Drainage 6
- Bicycle Transportation 8
- Transit 9
- Environmental 9
- Current Traffic Conditions 9
- Traffic Safety 9
- Existing Land Use and Zoning 9

3.0 Foundation ..... 13 thru 16
- One-On-One Meetings 13
- Steering Committee 15
- Public Open House 15
- Laramie City Council Work Session 16
- Reference 16

4.0 Profile ..... 17 thru 29
- Foundation 1: Key-Planning Considerations 17
- Foundation 2: Key-Planning Considerations 17
- Foundation 3: Potential Funding Mechanisms 18
- Foundation 4: Environmental Constraints 19

5.0 Design ..... 30 thru 53
- Roadway Concept Alternatives 30

Design Guide Criteria 31
Cross Sectional Elements 32
Auxiliary Lanes (Speed-Change Lanes 34
Left Turn Lane 35
Right Turn Lane 35
Provision for Dry Utilities 35
Future Traffic Volume Conditions 38
Drainage and Detention 38
Alignment Alternatives 39
Right-Of-Way Requirements 41
Right-Of-Way Impacts For Alternates Two (2), Three (3), and Four (4) 45
Engineer's Opinion of Probable Costs 49
Conceptual Options and Recommended Alternative 49
Summary of Corridor Recommendations 53

Figure's page #'s

Figure 1.1 Major Street Plan Excerpt (Laramie Comprehensive Plan Map 8.1) 3
Figure 1.2 Project Area And Vicinity Map 4
Figure 2.1 Bill Nye Avenue West of 15th Street Looking West 5
Figure 2.2 Bill Nye Corridor Area at 15th Street Looking West 5
Figure 2.3 Bill Nye Avenue at 9th Street Looking East 5
Figure 2.4 South 3rd Street at Palmer Drive Looking North 6
Figure 2.5 Bill Nye Avenue at 9th Street Looking East 6
Figure 2.6 South 5th Street at Spring Creek Drive 6
Figure 2.7 FEMA Panel 1765 of 2500, Map Number 56001C1765E 7
Figure 2.8 Existing and Proposed; Bike and Trail Network 8
Figure 2.9 2013 Zoning Map 11
Figure 2.10 Bill Nye Corridor Study Existing Traffic Volumes 12
Figure 4.1 Future Land Use Map Detail Area 20
Figure 4.2 Future Land Use Map 3.2 29
Figure 5.1 Bike Lane Typical 33
Figure 5.2 Recommended Typical Section (Looking West) 36

Figure 5.3 Future Land Use 37
Figure 5.4 Gutter Turnouts 39
Figure 5.5 Linear Detention/Bioswale 39
Figure 5.6 Alternative 1: Do Nothing-Utilize 15th Street 41
Figure 5.7 Alternative 2: Realign Boswell 42
Figure 5.8 Alternative 3: E. Palmer Drive W/Cul-De-Sac on Boswell at 3rd Street 43
Figure 5.9 Alternative 4: Roundabout at 3rd Street/I-80 W/B Ramps 44
Figure 5.10 Right-Of-Way Requirements Alternative 2 46
Figure 5.11 Right-Of-Way Requirements Alternative 2 Detail 46
Figure 5.12 Right-Of-Way Requirements Alternative 3 47
Figure 5.13 Right-Of-Way Requirement Alternative 3 Detail 47
Figure 5.14 Right-Of-Way Requirements Alternative 4 48
Figure 5.15 Alternative Right-Of-Way Requirements Alternative 4 Detail 48

Table's page #' s

Table 2.1 (4) Four Year Crash Summary for Key Intersections 10
Table 3.1 Public Outreach Matrix 13
Table 4.1 Environmental Review Corridor Checklist 21
Table 5.1 Ultimate Typical Section Jurisdictional Comparison 31
Table 5.2 Jurisdictional Requirements For Auxiliary Lanes 34
Table 5.3 Summary of Right Requirements 45
Table 5.4 Cost Estimates 49
Table 5.5 Alternatives Analysis 51

Appendices page #'s

Appendix A Improvement Plans
Appendix B Public Meetings
Appendix C Presentations
Appendix D Cost Estimates
Appendix E Traffic Analysis
Appendix F Environmental

ACKNOWLEDGEMENTS

Lead Agencies

City of Laramie

City of Laramie; Community Development Department, PO Box C, 405 Grand Ave., Laramie, WY

Charles W. Bloom, AICP, Principal Planner

Wyoming Department of Transportation

District No. 1 Staff

District Traffic

Planning

Highway Safety Program

Consultant Team

AVI, Professional Corporation (AVI)
1103 Old Town Lane, Suite 101, Cheyenne, WY
Thomas D. Cobb, P.E., Project Manager
Brad E. Emmons, Principal
Jake Wilson, E.I.T.

Sustainable Traffic Solutions, Inc. (STS)
823 West 124th Drive, Westminster, CO
Joe Henderson, P.E

GreenScape Designs

333 W Drake Rd Suite 240, Ft. Collins, CO

Jennifer Gardner

Western EcoSystems Technology Inc. (WEST)

415 W 17th Street, Suite 200 Cheyenne, WY
Gretchen Norman, Project Manager

Kurt Flaig, Botanist

Numerous agencies, local associations and individuals devoted their time to the development of this document, including but not limited to:

City of Laramie

City of Laramie City Council

City of Laramie Community Development Department

City of Laramie Public Works

U.S. Department of Transportation

Federal Highway Administration

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

This report was funded in part through grant[s] from the Federal Highway Administration [and Federal Transit Administration], U.S. Department of Transportation. The views and opinions of the authors [or agency] expressed herein do not necessarily state or reflect those of the U. S. Department of Transportation.

Work Cited

- *Senate, U. (2012). 23 U.S. Code § 505 - State planning and research. Washington, D.C.: United States of America.*
- *(n.d.). (FEMA) regulated Spring Creek floodplain as shown on Flood Insurance Rate Map (FIRM), Panel 1765 of 2500, Map Number 56001C1765E, Effective June 16, 2011.*
- *Board, T. R. (2010). Highway Capacity Manual. National Research Council.*
- *Cheyenne, C. o. (2013). City of Cheyenne Unified Development Code. Cheyenne: City of Cheyenne.*
- *City of Laramie. (Issued March 2013). City of Laramie Standard Details. Laramie, WY: City of Laramie.*
- *County, A. (2016, March 15). Albany County GIS Web Map. Retrieved March 15, 2016, from Albany County Web Map: http://www.co.albany.wy.us/map/*
- *Group, A. P. (2012). Cheyenne On-Street Bicycle Plan and Greenway Plan Update. Cheyenne: City of Cheyenne, WY and Cheyenne Metropolitan Planning Organization.*
- *City of Laramie. 2007 Laramie Comprehensive Plan. Laramie, WY: City of Laramie.*
- *Laramie, C.o. (2010 Version 7.0 - Print Date: January 23, 2015). City of Laramie Unified Development Code. Laramie: City of Laramie.*
- *Officials, A. A. (2011). A Policy on Geometric Design of Highways and Streets. Washington, DC: American Association of State Highway and Transportation Officials.*
- *Officials, A. A. (2011). Roadside Design Guide. Washington, DC: American Association of State Highway and Transportation Officials.*
- *Officials, N. A. (2014). Urban Bikeway Design Guide, Second Edition. New York NY: National Association of City transportation Officials.*

1.0 INTRODUCTION

Bill Nye Avenue has recently gained significant momentum, as construction is underway between Vista Drive and Boulder Drive, in anticipation of the opening of the new Laramie High School. Public and private developers have incited each other with property development, and vertical construction. Consequently, corresponding sections of the Bill Nye Avenue corridor have now begun to be constructed.

The corridor is envisioned to be a major east-west Minor Arterial connecting the City's southern gateway with its eastern gateway (i.e. 3rd Street and Grand Avenue) in the 2007 Laramie Comprehensive Plan (Kendig West Collaborative, 2007). Planning efforts for this corridor area to date have yielded basic alignment concepts in the area between 3rd Street and Corthell Road. See **Figure 1.1 Major Street Plan Excerpt (Laramie Comprehensive Plan Map 8.1)**. A network corridor plan will allow adjacent property development to occur and corresponding infrastructure be built to accommodate both the short term needs of potential route users and long term needs of the community. A defined alternative needs to be created for the corridor to allow the roadway to be built in stages and development to move forward.

Figure 1.1 Major Street Plan Excerpt (Laramie Comprehensive Plan Map 8.1)

The boundaries of the Bill Nye Corridor Study are Russell Street to Interstate 80 (north to south) and 3rd Street and 15th Street (West and East) which is illustrated in more detail in **Figure 1.2 Project Area and Vicinity Map.** The primary purpose of the project is to create a comprehensive and practical planning document that guides and promotes future development of the corridor and surrounding area. After several discussions with the key members of the City, Wyoming Department of Transportation (WYDOT) and the U.S. Department of Transportation Federal Highway Administration (FHWA) staff, the goal of the project was to create a realistic alternative alignment and 35% design plan that resulted in a multi-model corridor which:

- Is sensitive to the needs of the property owners,
- Promotes safety,
- Minimizes long term maintenance,
- Serves all transportation users,
- Facilitates inner City connectivity,
- Encourages economic development.

The project was reviewed with oversight by a steering committee comprised of the following agencies or representative organizations:

- City of Laramie Community Development Division,
- City of Laramie Planning Division,
- City of Laramie Public Works Division,
- City of Laramie Engineering Division ,
- WYDOT District No. 1,
- WYDOT Planning Division,
- FHWA.

The Steering Committee assisted in the development of the study from inception to completion. Their principal role was to provide advice, input, guidance, and recommendations.

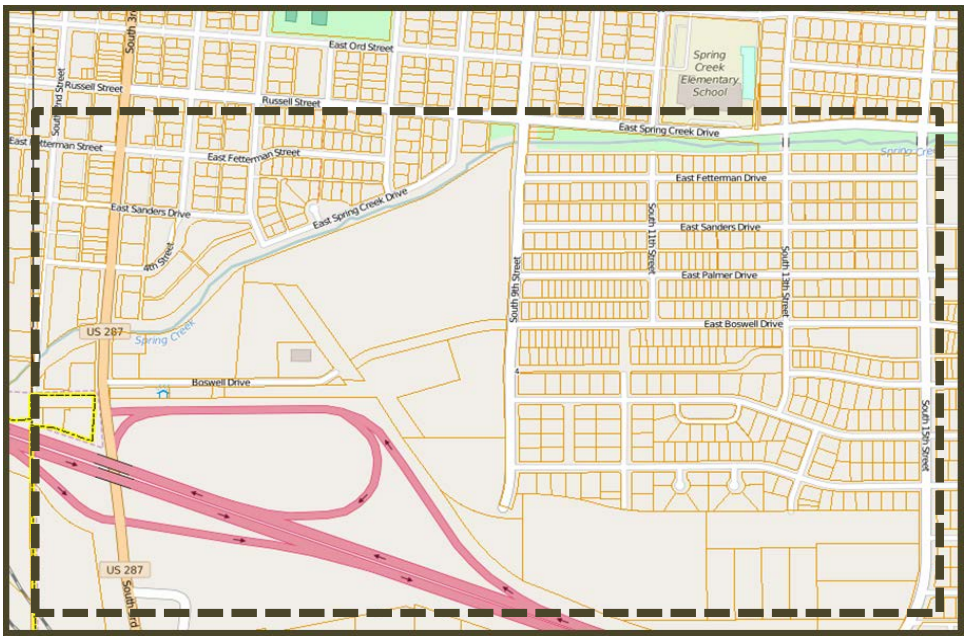


Figure 1.2 Project Area and Vicinity Map

2.0 GLIMPSE

The Glimpse section of the plan provides a summary of existing roadway and planning area.

Historical Review

The Bill Nye Corridor plan area is not a part of any historic districts. Additionally, the Wyoming State Historic Preservation Office (SHPO) website was reviewed for all the National Register listings in the area of the study and none were found.

Please note that if federal funds are used on any future projects or if a federal agency is part of the planning and implementation, a Section 106 Study will be required to determine potential impacts to any historic properties. Properties in the area of any construction impacts will be identified and evaluated based on the Secretary of Interior's Standards and Guidelines for identification. Several determinations can be made in the evaluation including the following:

- No historic properties affected,
- Historic property adversely affected,
- Historic property not adversely affected.

Existing Corridor and Boundary Conditions

Today the Bill Nye Avenue corridor is absent along this alignment except for some platted ROW on the east end where it connects to 15th Street. In this area, the roadway is gravel and provides access to industrial development. This is illustrated in **Figure 2.1 Bill Nye Avenue West of 15th Street Looking West** & **Figure 2.2 Bill Nye Corridor Area at 15th Street Looking West.** The next section of the corridor between the industrial area and 9th Street is comprised of native vegetation and sporadic overhead and underground utilities and is shown in **Figure 2.3 Bill Nye Avenue at 9th Street Looking East.**

The corridor area from 9th Street to Boswell Drive also consists of native vegetation and is constrained by newly

Figure 2.1 Bill Nye Avenue West of 15th Street Looking West

Figure 2.2 Bill Nye Corridor Area at 15th Street Looking West

Figure 2.3 Bill Nye Avenue at 9th Street Looking East

constructed storage units to the east and the Interstate 80 right-of-way to the west and south. Additionally, 9th Street at the location is constructed with a 48 foot wide curb and gutter street with asphalt surfacing. Sidewalks are only constructed adjacent to existing development north of the area see **Figure 2.3 Bill Nye Avenue at 9th Street Looking & Figure 2.5 Bill Nye Avenue at 9th Street Looking West**.

Boundary conditions on east and north portion of the corridor area vary from undeveloped, revitalized, and declining commercial to the east on South 3rd Street to single-family residential neighborhoods to the north on Sanders Street, South 5th Street, and East Spring Drive. **Figure 2.4 South 3rd Street at Palmer Drive Looking North** and **Figure 2.6 South 5th Street at Spring Creek Drive.**

Utilities

Based on observed surface locates and following utilities have been identified:

- Rocky Mountain Power Electric, Underground Gas;
- Black Hills Energy: Natural Gas;
- Charter Communications: Overhead Cable/ Phone;
- Century Link: Underground Phone;
- City of Laramie: Underground Water and Sewer.

Further development in the corridor will require wet and dry utility infrastructure to be expanded to support future development. Water and sewer utilities are available at South 15th Street, South 9th Street, Boswell, and South 3rd Street.

Drainage

Portion of the Bill Nye Avenue Corridor study area are within the Federal Emergency Management Agency **((FEMA) regulated Spring Creek floodplain as shown on Flood Insurance Rate Map (FIRM), Panel 1765 of 2500, Map Number 56001C1765E, Effective June 16, 2011. https://msc.fema.gov/portal.)**

Figure 2.4 South 3rd Street at Palmer Drive Looking North

Figure 2.5 Bill Nye Avenue at 9th Street Looking West

Figure 2.6 South 5th Street at Spring Creek Drive

Areas near Spring Creek appear to be within Zone AE while a majority of the corridor area is within the Unshaded Zone X. Zone AE is Special Flood Hazard Area (i.e. SFHA) subject to inundation by the 1% annual chance flood while Unshaded Zone X are classified to be outside the 0.2% annual chance floodplain. Future projects depicting the development of the roadway will require a Floodplain Development Permit through the Albany County Planning Department and City of Laramie. Detailed hydraulic and hydrologic modeling efforts along with sound engineering judgment will be critical to overall success of the future final plan development. A FEMA FIRM excerpt showing the area of the study is shown in **Figure 2.7 FEMA Panel 1765 of 2500, Map Number 56001C1765E**.

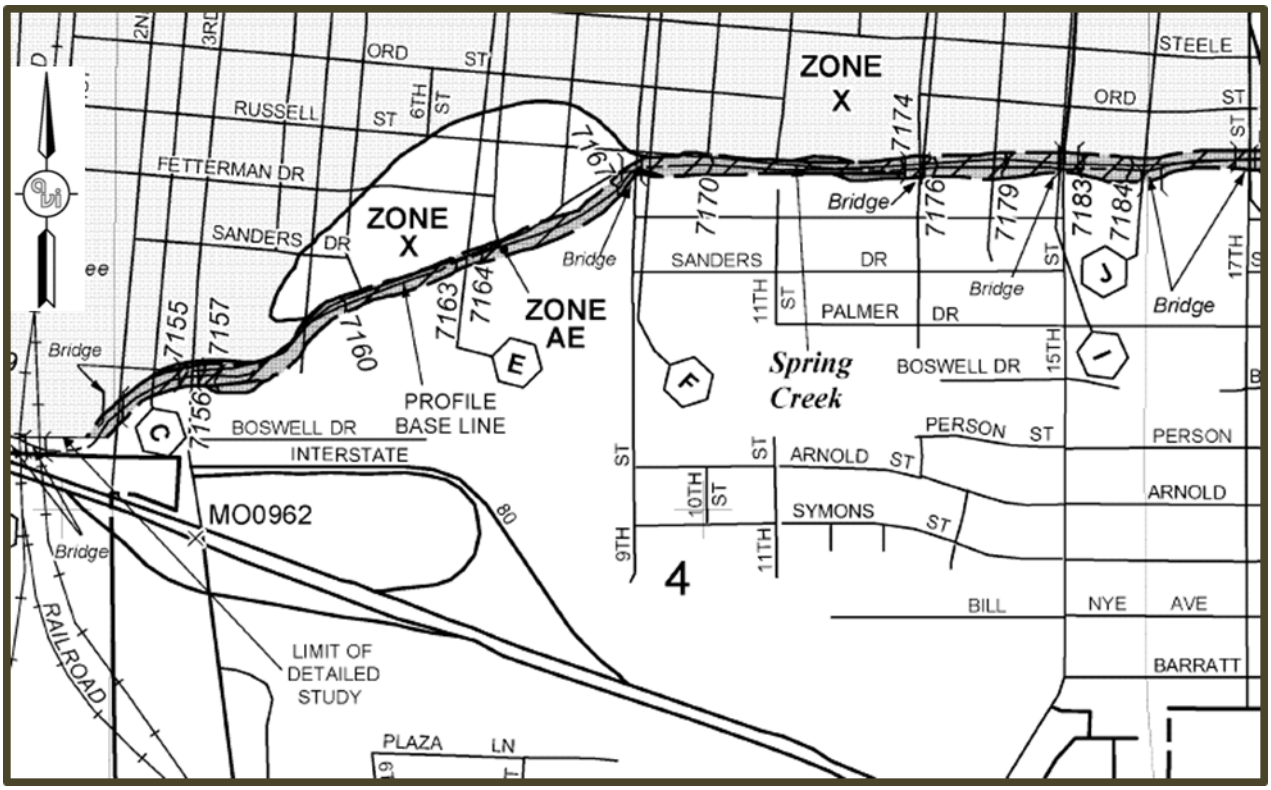


Figure 2.7 FEMA Panel 1765 of 2500, Map Number 56001C1765E

Bicycle Transportation

Currently there are no bike lanes, multiuse paths, or formal trails within the corridor boundary. However, 15th Street on the east side of the project has a formal on-street bike lane on each side of the roadway. It should be noted that 9th Street is shown as a designated route with signage and Bill Nye Avenue and Spring Creek have been designated as a paved surface separate from roadway on the City of Laramie Bicycle and Trails Master Plan from the 2007 Laramie Comprehensive Plan **(Kendig West Collaborative, 2007**). See the excerpt from the plan in **Figure 2.8 Existing and Proposed; Bike and Trail Network**.

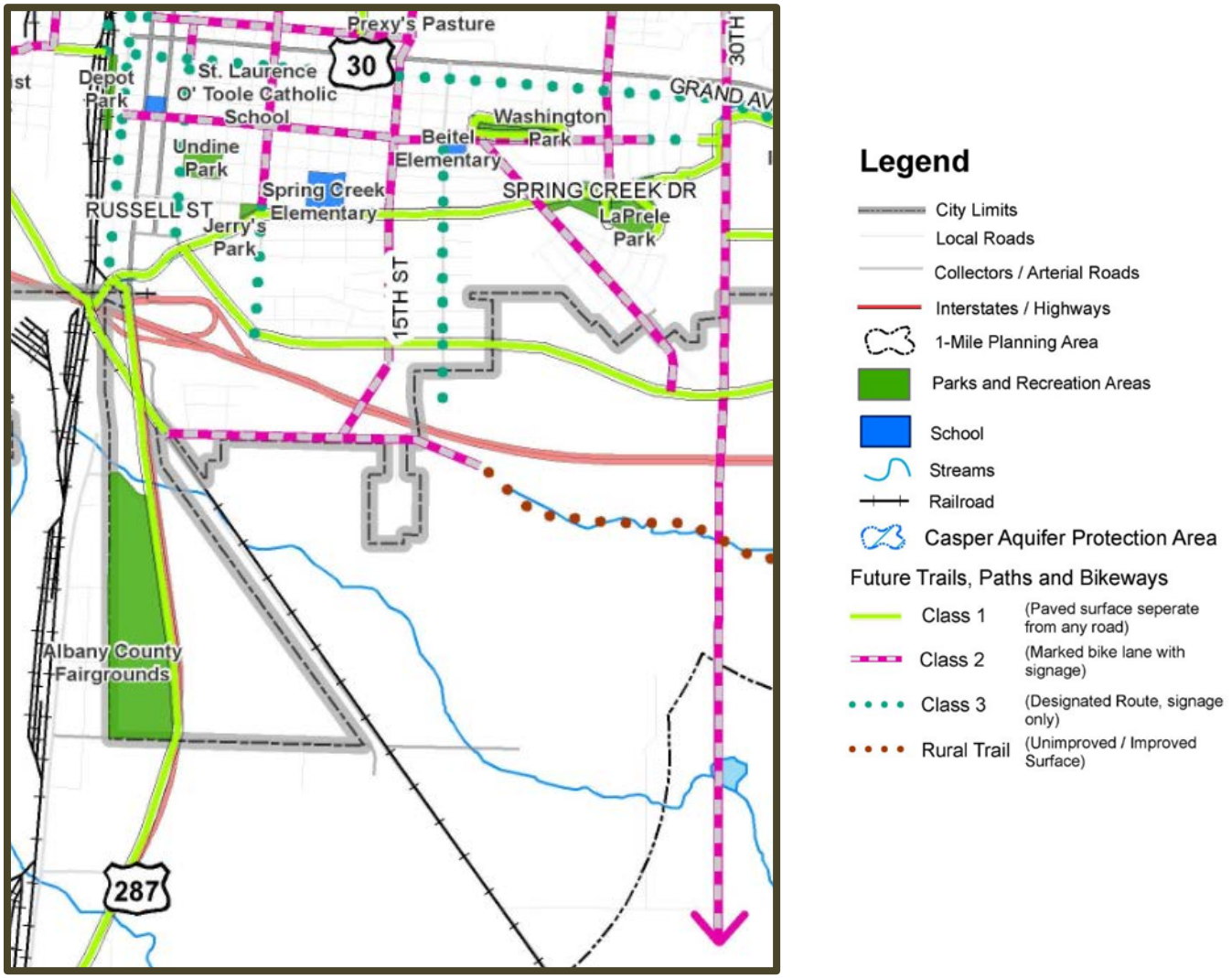


Figure 2.8 Existing and Proposed; Bike and Trail Network

Transit

The University of Wyoming at the southeast corner of 15th Street and Spring Creek Drive provides the closest Transit facilities area. The facility provides students, faculty, and staff busing to the university from the area south of Russell Street/Spring Creek Drive.

Environmental

Potential environmental considerations were reviewed for possible impacts to future improvement within the corridor. A field investigation by the AVI Team revealed the probability of wetlands located in the study area west of 9th Street and the I-80 Westbound On/ Off Ramps that may need to be mitigated when improvements are constructed.

Potential environmental considerations were reviewed for possible impacts to future improvement within the corridor. A cursory review and consultation with staff of the Wyoming Department of Environmental Quality (DEQ) and available documentation did not reveal any potential areas of concern within the study area. Refer to **Profile Chapter** for additional information.

Current Traffic Conditions

Sustainable Traffic Solutions, Inc. (STS) collected peak hour turning movement count data on Tuesday May 12, 2015 at Sanders Street, Boswell Drive, and the I-80 Ramps. WYDOT provided peak hour count data for Russel Street that was collected on Thursday September 27, 2012. The existing volumes are summarized in **Figure 2.10 Bill Nye Corridor Study Existing Traffic Volumes** and the counts are contained in Appendix E.

Traffic Safety

Crash data were provided by WYDOT for each of the key intersections along the corridor for the time period beginning on January 1, 2010 and ending on August 31, 2015. The number of crashes ranged from a total of seven at Russell Street to two at Sanders Street (see Table 2). Crash rates range from 0.10 crashes per million entering vehicles at the Sanders Street intersection to 0.28 at the Russell Street intersection. Given the low number of crashes and crash rates, STS concludes that there are no crash problems on the corridor. The crash data are contained in Appendix E and summarized in **Table 1 (4) Four Year Crash Summary for Key Intersections**.

Existing Land Use and Zoning

The corridor study area has a variety of adjacent property uses, form, function, and look. Land use varies but it is mainly comprised of a combination of urban residential, urban commercial and urban Industrial. The current Zoning Map is illustrated in **Figure 2.9 2013 Zoning Map.**

The following zoning uses are currently within the corridor area:

City Zoning:	Description:
▪ R1	Low-Density Residential
▪ R2	Medium Density Residential
▪ R3	Multi-family
▪ B1	Limited Business
▪ B2	General Business

Table 2.1 (4) Four Year Crash Summary for Key Intersections

Type	3rd Street			
	Russell Street	Sanders Street	Boswell Drive	I-80 Ramps
	Number of Crashes			
Approach Turn	1			
Angle			1	2
Sideswipe		2	1	1
Rear End	5		1	3
Pedestrian				
Head-on				
Vehicle vs Bicycle	1			
Total	**7**	**2**	**3**	**6**
Rate	**0.28**	**0.10**	**0.14**	**0.23**
PDO	**6**	**1**	**2**	**6**
Injury	**1**	**1**	**1**	**0**

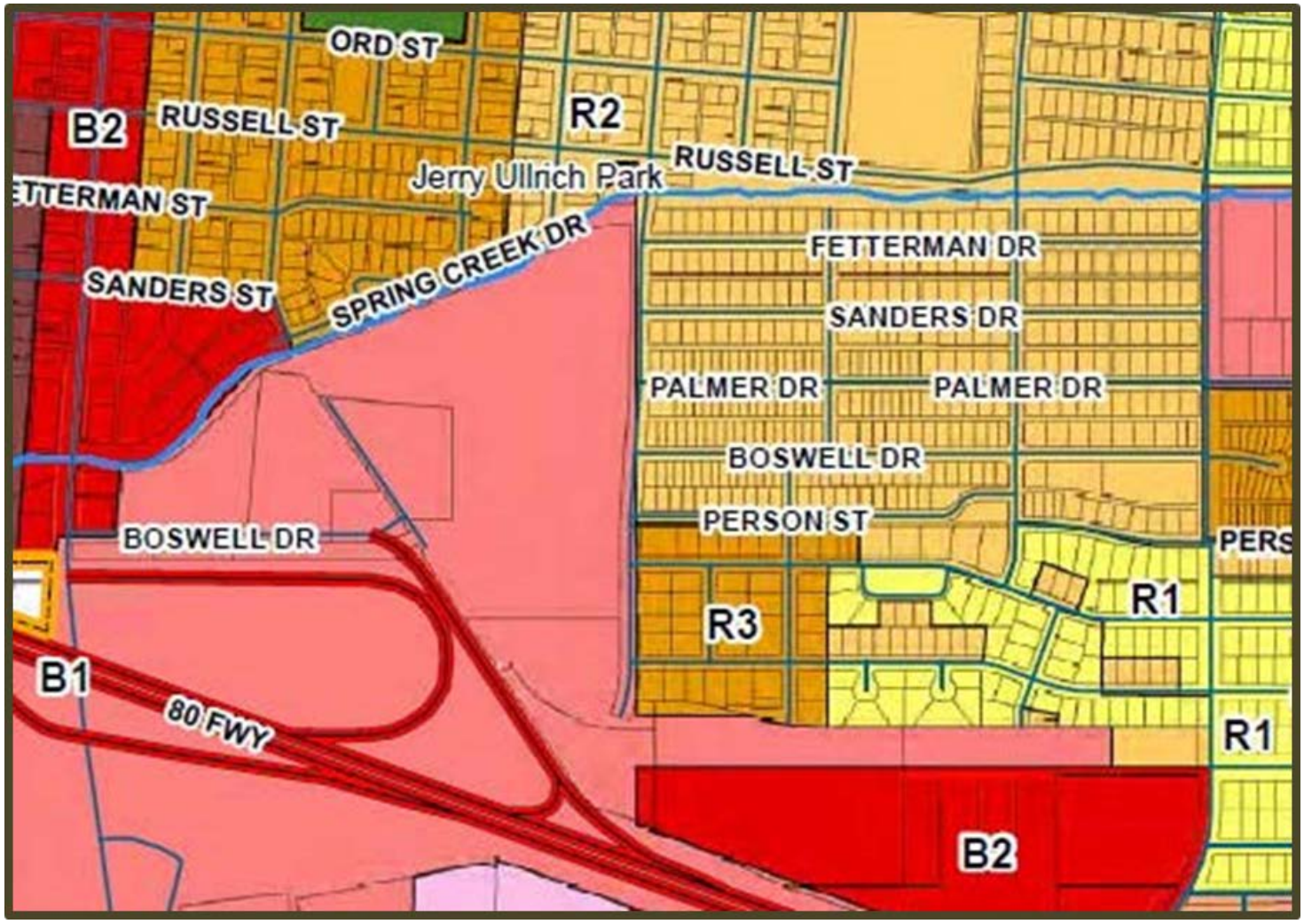


Figure 2.9 2013 Zoning Map

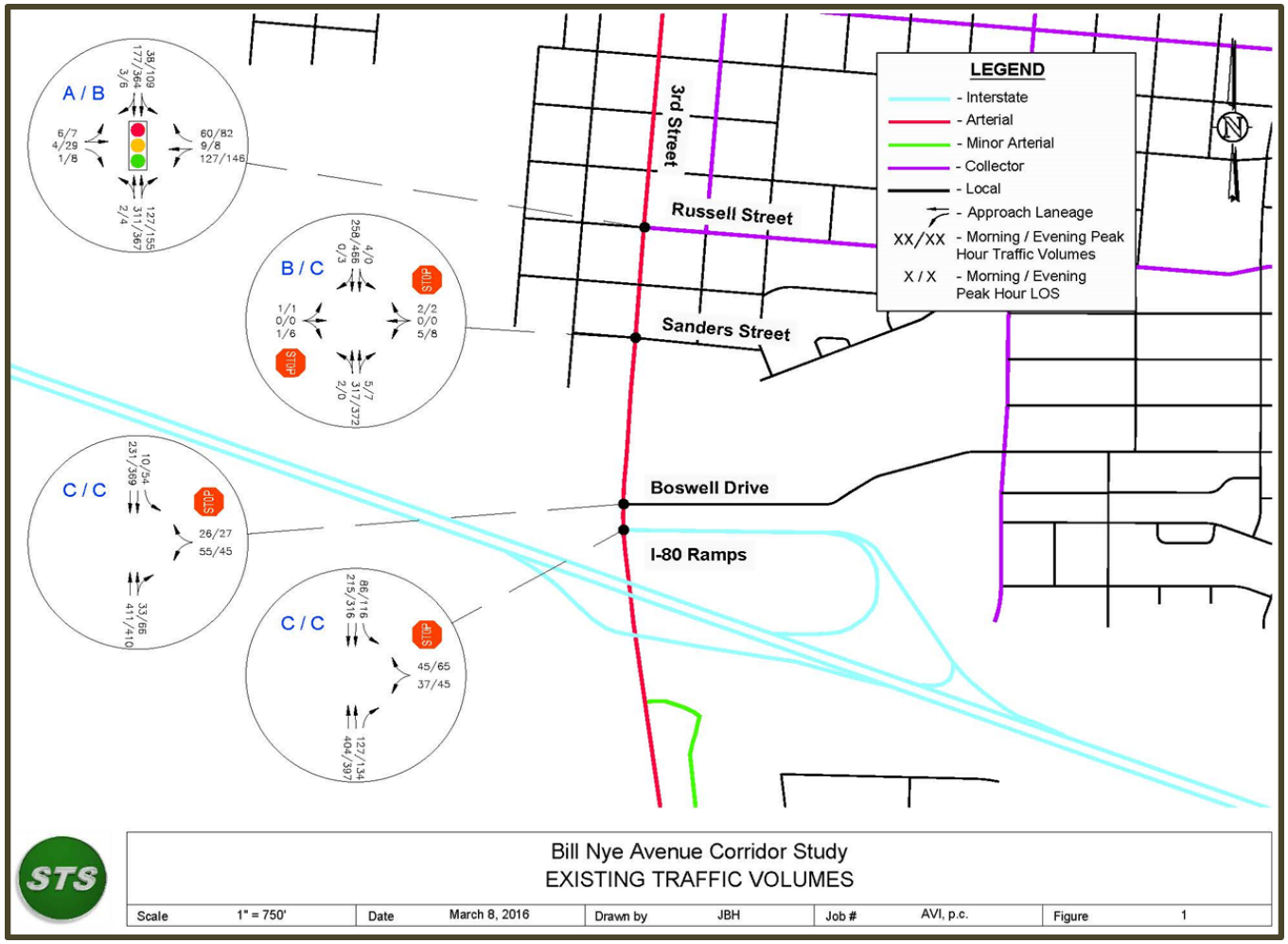


Figure 2.10 Bill Nye Corridor Study Existing Traffic Volumes

3.0 FOUNDATION

The foundation is the process and planning context phase of the project. It provided an avenue for a collaborative effort to define the opportunities and constraints of the corridor, as well as frame the key planning considerations, which shaped the plan.

The Bill Nye Avenue Corridor Study relied heavily upon extensive public and stakeholder participation. The process involved stakeholder one-on-one meetings, open house format meeting with residents, business owners, developers, landowners, project steering committee meetings, and City of Laramie Council workshop. **Table 3.1 Public Outreach Matrix** shows all the avenues used and dates in the foundation process of the project.

Table 3.1 Public Outreach Matrix

Activity	Date(s)
Stakeholder One-one-one Meeting(s) (City of Laramie and AVI)	July 1, 2015 September 16, 2015
Meeting w/ Federal Highway Administration (FHWA Office)	July 9, 2016
Public Open House (1) (Albany County Library)	October 21, 2015 5:00 p.m. to 7:00 p.m.
Steering Committee (5)	August 25, 2015; September 22, 2015; October 19, 2015; January 21, 2016; February 16, 2016.
Laramie City Council Work Session	February 9, 2016

One-on-one Meetings

The first type of foundation component involved stakeholder one-on-one individual meetings with several adjacent property owners and interested parties. The purpose of the meetings was to solicit input. Eleven (11) individual meetings were schedule and only nine (9) attended the meetings. Meetings were conducted July 1, 2015 and September 16, 2015 to accommodate stakeholder schedules.

The following are a list of the stakeholders who were scheduled to provide input:

- Dale Polenda, Adjacent Property Owner
- Jim McGrath, Area Resident
- Ponciano Villasenor, Corona Village (Scheduled but, did not attend)
- Janine Jordan, City Manager (Scheduled but, did not attend)
- Randy Hunt, City of Laramie, Community Development Director

- Ron Stephen, Fall Creek Development
- Greg Weisz, BFR Representative
- Earl Smith, City of Laramie, Publics Work Director
- Charles Bloom, Planning Division
- Jim Stephen, Fall Creek Development.

The agenda of the meetings were as follows:

- Introduction
- Goals of the Project
- Do you have any suggested alternatives?
- Do you have any concerns?

Summary of One-one-one Stakeholder Meetings

- They appreciated the team coming to them in a small setting and listening to their input.
- Agree with the Primary goals identified for the neighborhood (i.e. Preserve neighborhood, safety, keep lower traffic speeds, and keep lower traffic volumes).
- Suggested Alternatives:
    - Dual roundabouts on Interstate 80 off/ on-ramps,
    - Place the westbound off ramp at 9th Street,
    - Bike bridge,
    - Connect Bill Nye to Palmer at South 3rd Street,
    - Traffic calming on South 3rd Street,
    - Beautification and gateway opportunity,
    - Roundabout at South 3rd Street,
    - Original concept of Bill Nye Avenue to Sanders Street,
    - Utilize 9th Street to Russell Street as the Bill Nye Avenue connection,
    - Utilize Boswell Drive as the connection to Bill Nye Avenue,
    - Move Boswell Drive north and connect to Bill Nye Avenue,
    - Reconfigure interchange

- Concerns:
    - Solution should not remove traffic from businesses,
    - Direct costs to property or business owners,
    - Preserve neighborhood to the north of the area,
    - Signage for Westbound on/ off ramps,
    - Environmental concerns (underground storage tanks),
    - Access control.

It was conveyed to the groups that no additional costs shall be imposed on the resident neighborhood besides the normal taxes (i.e. sales tax and property tax) paid by all county/ city residents. Full funding for the project has not been established. This is a preliminary plan to help secure funding and guide future development.

Steering Committee

The second foundation component of the project involved enlisting the use of the Steering Committee. The committee was comprised of the following staff and key stakeholders from the City, WYDOT and other agencies during the plan development:

- Carl Lund, City of Laramie,
- Charles Bloom, City of Laramie,
- Earl Smith, City of Laramie,
- Eric Jaap, City of Laramie,
- Mark Christenson, City of Laramie,
- Randy Hunt, City of Laramie,
- Keven McCoy, WYDOT
- Mark Wingate, WYDOT,
- Pat Persson, WYDOT
- Randy Greisbach, WYDOT
- Tom DeHoff, WYDOT,
- Jeff Purdy, FHWA
- Phil Pratt, FHWA
- Brad Emmons, AVI, P.C.
- Jake Wilson, AVI, P.C.
- Tom Cobb, AVI, P.C.
- Joe Henderson, STS, Inc.

The Steering Committee met five (5) times throughout the course of the project to guide the consultant team, review project information, provide insight, discuss public and stakeholder involvement, and collaborate to make decisions about the plan direction and recommendations. Meeting minutes, as well as, the agenda can be found in Appendix C.

Public Open House

The third structural component involved an open house style forum for stakeholder and public comment. A presentation and open house style public meeting was conducted during the project. AVI led the public involvement process with assistance and contributions from all the team members. The meetings were advertised through various media including newspaper, web, and mail post cards.

A brief presentation combined with an Open House was conducted on Wednesday, October 21, 2015 from 5:00 p.m. to 7:00 p.m., with the presentation beginning at 5:15 p.m. at the Albany County Library 310 S 8th Street. Twenty-five (25) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Conduct a Presentation to provide background, purpose, and goals of project.
- Convey what we heard from the neighborhood meetings / recommendations.

- The consultants presented different road options based on the direction of public comment and landowner meetings and provided visual diagrams of what could be done along the corridor.

The open house was organized into two (2) different phases. The first was as brief twenty (20) minute presentation to focus on providing background, purpose, and proposed improvements. The second was two identical workshop areas comprised of exhibits shown in the presentation and a detailed aerial overview of the plan. Breaking the public into smaller groups allowed more one on one conversations and interactions with people. This was an attempt to ensure that the public in attendance was allowed to speak freely and get to know the people working on the corridor plan. A separate place was provided for the public to write comments and to answer a written survey.

Planning and Engineering consultants from AVI, City of Laramie, and WYDOT were present to receive public comment. Information and input was collected using three different avenues; direct communication with a team member (i.e. consultant, City staff member, and WYDOT), having the public write comments on Post-it® notes and placing them on large planning area maps, and filling out a written survey. The primary purpose of the three (3) different communication avenues was to create the most comfortable environment for individuals to convey information to the team.

Overview

Results for the written survey information were entered into the computer system by the consultants after the open house and the public had the option of entering the survey electronically through the Survey Monkey® web link. The link was provided on the City of Laramie website. Forty-eight (48) individuals provided written comments, and comment cards. Refer to Appendix C for complete summary of comments, exhibits, sign in and comment cards.

Laramie City Council Work Session

The fourth foundation component of the project involved utilizing a presentation to the Laramie City Council during a scheduled work session and a joint public forum meeting. The primary purpose of the meeting was to convey the comments received from the public input and present the corridor alternatives for review, comment, and question.

Reference

The Foundation or public involvement phase of the project provided one of the components of the foundation for development of the Design portion of the plan. Please see the Glimpse section of the plan, which encompasses the culmination of the foundation components and rationale behind the particular recommendations set forth in the plan.

4.0 PROFILE

The Profile section contains a set of foundations which help frame the boundary of the plan. The four (4) foundations are listed below and detailed in the following chapter:

- Foundation 1: Future Land Use Plan
- Foundation 2: Key Planning Considerations
- Foundation 3: Potential Funding Mechanisms
- Foundation 4: Environmental Constraints

Foundation 1: Key-Planning Considerations

The Future Land Use Plan is a long-range growth-focused map that provides the basis to guide future development in the Laramie and Albany County urban area. The map focuses on areas where new development will likely occur in the future and some redevelopment areas. The Land Use for this area was not revised and was used as the basis for future traffic volumes. Please see **Figure 4.1 Future Land Use Map Detail Area** and **Figure 4.2 Future Land Use Map 3.2.**

Foundation 2: Key-Planning Considerations

The Glimpse, Foundation, and Profile phase of the project provide a framework for the future land development and corridor vision of the various stakeholders. The Bill Nye Avenue Corridor area has the potential to grow and develop as additional utility and roadway infrastructure become connected and are appropriately sized for future capacity needs. The following structure considerations shape the corridor:

- Transit and Non-motorized Transportation
- Provide a safe, accessible and continuous pedestrian connection along the entire corridor
- Provide street lighting at intersections and non-motorized crossings where appropriate
- Provide for expanding transit stops along the corridor
- Provide separated multi-use path as recommended by the 2007 Laramie Comprehensive Plan, Bicycle and Trails Master Plan (Kendig Keast Collaborative , 2007)
- Review options to expand the Greenway within future developments for connectivity to schools and existing greenway components.
- Minimize impacts to nearby residential properties and businesses.

Traffic Safety and Operation

- Build a roadway cross section that enhances travel efficiency and accommodates all modes of transportation.

- Provide peak hour intersection operations with a minimun Level of Service (LOS) C as minimum through horizon year 2040.
- Attempt to maintain commercial and residential access approaches.
- Where appropriate, provide for proper turning widths at intersection to accommodate a conventional single unit truck, bus, or semi-trailer combination with a wheelbase of forty (40) feet (i.e. 3 to 4 axle).

Roadway Connectivity

- Review options to promote development in undeveloped open space.
- Review existing roadways and provide additional or enhanced street connectivity.

Dry and Wet Utilities

- Consult with wet and dry utility companies to provide enhanced or improved facilities to facilitate redevelopment.
- Attempt to provide a dry utility corridor within the current road right-of-way.

Cooperation

- Multiple public agencies including Albany County and City of Laramie.

Foundation 3: Potential Funding Mechanisms

Keys to successful development and revitalizing in the corridor will be predicated on the following:

- A clear vision, taking into account the market and economic reality;
- A proactive strategy for reinvestment (public and private);
- Educated citizenry and implementers;
- Calculated strategy to attract investment and remove barriers;
- Quantifiable leveraged public investment;
- Fiscally and economically responsible phasing plan;
- Equalization of economic risk vs. reward;
- On-going project support (political).

The public sector (City of Laramie, Albany County, etc.) will play an important role in “readying the area for private investment” through infrastructure improvements, public planning and policy initiatives. From these initiatives and/or investments, private sector development and redevelopment can be leveraged.

Funding mechanisms for public infrastructure could include loans and grants (e.g., Wyoming Business Council’s Business Ready Community Program and Community Facilities Grant and Loan Program); Community Development Block Grant (CDBG) funds; 5th and 6th Penny Sales Tax projects revenue

bonds; and general obligation bonds. One of the “truths” in corridor development and revitalization is that private investment will typically follow public investment. The types of public infrastructure recommended in the Corridor Plan will not only encourage new development on vacant and/or underutilized parcels, but redevelopment of existing sites and buildings. This new private investment represents the “leveraged” return to the public sector from their initial investments.

Foundation 4: Environmental Constraints

The following environmental checklist Table 4.1 Environmental Review Corridor Checklist was reviewed for the corridor in order to identify any areas of environmental concern that may need to be addressed in future development of the corridor plan, roadway design, and construction. The final notes and environmental report are contained in Appendix F of the report for additional information and reference.

Legend

Streams
1-Mile Planning Area
Railroad
City Limits
Casper Aquifer Protection Area

Major Street Plan

Proposed Roads	Existing Roads
	Local
Interstate	Interstate
Parkway	Parkway
Principal Arterial	Principal Arterial
Minor Arterial	Minor Arterial
Collector	Collector
Bridge/Overpass/Underpass	

Future Land Use Categories

- Agriculture
- Countryside
- Estate
- Suburban Residential
- Auto-Urban Residential
- Auto Urban Multifamily
- Urban Residential
- Suburban Commercial
- Auto-Urban Commercial
- Urban Commercial
- Urban University
- Industrial
- Public/Institutional
- PK/OS

Figure 4.1 Future Land Use Map Detail Area

Table 4.1 Environmental Review Corridor Checklist

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural Environment				
Threatened or Endangered Species	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	✓Yes ☐ No ☐Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Further investigation will be required during final design but not anticipated to be a factor. Review of area and U.S. Fish & Wildlife website. Unofficial US fish and Wildlife Service online database suggests that three species have potential habit on site; Preble's meadow jumping mouse, Wyoming toad, and western prairie fringe orchid. While these species have some potential, it is unlikely they are present. However, specific species/habitat surveys may be required once an alignment is selected. We are still waiting on response from the FWS from our letter request.
Wildlife Corridors	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ☐Unknown ✓Not applicable	Further investigation will be required during final design but not anticipated to be a factor. Based on WGFD GIS data, no wildlife corridors cross or are in the area.
Invasive Species	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Further investigation will be required during final design but not anticipated to be a factor.
Wetland Areas	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Further investigation will be required during final design but not anticipated to be a factor. Please see Appendix F for additional information and reference. The previous letter report still holds true.

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural Environment (Continued)				
Riparian Areas	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ✓ Not applicable	Observation
100-Year Floodplain	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	FEMA website and County GIS review. (see Glimpse: Drainage)
Clean Water Act Sections 404/401 Waters Of The United States	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ✓ Not applicable	WDEQ identified no Class I waters, but further detailed design/layouts will be needed to determine what if any permits will be required from the Army Corps of Engineers and WDEQ-WQD.
Prime Or Unique Farmland	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ✓ Not applicable	The Albany County Area Soil Survey confirmed no Prime or Unique Farmlands in the area.

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural Environment (Continued)				
Wild and Scenic Rivers	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	The National Wild and Scenic River System database confirmed no Wild and Scenic Rivers are on site or within visual range of the Bill Nye Corridor Study.
Visual Resources	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Observation and public process. Visual leisure in the case is “open space/aerial”. Although this is subjective it may have impacts throughout the corridor.
Designated Scenic Road/Byway	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	Observation
Cultural Resources				
Archaeological Resources	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Formal survey were not completed; however, the Disturbed nature of the area would suggest that it is unlikely to find surface deposits. Buried artifacts may be possible. Formal surveys are likely once an alternative is selected. We are still waiting on a response from SPHO from our letter request.

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Cultural Resources (Continued)				
Historical Resources	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Observation
Section 4(f) and Section 6(f) Resources				
Section 4(f)[1] Wildlife and / or Waterfowl Refuge	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	No impacts are anticipated based on observation.
Section 4(f) Historic Site	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	A section 106 Study will be required to determine potential impacts however, the area was not listed on the SHPO website.
Wild and Scenic Rivers	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	Observation

[1] Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S. Code § 303, as amended); see <Section 4(f)>.

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Section 4(F) And Section 6(F) Resources (Continued)				
Section 4(f) Park	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Observation
Section 6(f)[2] Resource	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	
Human Environment				
Existing Development	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Existing approaches, fences and right-of-way will be necessary to complete the project based on the preliminary plan.
Planned Development	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Potential development is anticipated on underdeveloped properties based on discussions with adjacent boundaries.

[2] Section 6(f) of the Land and Water Conservation Fund Act

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Human Environment (Continued)				
Displacements	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Possible impacts to adjacent business adjacent to the existing Boswell Drive.
Access Restriction	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Observation
Neighborhood Continuity	☐ Yes ✓ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Observation
Community Cohesion	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Public Involvement process.

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Physical Environment				
Title VI/Environmental Justice Populations[3]	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	
Utilities	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Observation See Section Glimpse; Utilities.
Hazardous Materials	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	Observation
Sensitive Noise Receivers[4]	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	✓ Yes ☐ No ☐ Unknown ☐ Not applicable	Spring Creek Elementary School Adjacent Neighborhoods

[3] refers to Title VI of the 1964 Civil Rights Act and 1994 Executive Order 12898 on environmental justice

[4] under FHWA's Noise Abatement Criterion B: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Physical Environment (Continued)				
Air Quality	☐ Yes ☐ No ☐ Unknown ✓ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	
Energy	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	☐ Yes ☐ No ✓ Unknown ☐ Not applicable	

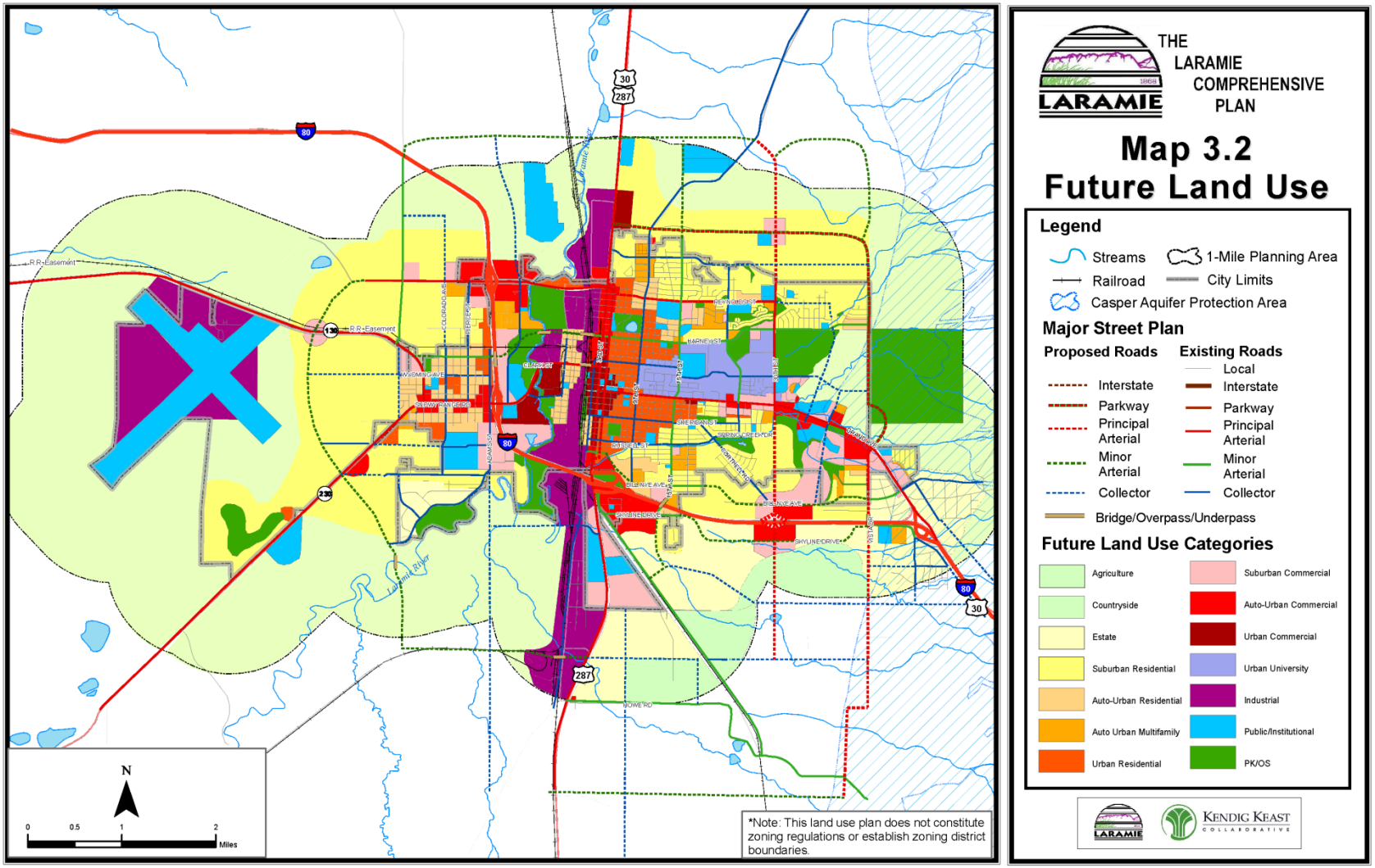


Figure 4.2 Future Land Use Map 3.2

5.0 DESIGN

The Glimpse, Foundation, and Profile phase of the project provided a solid basis for development of the Design portion of the plan. The design section of the plan encompasses the culmination of the groundwork components and rationale behind the particular recommendations set forth in the plan.

The overall recommendations are specifically designed to address the modes of transportation and safety needs of the present and future users of the Bill Nye Avenue Corridor. All recommendations have been examined carefully to ensure the wishes of the stakeholders have been considered as well as their practicality, functionality, aesthetic appeal, sustainability, and successful implementation. The physical layout of the improvements are detailed in the following pages and can be found on the corridor plan and profile sheet in Appendix A. Detailed cost estimates are shown in Appendix D.

Roadway Concept Alternatives

The methodology employed to develop the conceptual roadway "typical" alternatives were evaluated using a multi-modal framework as a base. At intersections and other locations with unique design challenges (e.g. driveways, areas with limited sightline, etc.), special designs and modifications may be needed to address issues of road geometry, adjacent land uses, traffic volumes and other characteristics. The Bill Nye Avenue Corridor Study evaluated conceptual improvement alternatives for the roadway segments and streetscape with the following governing parameters:

- What are the existing and future adjacent conditions and uses?
- What variations can be made to create a more user-friendly corridor?
- What movements and interactions will take place on the corridor?
- What is the corridor vision of the stakeholders?
- What can we do to add low maintenance streetscape to "soften" the corridor for non-motorized modes of transportation?
- Required minimum City of Laramie Unified Development Code (UDC) typical section for roadway classification (Laramie, 2010 Version 7.0 - Print Date: January 23, 2015)

Design Guide Criteria

- Roadway Classification: Minor Arterial
- Minimum Design Speed: 35 mph
- Lane Width: 11 foot
- Clear Zone Width: 16 feet (ADT > 6,000), 1V:5H to 1V:4H
  14 feet (ADT > 6,000), 1V:6H
  AASHTO Roadside Design Guide (Officials A. A., Roadside Design Guide, 2011))
- Stopping Sight Distance: 250 feet
- Passing Sight Distance: 550 feet
- Crest Vertical Curve: K = 108 (Passing Sight Distance)
  K = 49 (Stopping Sight Distance)
- Sag Vertical Curve: K = 49 (Stopping Sight Distance)
- Grade (Max./ Min.): 6%/ 0.5%
- Design Vehicle: WB-40 9(Bill Nye), WB-67 (South 3rd Street)
- Horizontal Curve: R = 510' (Adverse Crown),
- Transitions: L = WS2/60 = W(35) 2/60

Table 5.1 Ultimate Typical Section Jurisdictional Comparison

Description	City of Laramie (Minor Arterial) (1)	City of Cheyenne (Minor Arterial) (2)	2011 AASHTO (3)
Travel Lane**	4 – 12'	2 – 12'	10' – 12'
Turn Lanes	12' (3)	12'	-
Parking **	none	none	11'
Roadway Width	68'	48'	Volume
Sidewalk/ Pedestrian Area	5'	6'	-
Parkway/ Tree Lawn	8'	8'	-
Bike Lane/ Shoulder**	Permitted	2 – 6'	4' – 8'
Volume Capacity (ADT)	5,000 – 30,000	7,500 – 18,000	Over 2,000

[1]**Footnotes:**

[1] ** # - ##' indicates total number of element within corridor cross section
(1) *City of Laramie Standard Details* (City of Laramie, Issued March 2013), *Unified Development Code Laramie, Wyoming* (Laramie, 2010 Version 7.0 - Print Date: January 23, 2015), Laramie Comprehensive Plan (City of Laramie, 2007)
(2) *City of Cheyenne Unified Development Code* (Cheyenne, 2013)
(3) *A Policy on Geometric Design of Highways and Streets* (Officials, A Policy on Geometric Design of Highways and Streets, 2011)

Cross Sectional Elements

Lane Widths

As shown in **Table 5.1 Ultimate Typical Section Jurisdictional Comparison**, lane width requirements vary between the jurisdictional entities from ten to twelve (10-to-12) feet. According to AASHTO (Officials A. A., A Policy on Geometric Design of Highways and Streets, 2011) and our experience, smaller lane widths may be used in more constrained areas where truck and bus volumes are relatively low and where speeds are less than 45 mph. Lane widths of eleven (11) feet wide are extensively used in urban arterial street designs while twelve (12) foot wide lanes are desirable on high speed, free flowing principal arterials.

After extensive discussion between the design team and Steering Committee, we recommend the use of eleven (11) foot wide travel lanes on Bill Nye Avenue. This width still accommodates larger design vehicles and increases the available tree lawn width, which can be used for snow storage, pedestrian separation, and drainage.

Curbs

The type and location of curbs affect driver behavior and safety. Curbs serve many purposes including drainage control, roadway edge delineation, delineation of pedestrian walkways, and access control. Although curbs are not considered fixed objects in the context of a clear zone obviously, they will have an effect on impacting or overriding car movements

After discussion within the public, design team and Steering Committee, we recommend the use of curb and gutter on Bill Nye Avenue. Curb and gutter will provide better access control and pedestrian delineation for use by pedestrians and young schoolchildren.

Bicycle and Pedestrian Facilities

Bicycling is becoming increasingly popular in Wyoming, especially in University towns such as Laramie, as a means of transportation and recreation. Furthermore, as a part of providing a more continuous, safe and efficient bicycle system, the Unified Development Code Laramie, Wyoming (UDC) (Laramie, 2010 Version 7.0 - Print Date: January 23, 2015)**,** Laramie Comprehensive Plan, Trails and Bicycle (Comprehensive Plan) (City of Laramie, 2007)**,** and City of Laramie Standard Details (Standard Details) (City of Laramie, Issued March 2013)have emphasized the accommodation of safe, efficient, and convenient movement of vehicles, bicycles, and pedestrians through development of land. Specifically, the following criteria have been identified for the corridor:

- Class 1: Paved surface separated from the roadway; Comprehensive Plan
- Typical Pathway: 11 to 12 feet wide, 6” deep; Standard Details

Separated multi-use pathways provide the broadest opportunity for a variety of non-motorized transportation modes. However, advanced commuter cyclists prefer riding within the roadway. After discussion within the public, design team and Steering Committee, we recommend the use of additional on-street shoulder/ bike lane on the Bill Nye corridor. The Urban Bikeway Design Guide by the National Association of City Transportation Officials (Officials N. A., 2014) recommends the following conventional bike lane standard.

Bike Lanes Without On-street Parking, a minimum width of four (4) feet when no curb and gutter is present, five (5) feet when adjacent to curb and gutter, and six (6) feet where right-of-way allows. We recommend the use of five (5) foot bike lanes be incorporated into the typical section on areas without parking to the front of the curb pan on Bill Nye Avenue.

Figure 5.1 Bike Lane Typical

Parking Lane

Providing parking varies where adequate off-street parking facilities are not available or practical. However, parking on arterial streets is highly undesirable. Stakeholders in the area indicated that providing a parking lane was not a concern on the corridor. Therefore, we recommend no parking within the Bill Nye Avenue Corridor.

Medians

The primary function of medians is safety. They separate traffic streams, guide turning movements at intersections, and provide access control to/from minor access drives and intersections. It is very important that medians be delineated in a way that makes them visible and distinguishes them from the adjacent driving lanes. Curbed medians and traffic islands provide an added benefit by “softening” the urban roadway edge and subjectively enhance the aesthetic quality when utilizing a combination of the material types.

Three (3) types of medians are most common in the urban roadway environment: raised, flush, and two-way left-turn lanes.

- **Raised Medians**

  A raised median is used in urban streets where it is desirable to control or restrict mid-block left turns and cross maneuvers. Installing a raised median can result in the following benefits:

  - Improve traffic safety
  - Restrict left-turn and crossing maneuvers to specific locations or certain movements
  - Increase capacity and reduce delays

- Provide a pedestrian refuge area (minimum of six (6) feet wide).
- AASHTO (Officials A. A., A Policy on Geometric Design of Highways and Streets, 2011) recommends that intersection median turn lanes have a minimum medial separator of four (4) feet between turning lane and opposing traffic. Additionally, they recommend that with wider medians, consideration should be given to offsetting the left-turn lanes to provide maximum visibility between opposing traffic volumes.

❖ **Flush Medians**

Flush medians are surface painted medians that can be traversed. (Although they discourage left-turn and crossing maneuvers by their striping configuration, they do not prevent left turns because the median can be easily crossed).

❖ **Two-way Left-turn Lanes**

Two-way left-turn lanes (TWLTL) are flush medians that may be used for left turns by traffic from opposing directions on the street. AASHTO (Officials A. A., A Policy on Geometric Design of Highways and Streets, 2011) recommends the use of a TWLTL on arterials with numerous cross streets, commercial, residential drives, or where it is impractical to limit left turn movements.

The Bill Nye Avenue Corridor plan recommends the use of all three types of medians however, the only cross sectional element shown on the typical section is a continuous two-way left-turn lane or no median.

Auxiliary Lanes (Speed-Change Lanes)

City of Laramie Criteria (Laramie, 2010 Version 7.0 - Print Date: January 23, 2015). No criteria were found within the code referenced above related to auxiliary lanes. Therefore, AASHTO was utilized for the development within the corridor.

Table 5.2 Jurisdictional Requirements for Auxiliary Lanes

Design Speed	Stop Condition Decel	15 MPH Turns Decel	Minimum Decel Lane Taper Ratio
AASHTO			
30	160	-	8:1 to 15:1
40	275	-	8:1 to 15:1
50	435	405	15:1

Careful consideration was given to the proposed conceptual alternatives to use the safest and most practical deceleration length on the corridor. Therefore, due to the proximity of access approaches, and expected relatively lower speeds approaching intersections, a one-hundred sixty (160) foot deceleration length was applied to the auxiliary lane development. If specific site conditions did not allow

development of full deceleration lane, it was omitted and so noted. Additionally, for the identical reasons as previously noted, a 100' minimum taper was utilized for all the auxiliary lanes with the corridor. For a twelve (12) foot lane, this equates to approximately an 8.33:1 and for an eleven (11) foot lane, it equates to approximately a 9.1:1.

Left Turn Lane

We recommend that a left-turn deceleration lane and taper are required for any access with a projected peak-hour ingress turning volume greater than 10 vehicles per hour (vph). The taper length shall be included with the required deceleration length.

Right Turn Lane

A right-turn deceleration lane and taper is required for any access with a projected peak hour ingress turning volume greater than 25. The taper length should be included within the deceleration length.

Provision for Dry Utilities

As previously described in the study, some utilities are interlaced in the corridor area and are both underground and overhead. Obviously, utilities should desirably be located underground or at the edge of the right-of-way, when practical.

Based on recommended right-of-way width of 100 feet, we would recommend that new developments have dry utility facilities relocate underground within the corridor.

The recommended Conceptual Typical Section for the Bill Nye Corridor is illustrated in **Figure 5.2 Recommended Typical Section (Looking West)** General Corridor Recommendations

- Pedestrian and sidewalk improvements
- Explore opportunities, as area develops to provide roadway storm water detention / retention features / facilities.
- Update/ install strategic street lighting at key intersections (Bill Nye Avenue: at South 9th Street, Boswell Drive, and South 15th Street).
- Implement wet and dry utility priority projects as funding resources become available or development becomes the catalyst
- Storm sewer installation

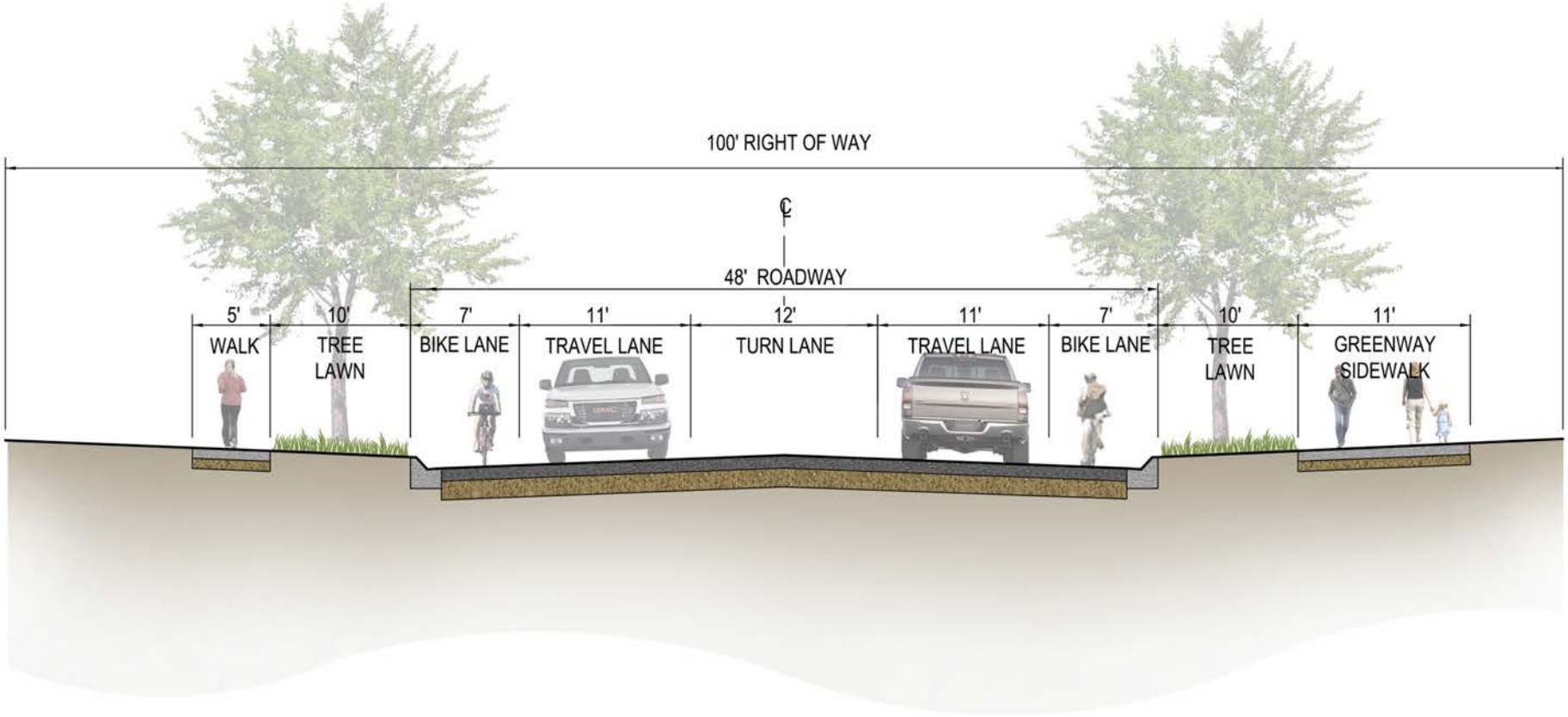


Figure 5.2 Recommended Typical Section (Looking West)

Figure 5.3 Future Land Use

Future Traffic Volume Conditions

Traffic volume projections were developed for Year 2035 by Sustainable Traffic Solutions, Inc. to estimate the impacts of the traffic growth on the corridor. Projected traffic volumes for the corridor were developed based on the land use plan show in **Figure 5.3 Future Land Use**.

Drainage and Detention

We understand the requirements for the City of Laramie regarding drainage planning and design is under further review and evaluation. Until such time that those final regulations and code are adopted, we recommend that at a minimum the proposed roadway corridor shall provide for the following:

- Stormwater detention based on a design storm up to a one-hundred (100) year frequency.
- Post development design requirements shall be for a system to maintain total contributory site discharge at no greater than a pre-development (i.e. historic) ten (10) year release rate for a 100-year storm event.
- Additionally, at a minimum drainage conveyance system elements shall be based on the following criteria for a collector street:
    - Major Storm (100-year)
        - Maximum depth in gutter flowline 6 inches, 6 inches flow across street intersections.
        - Maximum allowable Spread 18 feet each side allowing middle lane passage.

The design team developed conceptual potential drainage plan opportunities for the corridor. Due to the size of the right-of-way at 100 feet, planning level opportunities exist for improving the post development drainage adjacent to the corridor. We recommend innovative drainage solutions be implemented gutter “turnouts” that direct stormwater to tree lawns to capture runoff **(Figure 5.4 Gutter Turnouts)**; roadside drainage that capture and treat water via longitudinal gravel beds, and the use of roadside ditches as linear detention/water quality facilities.

Figure 5.4 Gutter Turnouts

Figure 5.5 Linear Detention/Bioswale

Alignment Alternatives

Many different concepts were suggested, reviewed, and evaluated for consideration for the Bill Nye Avenue alignment from South 15th Street to South 3rd Street during the study process. Those considered included the following:

- Do Nothing – Utilize 15th Street
- 9th Street Connection
- 5th Street Connection
- Original Concept Of Bill Nye Avenue Connects To Sanders Street
- Move Boswell North And Connect To Bill Nye Avenue
- Utilize Boswell Drive As The Connection Of Bill Nye
- Roundabout At Boswell Combined W/ WBL Off/On Ramp

- E. Palmer Drive W/ Cul-De-Sac At Boswell
- Roundabout At 3rd Street/ Boswell Drive/ I-80 Westbound Ramps
- Dual Roundabouts On 3rd Street For The I-80 Off/ On Ramps.

After careful consideration and vetting through the Steering Committee, the possible conceptual alternatives were narrowed to the following and discussed below.

- Do Nothing – Utilize 15th Street
- Revised Boswell Realignment (Move Boswell north and connect to Bill Nye Avenue)
- E. Palmer Drive w/ Cul-de-sac at Boswell
- Roundabout at 3rd Street/ Boswell Drive/ I-80 Westbound Ramps.

Alternative 1: Do Nothing Alternative – Utilize 15th Street. This alternative utilizes the existing 15th Street as the connection to 3rd Street for Bill Nye Avenue. Minor improvements would be necessary including widening and upgrading signals to accommodate future anticipated traffic volumes. **Figure 5.6 Alternative 1: Do Nothing-Utilize 15Th Street.**

Alternative 2: Revised Boswell Realignment (Move Boswell north and connect to Bill Nye Avenue). This alternative attempts to create separation between the I-80 Westbound On/ Off Ramps and the Boswell Drive/ Bill Nye roadway intersection. **Figure 5.7 Alternative 2: Realign Boswell**

Alternative 3: E. Palmer Drive w/ Cul-de-sac at Boswell. This alternative creates a revised connection of Bill Nye Avenue at East Palmer Drive. It is proposed with a cul-de-sac at Boswell Drive and 3rd Street. Access to businesses on Boswell would need to utilize Bill Nye Avenue to Boswell Drive. Obviously, wayfinding signage would need to be incorporated with this alternative on South 3rd both northbound and southbound. See **Figure 5.8 Alternative 3: E. Palmer Drive w/cul-de-sac on Boswell at 3rd Street.**

Alternative 4: Roundabout at 3rd Street/ Boswell Drive/ I-80 Westbound Ramps. This alternative is a roundabout at 3rd Street and Boswell Drive/ Bill Nye Avenue. The premise of the alternative is based on phased approach where the roundabout would be built for a two lane roundabout but, utilized as a single lane roundabout until a two lane is warranted. See **Figure 5.9 Alternative 4: Roundabout at 3rd Street/I-80 WB Ramps.**

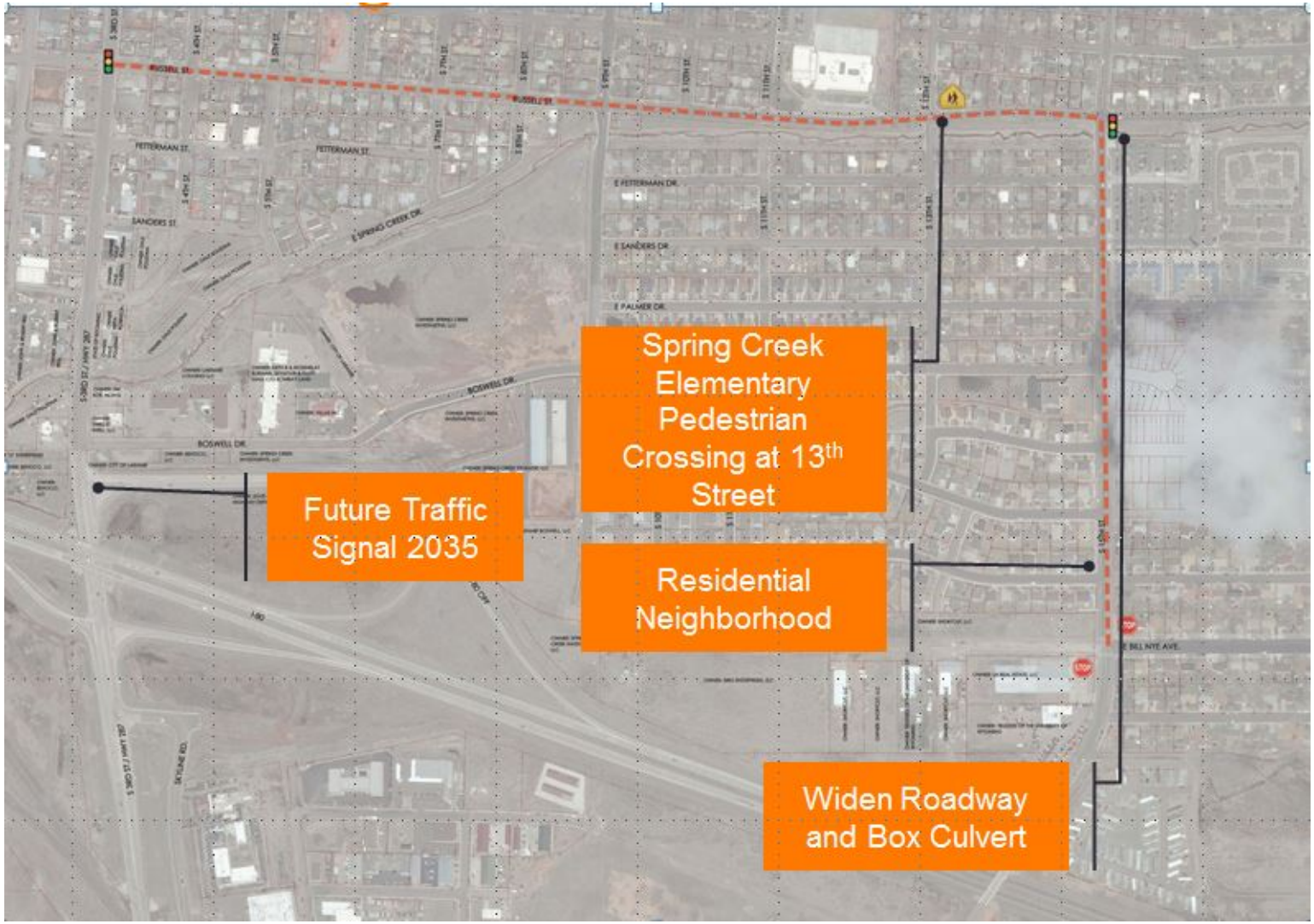


Figure 5.6 Alternative 1: Do Nothing-Utilize 15Th Street

Figure 5.7 Alternative 2: Realign Boswell

Figure 5.8 Alternative 3: E. Palmer Drive w/cul-de-sac on Boswell at 3rd Street

Figure 5.9 Alternative 4: Roundabout at 3rd Street/I-80 WB Ramps

Right-of-way Requirements

During this preliminary design phase of the project, the team researched the Albany County GIS website (Albany County GIS Web Map, 2016) and recorded documents in the Albany County Clerk's office in order to identify potential needs for future right-of-way. The purpose was two-fold; first, to identify the preliminary physical property needs and ownerships and second, to commence open communication with the present landowners.

The planning and design team have made recommendations for right-of-way acquisition that we believe were necessary to fulfill the goals of the project and minimize the impact to existing landowners. Please note that a Wyoming Professional Land Surveyor will be required to establish the existing right-of-way along the corridor and determine the acreages required for the project. The following table and figures summarize the parcels and ownerships which have been identified at the thirty-five (35) percent design level for proposed right-of-way acquisition. These are outlined in the following **Table 5.3 Summary of Right Requirements** and **Figure 5.12** thru **Figure 5.15**.

Table 5.3 Summary of Right Requirements

Right-of-Way Requirements	Alternative 2	Alternative 3	Alternative 4
Land to be dedicated Via Platting	8.16 Acres	8.91 Acres	7.94 Acres
Level 1 Commercial Land	0.47 Acres	NA	0.19 Acres
Level 2 Commercial Land	0.89 Acres	0.28 Acres	0.46 Acres
Vacant Land	1.47 Acres	0.17 Acres	1.59 Acres
Total	10.99 Acres	9.36 Acres	10.18 Acres

Right-of-Way Impacts for Alternates Two (2), Three (3), and Four (4)

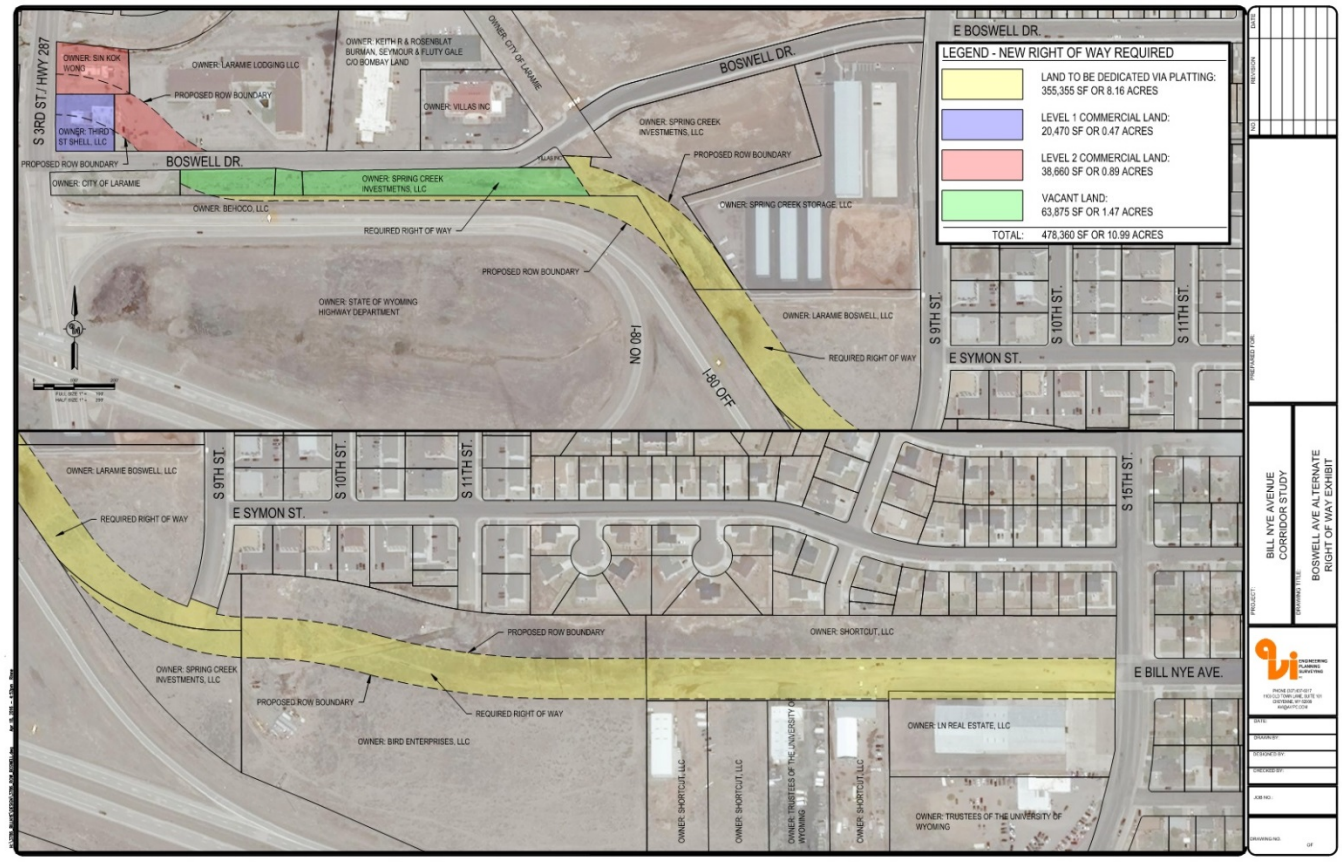


Figure 5.10 Right-of-way Requirements Alternative 2

Figure 5.11 Right-of-way Requirements Alternative 2 Detail

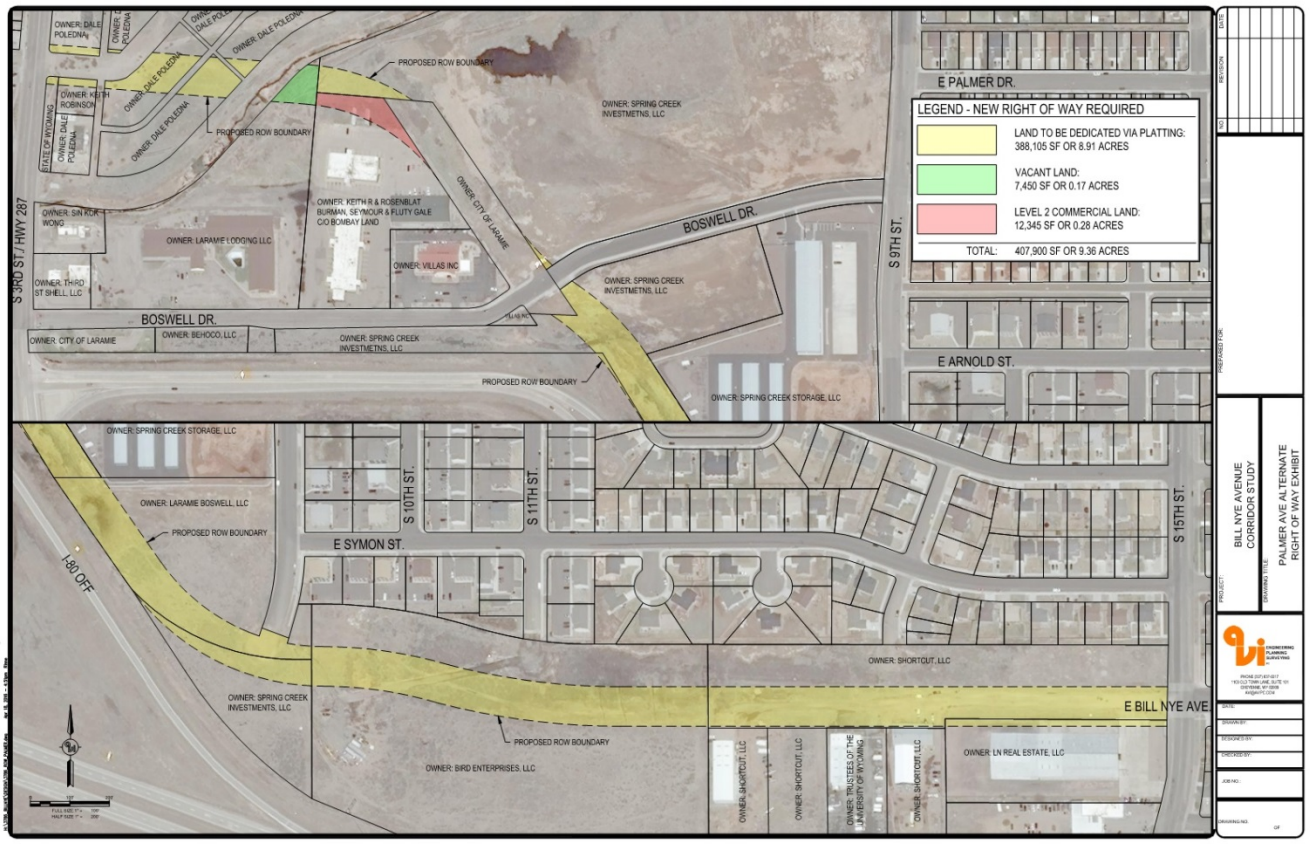


Figure 5.12 Right-of-way Requirements Alternative 3

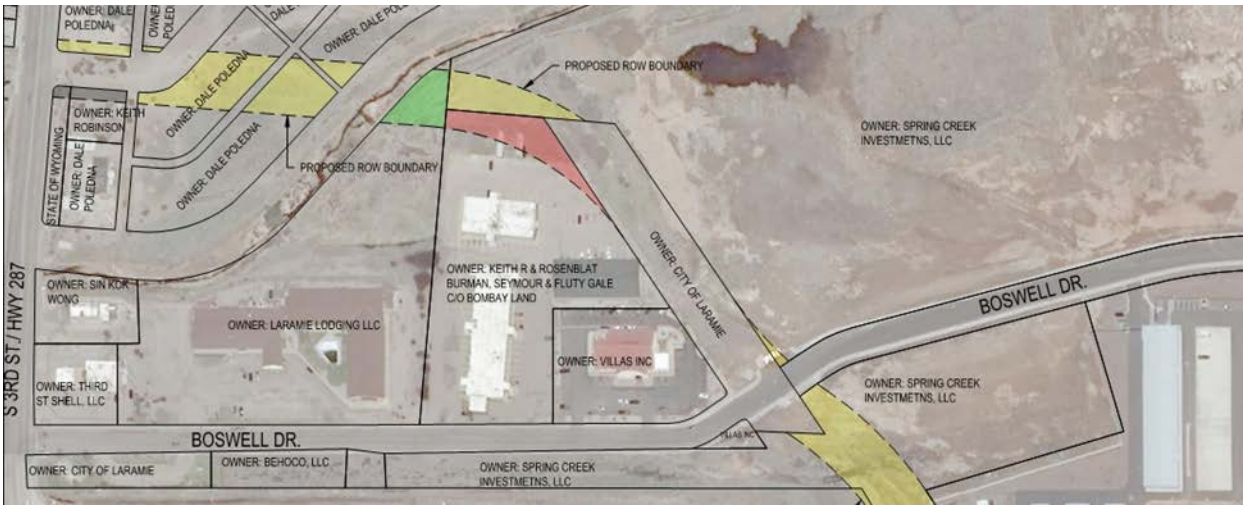


Figure 5.13 Right-of-way Requirement Alternative 3 Detail

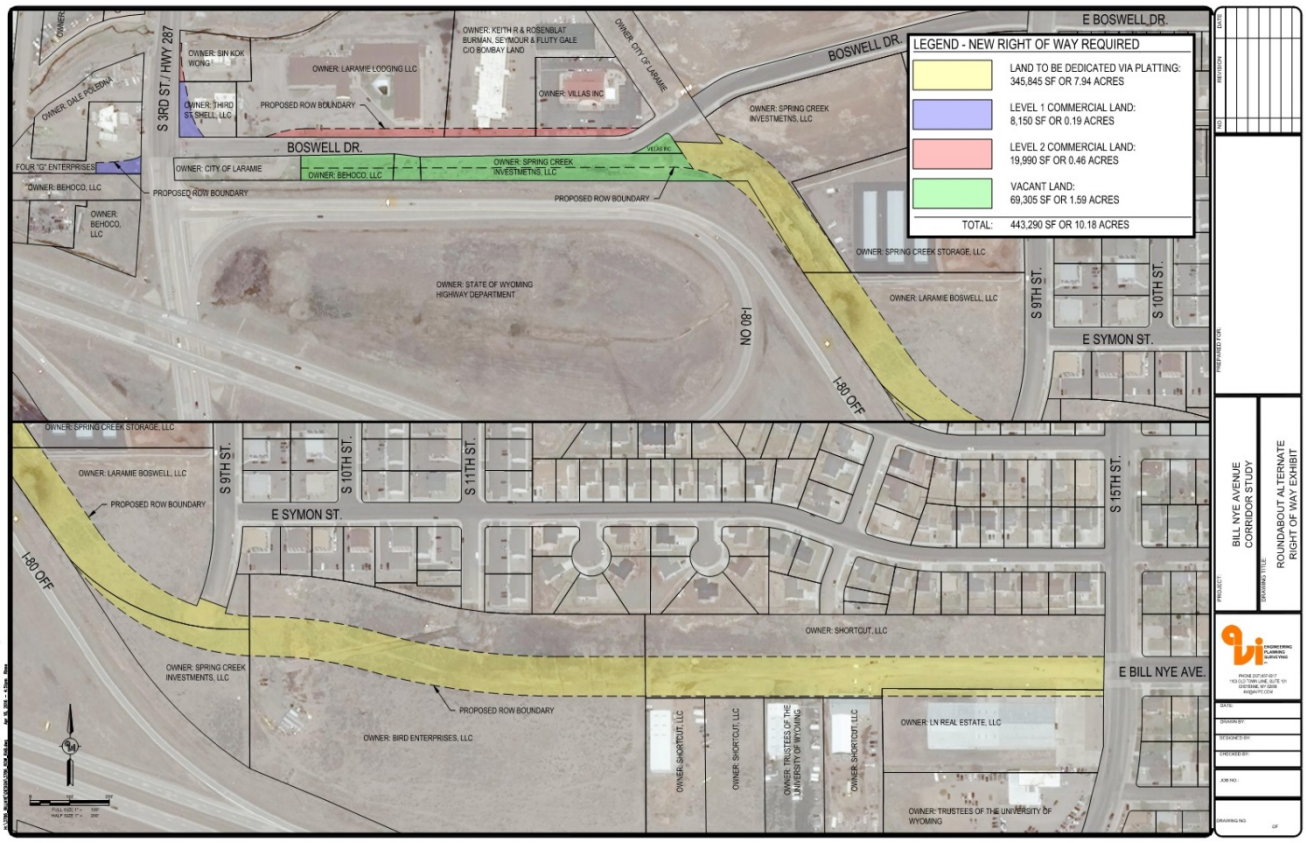


Figure 5.14 Right-of-way Requirements Alternative 4

Figure 5.15 Alternative Right-of-way Requirements Alternative 4 Detail

Engineer's Opinion of Probable Costs

Cost estimates for the alternatives were developed using the following information and assumptions. Please note that the total costs and unit prices are calculated in Present Worth or Present Value dollars. Adjustments should be made for years beyond the present to better estimate the needed dollars for any future improvement plan(s).

Table 5.4 Cost Estimates

Description of Area	Construction Cost (1)	Right-of-way Cost (2)	Engineering Design (3)	Total	For Estimate
Alternative 1: **Do Nothing**	$ 283,376.10	$ -	$ 24,641.40	$ 308,017.50	**$ 310,000**
Alternative 2: **Realign Boswell Drive**	$ 4,375,468.25	$ 1,589,020.00	$ 190,237.75	$ 6,154,726.00	**$ 6,160,000**
Alternative 3: **East Palmer Drive**	$ 6,059,914.65	$ 148,140.00	$ 263,474.55	$ 6,471,529.20	**$ 6,480,000**
Alternative 4: **RAB 3rd Street**	$ 4,916,573.15	$ 798,820.00	$ 427,528.10	$ 6,142,921.25	**$ 6,150,000**

Cost Estimates were developed using data from the Colorado Department of Transportation (CDOT) 2014 & 2015 Cost Data Book compiled by the Engineering Estimates and Marketing Analysis Unit; 2014 & 2015 Weighted Average Bid Prices, complied by WYDOT; Typical Costs from historical AVI project experience.

Right-of-way costs are based on listed values of adjacent similar properties gathered by the City of Laramie Planning Division and historical AVI project experience from projects in the region and projects with similar characteristics.

Quantities are based on the Conceptual Improvement Plan layouts. Please see Appendix E for additional information.

Conceptual Options and Recommended Alternative

As previously discussed, the goal of the recommended alternative was to create a practical alignment that resulted in a multi-model corridor which fulfilled the following primary objectives:

- Is sensitive to the needs of the property owners,
- Promotes safety,
- Minimizes long term maintenance,

- Serves all transportation users,
- Facilitates inner City connectivity,
- Encourages economic development.

In order to properly evaluate the alternatives and ultimately make a recommendation, a systematic approach was utilized based on criteria developed from the primary purpose, goals, and objectives of the corridor. Fundamentally, the primary purpose of the Bill Nye Corridor extension is to facilitate inner City connectivity and encourage economic development. Consequently, the following criteria were developed and used to determine the recommended alignment alternative.

Evaluation Criteria

- **Construction Cost**. Preliminary level construction costs are summarized in **Table 5.4 Cost Estimates** and detailed in **Appendix D**.
- **Right-of-way Cost**. Estimated areas of right-of-way requirements for each alternative were used to estimate right-of-way cost. See **Figure 5.10** to **Figure 5.15** and **Table 5.4 Cost Estimates**.
- **Constructability**. The constructability parameter is based the ease of construction and the ability to create the minimum impact of activities to adjacent landowners, businesses, and the traveling public.
- **Ability to Phase Construction**. The relative ease of constructing an alternative in sequential phases or layered components.
- **Maintenance Cost**. This consists of operating costs and indirect costs for maintenance. Maintenance includes routine upkeep, replacements. Indirect costs are unforeseen expenditures that may occur as a result of implementation of an alternative (e.g. impact cost to other roadways, etc.).
- **Public Consensus**. Input from the public involvement process based on the written and verbal comments received and summarized in the Foundation section of the study.
- **Direct Property Impacts**. The amount of relative negative impact of an alternative to existing business or property based on physical impact as a result of property requirements or change in access points.
- **Adjacent Impacts**. Adverse impacts including the effects on neighborhoods, intersection proximity to other major roads by implementing or modifying the corridor.
- **Environmental Impact**. The alternative has potential to affect environmental constraints such as wetlands, waterbodies, floodplains, etc. Please see the Environmental Review, **Appendix F**.
- **Qualitative Traffic Analysis**. The alternative that best provides the highest operation level or service at the horizon year 2035. See **Appendix D Traffic Analysis, Table 3** for additional information.
- **Meets the Project Purpose**. The alternative the best meets the project state of purpose to facilitate inner City connectivity and encourage economic development.

The following **Table 5.5 Alternatives Analysis** summarizes the alternative analysis and identifies the preferred alternative based on the evaluation criteria. The weighted scoring is set up with one (1) being the least expensive or easier to complete and four (4) being the more expensive or harder to complete, one (1) being the best ranked or (4) being the worst ranked, or one (1) being the most favorable and four (4) being the least favorable. Based upon the scoring criteria the option with the lowest average is the highest-ranking option.

Table 5.5 Alternatives Analysis

Criteria	Alternative 1 Do Nothing	Alternative 2 Boswell Realignment	Alternative 3 E. Palmer Extension	Alternative 4 RAB at 3rd Street
Construction Cost	1	2	4	3
Right-of-way Cost	1	2	4	3
Constructability	1	4	3	2
Ability to Phase Construction	1	4	3	2
Maintenance Cost	4	1	2	3
Public Consensus	4	1	3	2
Direct Property Impacts	1	4	2	3
Adjacent Impacts	4	3	2	1
Environmental Impact	Yes	Yes	Yes	Yes
Qualitative Traffic Analysis	4	3	2	1
Meets Goals and Objectives	4	3	1	2
Average	**2.5**	**2.7**	**2.6**	**2.2**

Table 5.5 Alternatives Analysis provides an excellent overall summary of the fundamental components reviewed throughout the corridor study. However, the table does not place a weight or value to each of the individual criteria listed. The value of a particular criterion is subjective and therefor depends on the perspective of the person assessing measures. All the final proposed conceptual alternatives presented meet the goal, purpose, and objective of the alignment with the exception of the “Do Nothing” option. This option fails to meet the project needs and may impact Spring Creek and associated wetlands. Therefore, it was eliminated from final consideration as a viable alternative. Furthermore of the remaining three alternative alignments, Alternative 2: Realign Boswell Drive significantly impacts the existing building structures and businesses. Given that that some of the businesses would be required to relocate, we also eliminated that option from the final consideration.

As shown in **Table 5.5 Alternatives Analysis** the remaining two alternatives Alternative 3: E. Palmer Drive and Alternative 4: Roundabout at 3rd Street clearly separated themselves from the others in terms of meeting the overall goals, objectives, and criteria of the project. Both of these alternatives received positive feedback from the public open house, create the required east west connection across Laramie, and can handle the future traffic demands projected for the area.

Several design challenges are related to the development of a roundabout due to the proximity of to the existing Shell Service Station at the northeast corner of Boswell Drive and 3rd Street and accommodation of large trucks and emergency vehicles. Through proper design, roundabouts can easily accommodate emergency and large sized vehicles. Other special design considerations for this roundabout includes: truck movements; pedestrian and bike accommodation; single lane to double lane signing and stripping issues. However, we recommend Alternative 4: Roundabout at 3rd Street based on the following reasons:

- Improved Safety (e.g. Reduce injury crashes). It should be noted that property damage crashes will likely increase until users become accustomed to traversing the roundabout but, serious crashes will be virtually eliminated compared to four-way or signalized intersection.
- Reduced long term maintenance cost
- Improved traffic flow and efficiency
- No signal equipment to install and repair (i.e. savings on electrical and maintenance costs).
- Improved traffic flow and efficiency for intersections that handle left turns
- Eliminates the need for a for future anticipated and projected signalization of WBL On/ Off Ramps
- Reduces confusion related to the I-80 WB On/ Off Ramp location and separation for non-local traffic
- Eliminates the need for auxiliary storage lanes
- Slower traffic speeds
- Create a Southern Gateway into Laramie
- 3rd Street box culvert extension required instead of bridge or large culvert installation for the E. Palmer Drive Extension.

The final recommendation is for the City of Laramie to set aside or appropriate funds and hire a consultant to complete 100% construction drawings of the corridor.

Summary of Corridor Recommendations

Funding Options:

- The public sector (City of Laramie, WYDOT, etc.) will primarily play an important role in "readying the area for private investment" through infrastructure improvements, public planning and policy initiatives. From these initiatives and/or investments, private sector development and redevelopment can be leveraged.
- Funding mechanisms for public infrastructure could include loans and grants (e.g., Wyoming Business Council's Business Ready Community Program and Community Facilities Grant and Loan Program); Community Development Block Grant (CDBG) funds; revenue bonds; and general obligation bonds; and 1% Special Use Tax.
- A public-private partnership for development will likely take many forms and have many partners, responsibilities and funding alternatives. In the end, a successful partnership will ensure that both the public and private sectors will realize reasonable returns on their investments and the community will realize their long-term vision for this important transportation corridor.

Recommendations:

- Fund a design /drainage improvement plan for the construction of the corridor and proposed two lane roundabout improvements for Alternative 4: Roundabout at 3rd Street.
- Implement wet and dry utility priority projects as funding resources become available or development becomes the catalyst.
- Reserve right-of-way as development occurs along the undeveloped corridor.
- Implement Construction Phased Strategies along Corridor.
- Explore opportunities, as area develops, to provide roadway storm water detention / retention features / facilities.
- Implement Typical Section(s) as development occurs.
- Update/ install strategic street lighting at key intersections as development occurs.

APPENDIX A

Improvement Plans

ENGINEERING
PLANNING
SURVEYING
PC

35% DESIGN PLANS FOR

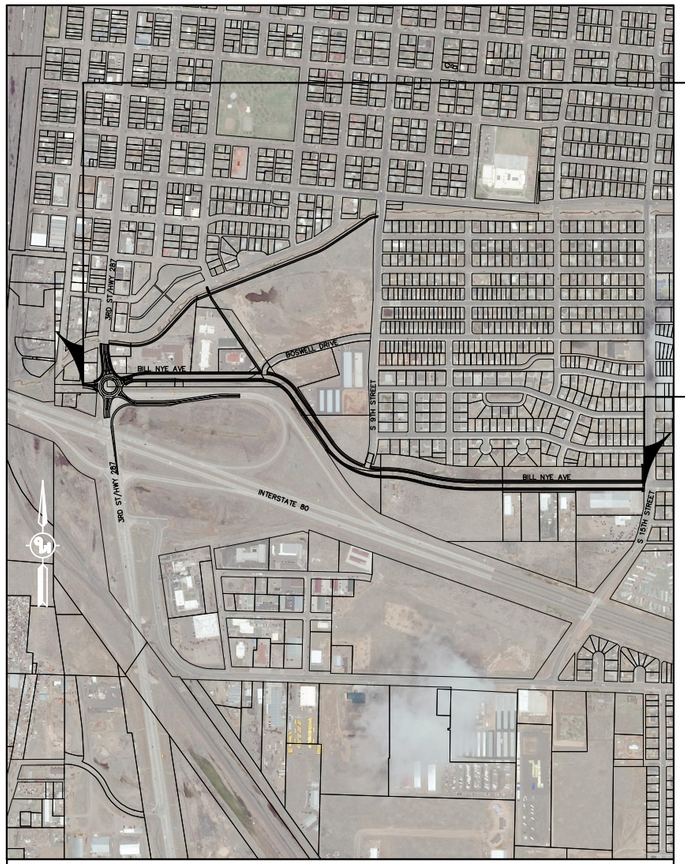
BILL NYE AVENUE CORRIDOR PLAN

OWNER

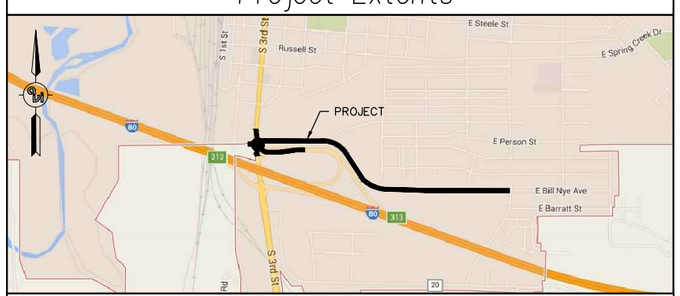
CITY OF LARAMIE
406 IVINSON STREET
CHEYENNE, WY 82070

ENGINEER:

AVI PC
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WYOMING 82001
307.637.6017
FAX 307.632.9326
WWW.AVIPC.COM



Project Extents



Vicinity Map – Laramie, Wyoming

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS
3 – 6	BILL NYE AVE PLAN & PROFILES
7	3RD STREET PLAN & PROFILE

ROADWAY LENGTHS	
BILL NYE AVE	5,003 FT
3RD STREET	659 FT
TOTAL	5,662 FT

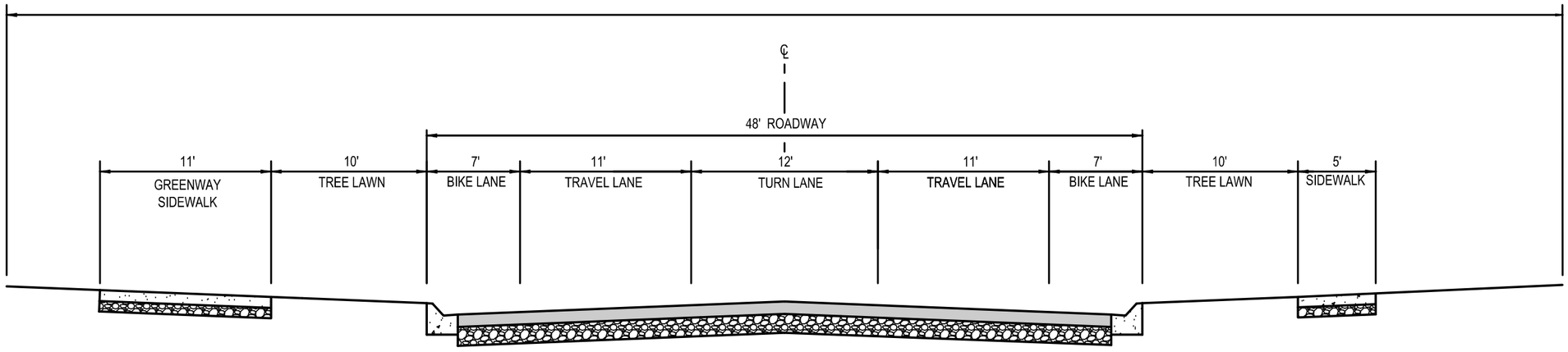
ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WYOMING.

811 Know what's **below.** **Call** before you dig.

PROJECT SURVEY DATUM
HORIZONTAL DATUM: _____
VERTICAL DATUM: _____

BILL NYE AVENUE
PROPOSED TYPICAL SECTION
WEST TO EAST



NO.	REVISION	DATE

PREPARED FOR:
CITY OF LARAMIE
406 IVINSON ST
LARAMIE, WY 82070

PROJECT:
BILL NYE AVENUE CORRIDOR STUDY

DRAWING TITLE:
TYPICAL SECTION

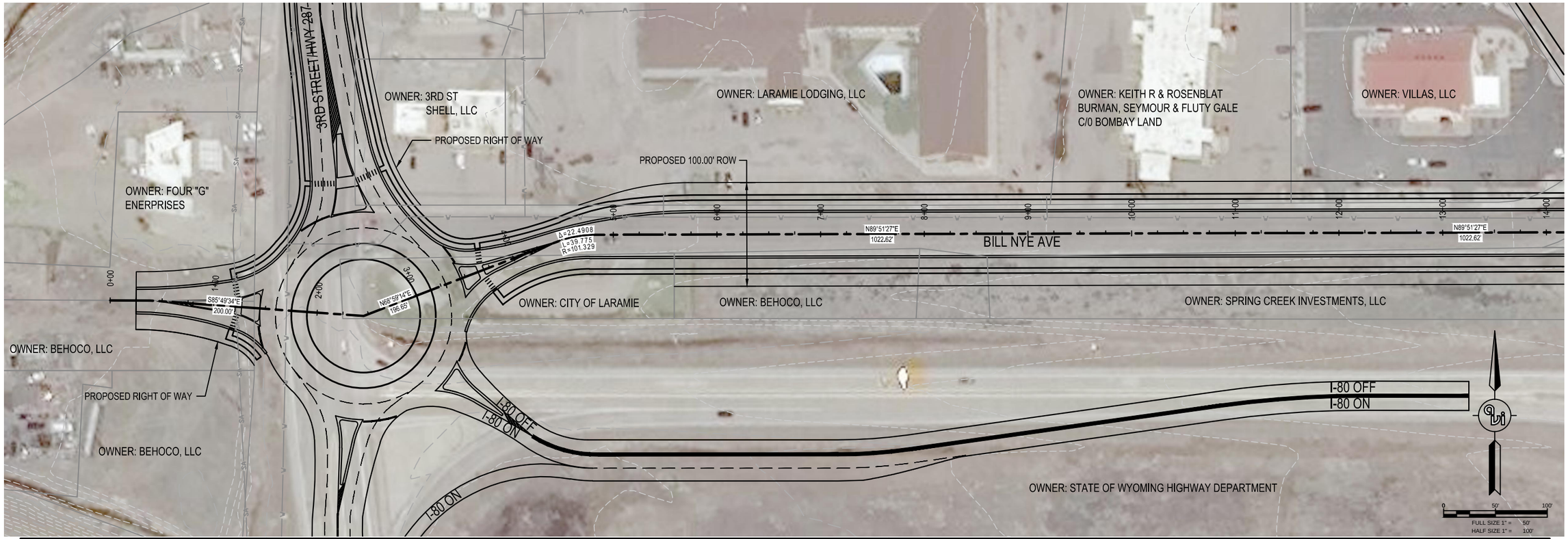
ENGINEERING
PLANNING
SURVEYING
PC
307.637.6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009
AVI@AVIPC.COM

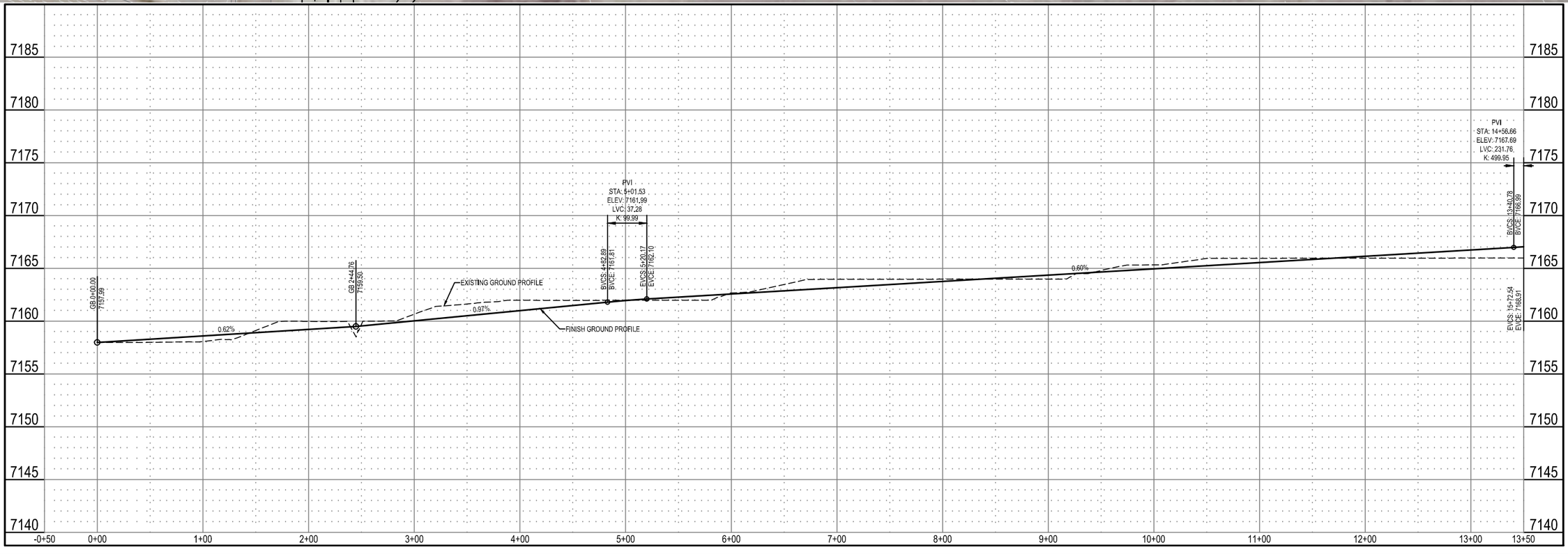
DATE:
3/18/2016
DRAWN BY:
JDW
DESIGNED BY:
JDW
CHECKED BY:
TDC

JOB NO.:
2-3786.15

DRAWING NO. 2 OF

H:\3786_BILLNYE\DESIGN\3786_TYPICALS.dwg Mar 18, 2016 - 3:49pm jwilson





PREPARED FOR:
CITY OF LARAMIE
406 IVINSON ST
LARAMIE, WY 82070

NO.	REVISION	DATE

PROJECT:
BILL NYE AVENUE CORRIDOR STUDY

DRAWING TITLE:
BILL NYE AVENUE PLAN & PROFILE

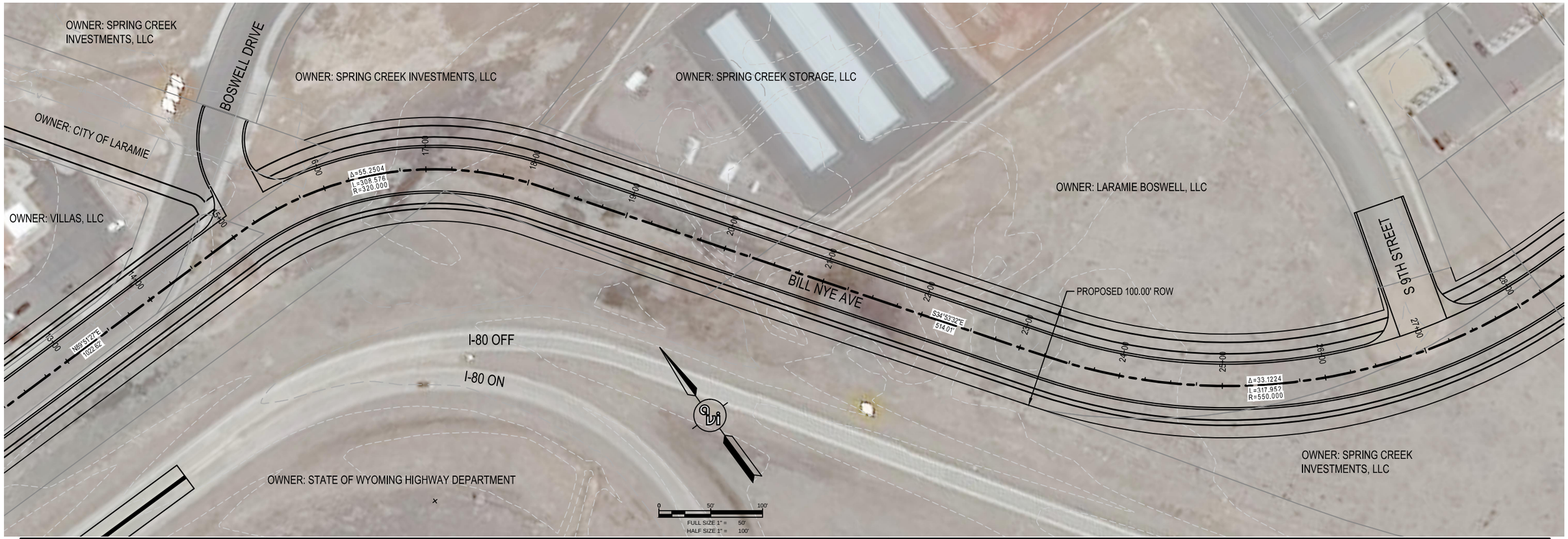
ENGINEERING PLANNING SURVEYING
307.637.6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009
AVI@AVIPC.COM

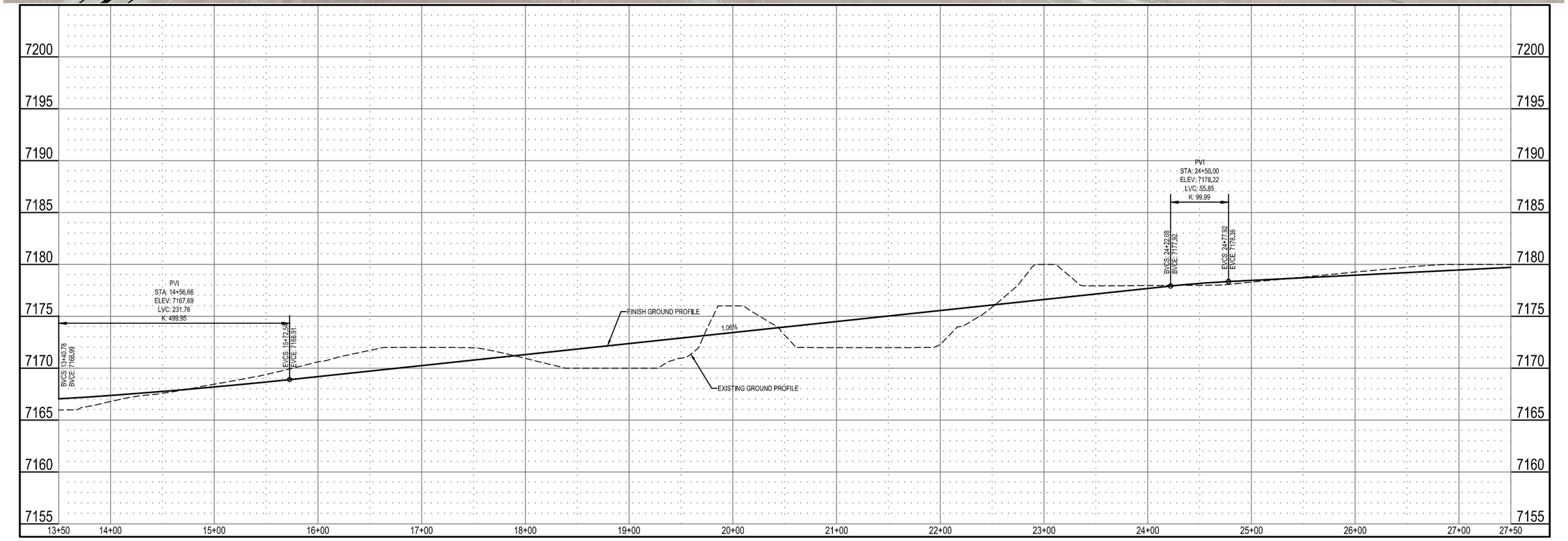
DATE: 3/18/2016
DRAWN BY: JDW
DESIGNED BY: JDW
CHECKED BY: TDC

JOB NO.: 2-3786.15

DRAWING NO. 3 OF

lst: \3786_BILLNYE\DESIGN\3786_DESIGN.dwg Mar 18, 2016 - 3:29pm jwilson





PREPARED FOR:
CITY OF LARAMIE
406 IVINSON ST
LARAMIE, WY 82070

NO.	REVISION	DATE

PROJECT:
BILL NYE AVENUE CORRIDOR STUDY

DRAWING TITLE:
BILL NYE AVENUE PLAN & PROFILE

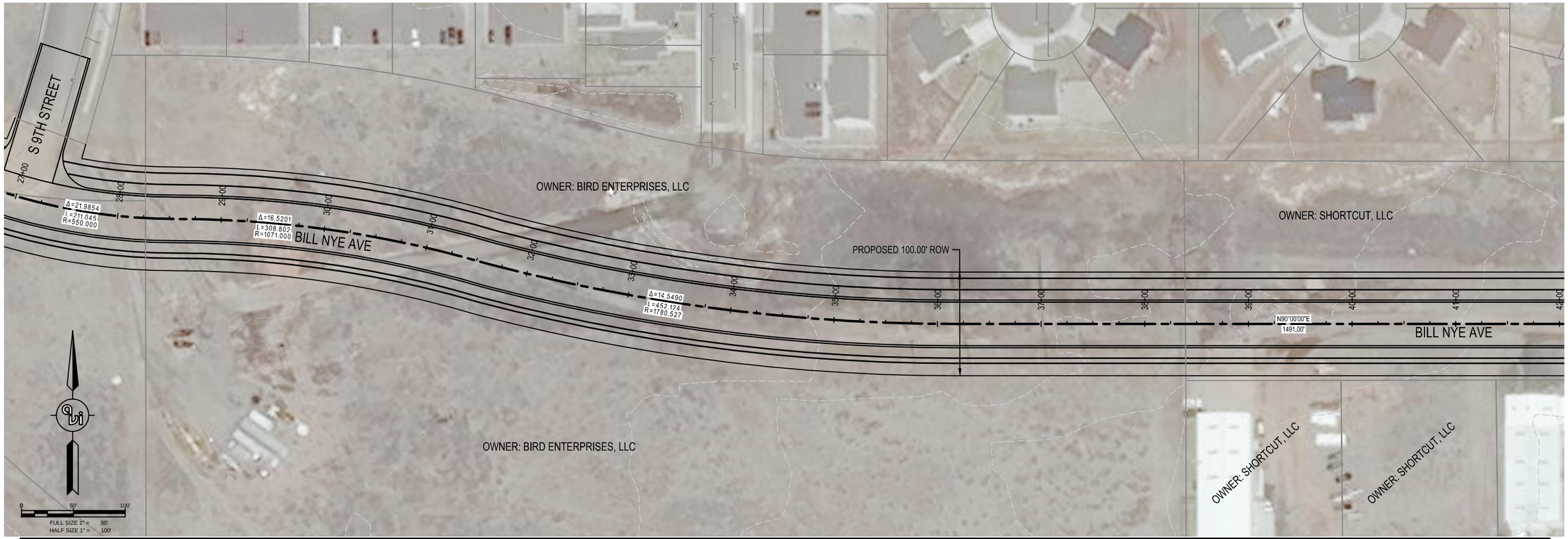
ENGINEERING PLANNING SURVEYING PC
307.637.6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009
AVI@AVIPC.COM

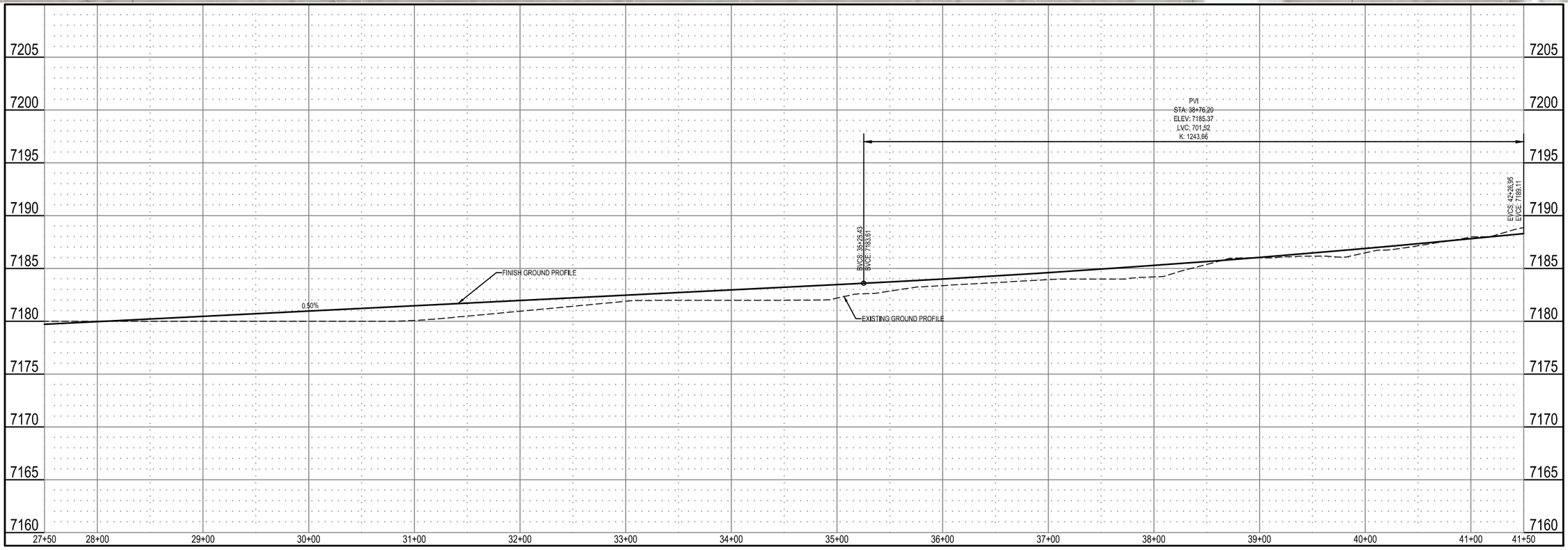
DATE: 3/18/2016
DRAWN BY: JDW
DESIGNED BY: JDW
CHECKED BY: TDC

JOB NO.: 2-3786.15

DRAWING NO. 4 OF

I:\3786_BILLNYE\DESIGN\3786_DESIGN.dwg Mar 18, 2016 - 3:31pm jallison





NO.	REVISION	DATE

PREPARED FOR:
CITY OF LARAMIE
406 IVINSON ST
LARAMIE, WY 82070

PROJECT:
BILL NYE AVENUE CORRIDOR STUDY

DRAWING TITLE:
BILL NYE AVENUE PLAN & PROFILE

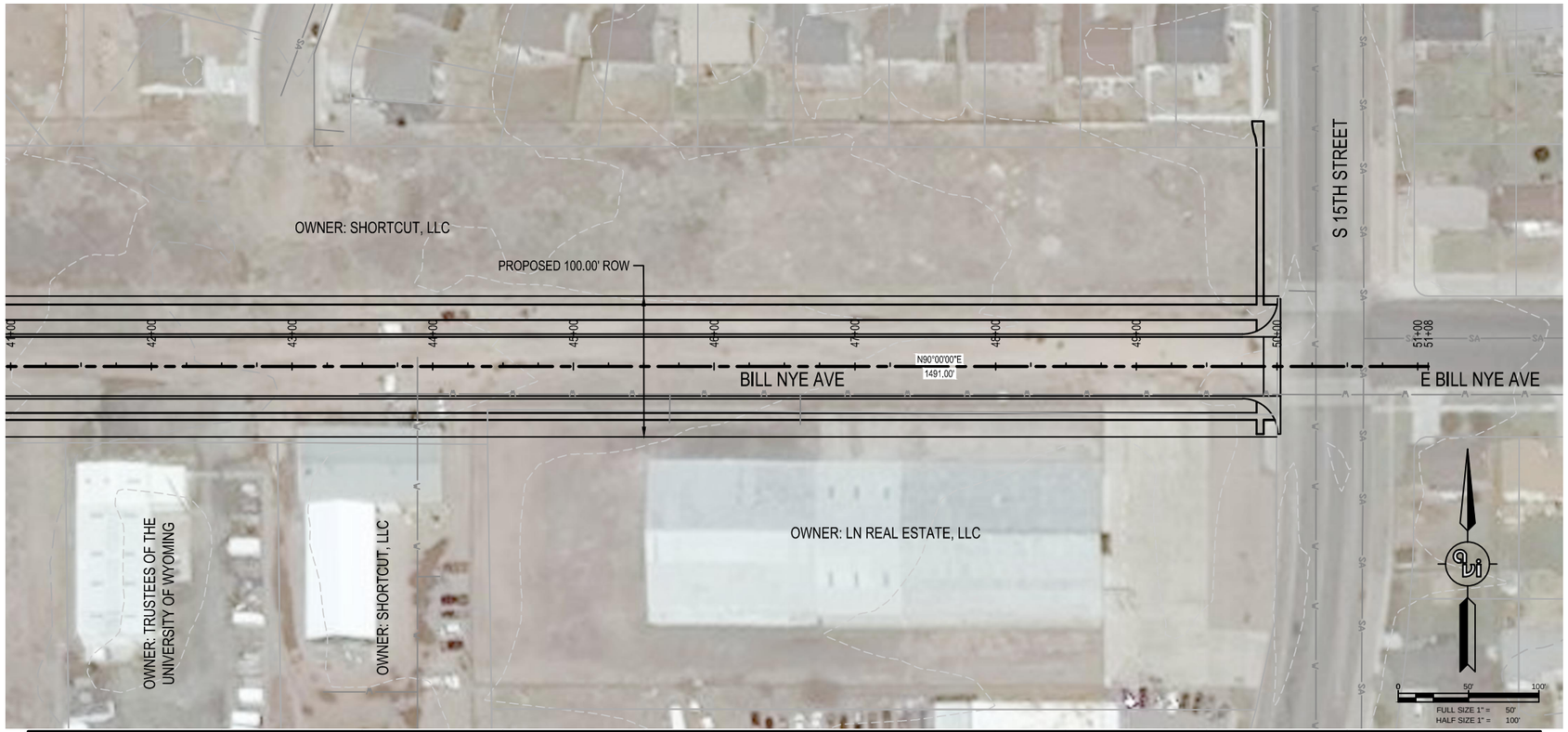
ENGINEERING
PLANNING
SURVEYING
307.637.6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009
AVI@AVIPC.COM

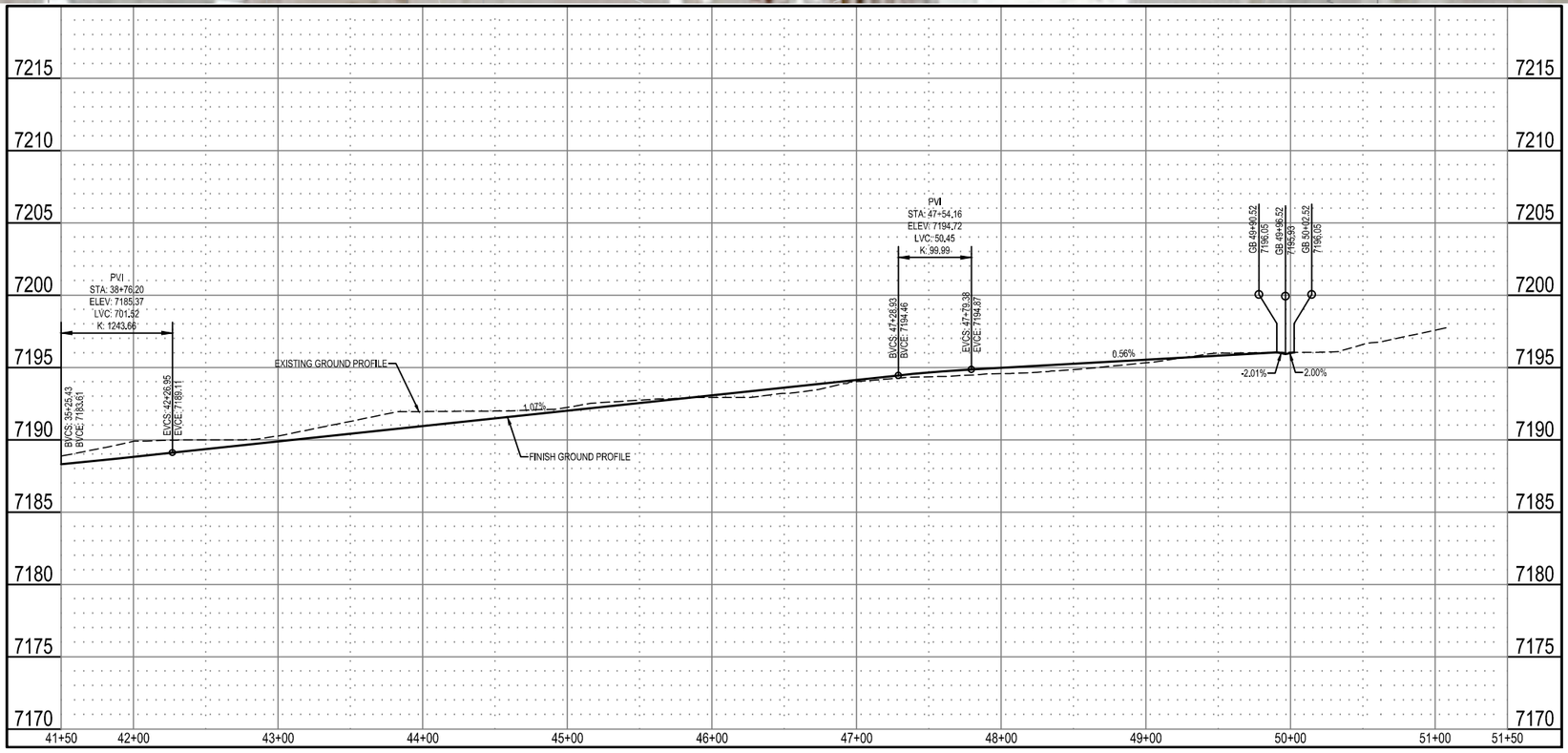
DATE: 3/18/2016
DRAWN BY: JDW
DESIGNED BY: JDW
CHECKED BY: TDC

JOB NO.: 2-3786.15

DRAWING NO. 5 OF

H:\3786_BILLNYE\DESIGN\3786_DESIGN.dwg Mar 18, 2016 - 3:38pm jwilson





NO.	REVISION	DATE

PREPARED FOR:
CITY OF LARAMIE
406 IVINSON ST
LARAMIE, WY 82070

PROJECT:
BILL NYE AVENUE CORRIDOR STUDY

DRAWING TITLE:
BILL NYE AVENUE PLAN & PROFILE

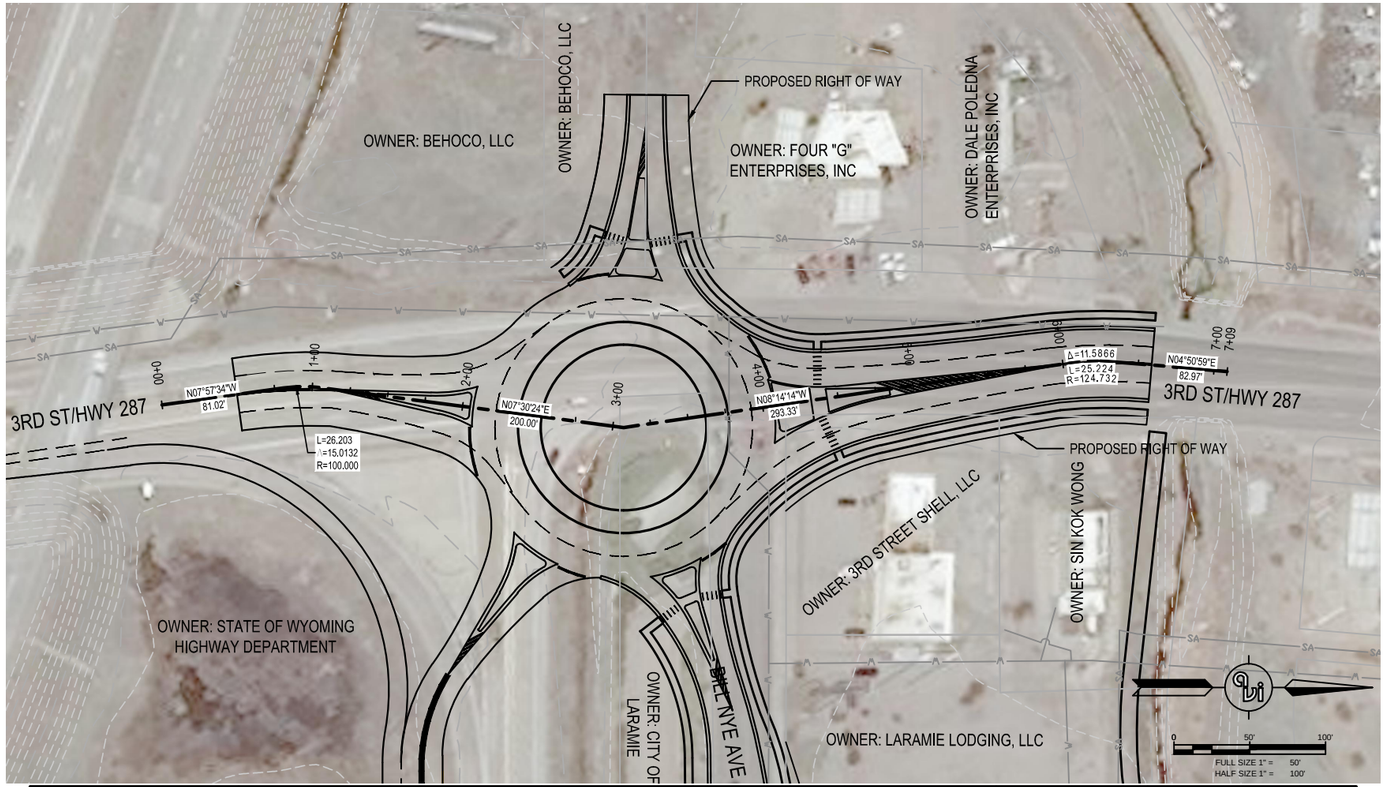
ENGINEERING
PLANNING
SURVEYING
307.637.6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009
AVI@AVIPC.COM

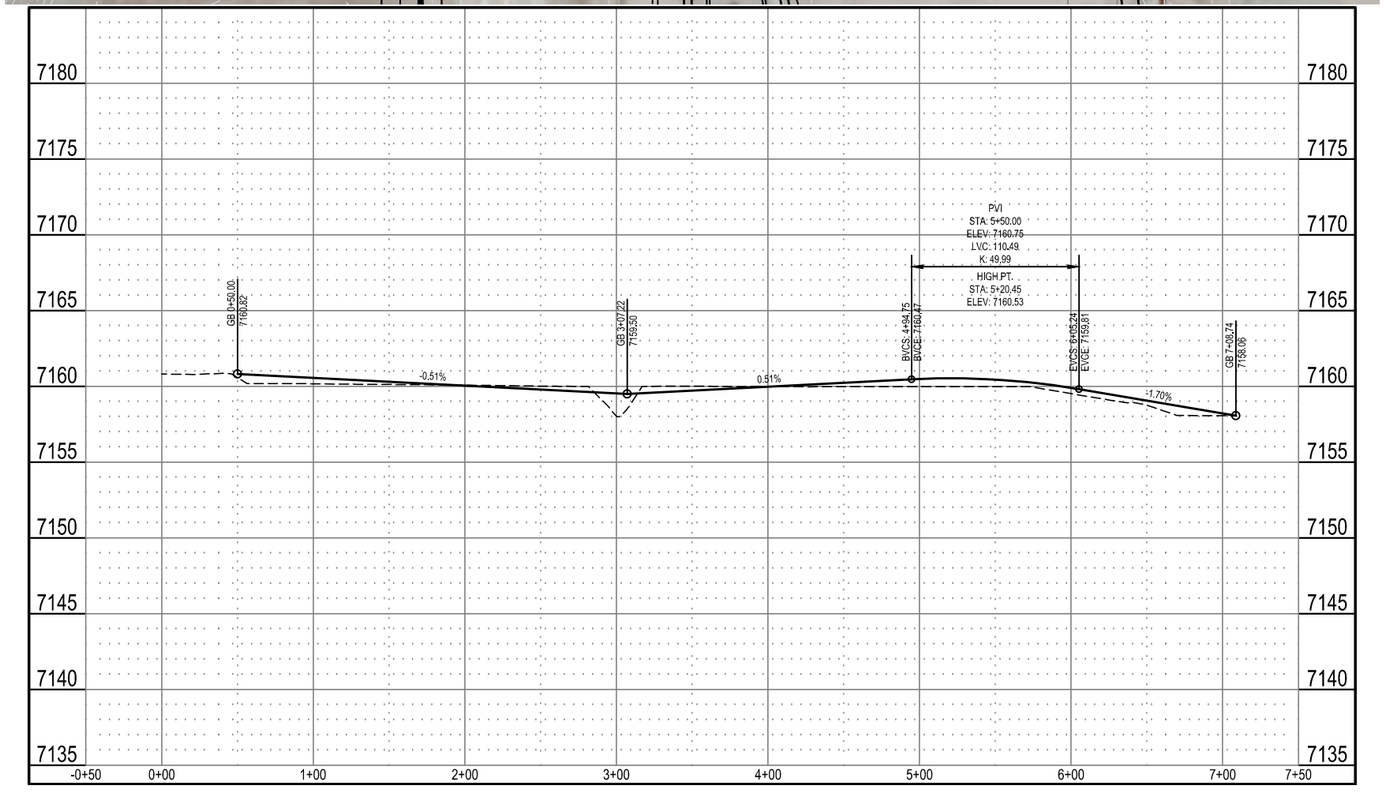
DATE: 3/18/2016
DRAWN BY: JDW
DESIGNED BY: JDW
CHECKED BY: TDC

JOB NO.: 2-3786.15

DRAWING NO. 6 OF

H:\3786_BILLNYE\DESIGN\3786_DESIGN.dwg Mar 18, 2016 - 3:35pm jwilson





NO.	REVISION	DATE

PREPARED FOR:
CITY OF LARAMIE
406 IVINSON ST
LARAMIE, WY 82070

PROJECT:
BILL NYE AVENUE CORRIDOR STUDY

DRAWING TITLE:
3RD STREET PLAN & PROFILE

ENGINEERING PLANNING SURVEYING PC
307.637.6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009
AVI@AVIPC.COM

DATE: 3/18/2016
DRAWN BY: JDW
DESIGNED BY: JDW
CHECKED BY: TDC

JOB NO.: 2-3786.15

DRAWING NO. 7 OF

H:\3786_BILLNYE\DESIGN\3786_DESIGN.dwg Mar 18, 2016 - 3:59pm jwilson

APPENDIX B

Public Meetings

ENGINEERING
PLANNING
SURVEYING
PC

City of Laramie
406 Ivinson St.
Laramie, WY 82070

City of Laramie
406 Ivinson St.
Laramie, WY 82070

City of Laramie
406 Ivinson St.
Laramie, WY 82070

City of Laramie
406 Ivinson St.
Laramie, WY 82070

Bill Nye Avenue Corridor Study

When: Wed. October 21, 2015
Where: Albany County Library
310 S 8th St
Laramie, WY 82070

Time: 5:00 p.m. – 7:00 PM
Presentation at 5:15 p.m.

The purpose of this meeting is to provide an update on the plan, further solicit ideas and comments.

For additional information and updates, please check the City of Laramie Website at http://www.ci.laramie.wy.us/
Or Contact Tom Cobb at AVI, P.C. email: cobb@avipc.com or 307.637.6017

Bill Nye Avenue Corridor Study

PLEASE JOIN US for a OPEN HOUSE & PRESENTATION

When: Wed. October 21, 2015
Where: Albany County Library
310 S 8th St
Laramie, WY 82070

Time: 5:00 p.m. – 7:00 PM
Presentation at 5:15 p.m.

The purpose of this meeting is to provide an update on the plan, further solicit ideas and comments.

For additional information and updates, please check the City of Laramie Website at http://www.ci.laramie.wy.us/
Or Contact Tom Cobb at AVI, P.C. email: cobb@avipc.com or 307.637.6017

Bill Nye Avenue Corridor Study

PLEASE JOIN US for a OPEN HOUSE & PRESENTATION

When: Wed. October 21, 2015
Where: Albany County Library
310 S 8th St
Laramie, WY 82070

Time: 5:00 p.m. – 7:00 PM
Presentation at 5:15 p.m.

The purpose of this meeting is to provide an update on the plan, further solicit ideas and comments.

For additional information and updates, please check the City of Laramie Website at http://www.ci.laramie.wy.us/
Or Contact Tom Cobb at AVI, P.C. email: cobb@avipc.com or 307.637.6017

Bill Nye Avenue Corridor Study

PLEASE JOIN US for a OPEN HOUSE & PRESENTATION

When: Wed. October 21, 2015
Where: Albany County Library
310 S 8th St
Laramie, WY 82070

Time: 5:00 p.m. – 7:00 PM
Presentation at 5:15 p.m.

The purpose of this meeting is to provide an update on the plan, further solicit ideas and comments.

For additional information and updates, please check the City of Laramie Website at http://www.ci.laramie.wy.us/
Or Contact Tom Cobb at AVI, P.C. email: cobb@avipc.com or 307.637.6017

FOUR G" ENTERPRISES INC
PO BOX 310
LARAMIE, WY 82073

ELKEN, CAROLYN
PO BOX 9494
RANCHO CUCAMONGA, CA 91701

DAVIS FUNERAL HOME INC
2203 W MAIN ST
RIVERTON, WY 82501

BIRD ENTERPRISES, LLC, A WY LLC
PO BOX 1363
LARAMIE, WY 82073

BELL, JOHN W; ROBERT L SR
PO BOX 1232
LARAMIE, WY 82073

DAVIS, ROBERT P; DEBRA B
3416 MAMMOTH CT
LARAMIE, WY 82072

ALBURN, CRAIG ROBERT; ANN M
1083 DUNA DR
LARAMIE, WY 82072

FORRY, TODD S; DEBY L
2713 DOVER DR
LARAMIE, WY 82072

DEYOUNG, CHRISTOPHER JORDAN, JANINE
1555 N 22ND ST
LARAMIE, WY 82072

DREW, THOMAS D; KAREN M
1602 DOWNEY ST
LARAMIE, WY 82072

DESALLE, MARC; CRYSTAL
1510 ORD ST
LARAMIE, WY 82070

A.M. RENTALS, LLC, A WY LLC
1309 SPRING CREEK DR
LARAMIE, WY 82070

BOUTILLIER, GLENN
1019 S 10TH ST
LARAMIE, WY 82070

GOODIN, SUSANNA
1005 S 7TH ST
LARAMIE, WY 82070

BELL, ROBERT L; JOHN W
1303 S 2ND
LARAMIE, WY 82070

GASSON, WALTER F
REVOCABLE TRUST GASSON,
KIM REVOCABLE TRUST
10115 WIND DANCER RD
CHEYENNE, WY 82009

STROOT, MATTHEW P
PO BOX 2439
LARAMIE, W 82003

COLLINS, MICHAEL D & STACY J
9056 US HIGHWAY 285 S
ALAMOSA, CO 81101

ANDERS, RANDALL F & ROBIN S
8443 US HIGHWAY 85
FORT LUPTON, CO 80621

BUTCHER, CLINTON H
7005 BLACK RIDGE DR
EL PASO, TX 79912

DAVIES, JOSEPH P & TASHA M TRUST DAVIES, JOSEPH P & TASHA M, TRUSTEES
14108 ENGLAND ST
OVERLAND PARK, KS 66221

DOUBLE G VENTURES LLC, A WY LLC
ATTN: GRAHAM, TODD
PO BOX 6279
BOZEMAN, MT 59771

GOODTREE DEVELOPMENT CO II, LLC, A WY LL
ATTN: GOODMAN, PHILLIP
2475 STUART ST
BROOKLYN, NY 11229

CHITOOR, CHANDRAMOHAN SRIDHARAN
324 CONSTITUTION CIRCLE
NORTH BRUNSWICK, NJ 08902

SMITH-CONROY LIVING TRUST SMITH-CONROY, DIANE & DEAN P, TRUSTEES
4460 B GROUSE CREEK RD
CHEWELAH, WA 99109

GOLIKE, SCOTT A & ROBERTA L
15841 28TH AVE NE
SHORELINE, WA 98155

MARTIN, LING; RAYMOND S III
47736 AVALON HTS
FREMONT, CA 94539

MARTIN, RAYMOND S; LING
47736 AVALON HTS TER
FREMONT, CA 94539

LINDER FAMILY REV TRUST LINDER, DAVID C, JR; REGINA D TTEES
130 E WOODWARD DR
TULARE, CA 93274

FRAZIER, JANET LEE
25422 TRABUCO RD STE 105-391
LAKE FOREST, CA 92630

NELSON, THOMAS A
26131 MCBEAN PKWY 120
VALENCIA, CA 91355

STILLINGS, LISA LYNN POULSON, SIMON ROGER
3352 EVERETT DR
RENO, NV 89503

SONDEREGGER, DEREK L
3850 N PATTERSON BLVD
FLAGSTAFF, AZ 86004

KELLOGG, DAVID H LIV TRUST KELLOGG, DAVID H TRUSTEE
60366 E ANKOLE DR
ORACLE, AZ 85623

PODLESNIK, ADELAIDE A ATTN: PODLESNIK, ADELAIDE C
5927 E AIRE LIBRE LN
SCOTTSDALE, AZ 85254

LEE, MICHELLE L
200 E KNOX RD LOT 182
CHANDLER, AZ 85225

LARAMIE BOSWELL, LLC, A UT LLC
230 EAST SOUTH TEMPLE
SALT LAKE CITY, UT 84111

ESPENSCHEID, BRIAN & ANNE E ESPENSCHEID, CHAD & GUDRID
PO BOX 430
BIG PINEY, WY 83113

MILL CREEK PROPERTIES, LLC ATTN: FENN, WILLIAM F
PO BOX 423
PINEDALE, WY 82941

PETERSON, ADRIANNE
PO BOX 1186
PINEDALE, WY 82941

VICKREY, MICHAEL D & DEBORAH J
PO BOX 441
PINEDALE, WY 82941

MCKINNEY PROPERTIES, LLC, A WY CLOSE LLC ATTN: MCKINNEY, TIM/JENNIFER
PO BOX 35
102 NOBLE RD
CORA, WY 82925

FIELDS, CHRISTOPHER A; CONNIE J GILCHRIST, GREGORY LEE
805 EISENHOWER DR
ROCK SPRINGS, WY 82901

GRAY, LEONARD A & BRENDA G
1008 PINTO
ROCK SPRINGS, WY 82901

GREIG, T; WEST, J; PELDO, C; LEE, R
426 SHADOW RIDGE BLVD
SHERIDAN, WY 82801

STEIR, JOHN & PEGGY
1441 N HEIGHTS AVE
SHERIDAN, WY 82801

GREEN, CHARLES GREGORY GREEN, ALLEN
70 HAYFIELD PLACE
GILLETTE, WY 82718

BOUZIS, NEKTARIOS ANTHONY
708 W 8TH ST
GILLETTE, WY 82716

THOREN, BRUCE J & SABRINA
PO BOX 178
SHOSHONE, WY 82649

ANDERSON FAMILY TRUST ANDERSON, LINDA L & MARLIN D, TRUSTEES
358 ESTERBROOK RD
DOUGLAS, WY 82633

BOYER, BRYAN G & TAMI L
1 SIERRA
DOUGLAS, WY 82633

LUCK-TORRY, KERRY
521 SEMINOE ST
CASPER, WY 82609

WIGINTON, CECIL; LYNNETTE
2050 W 38TH ST
CASPER, WY 82604

ROMAN REAL ESTATE & INVESTMENTS, LLC ATTN: MCINTYRE, RYAN
152 N DURBIN ST
STE 404
CASPER, WY 82601

REYNOLDS, DON A; CORA LEE
809 VANCE DR
LANDER, WY 82520

SORENSON, DAVID O & LEA R
1006 LANE 12
LOVELL, WY 82431

SANDRY, KELLY L & DONNA K
197 ROAD 20
CODY, WY 82414

SAULCY, JUDITH J FAMILY TRUST SAULCY, WILLIAM R, JR, TRUSTEE
PO BOX 127
ENCAMPMENT, WY 82325

OSBURN PROPERTIES, LLC, A WY LLC
PO BOX 565
GUERNSEY, WY 82214

PINNEO, KENNETH W; VICKI L
1354 SPRUCE ST
WHEATLAND, WY 82201

WHITNEY, FAY W
PO BOX 609
WHEATLAND, WY 82201

HOLMES, BRADLEY ALLEN; JULIE VIRGINIA
HC 64 BOX 402
MCFADDEN, WY 82083

BLUE SKY TECHNOLOGIES A WY CORP
PO BOX 1436
LARAMIE, WY 82073

BROWN, DORIS ANITA
PO BOX 177
LARAMIE, WY 82073

CANTWAY, D L LIV TRUST CANTWAY, D L & LINDA D TRUSTEES
PO BOX 1371
LARAMIE, WY 82073

DILLINGER, LOUIS F LIV TRUST DILLINGER, CAROL L LIV TRUST
PO BOX 914
LARAMIE, WY 82073

FELTZ, WAYNE
PO BOX 773
LARAMIE, WY 82073

GIEHM, NOEL & JANET LIVING TRUST GIEHM, NOEL R & JANET K, TRUSTEE
PO BOX 516
LARAMIE, WY 82073

JAIRELL, RUSSELL J
PO BOX 151
LARAMIE, WY 82073

JOHNSTON, RALPH R
PO BOX 702
LARAMIE, WY 82073

JONES, RODNEY G; CHLOE M
PO BOX 1044
LARAMIE, WY 82073

KENNEDY, THOMAS C REV TR ATTN: FIRST WESTERN TRUST BANK
PO BOX 1628
LARAMIE, WY 82073

KUNKEL, GARY GROSSI, SYLVIA
PO BOX 1063
LARAMIE, WY 82073

LARAMIE LAWNERY INC ATTN: RERUCHA, LUKE
PO BOX 425
LARAMIE, WY 82073

LINDGREN, CECILIA RAMIREZ, RANDAL
PO BOX 1010
LARAMIE, WY 82073

MACKINTOSH, FREDERICK JOHN & JESSICA L
PO BOX 1684
LARAMIE, WY 82073

MILLAR, ALAN J
PO BOX 681
LARAMIE, WY 82073

MILLER, GERALD R
PO BOX 1424
LARAMIE, WY 82073

MORENO, LLC, A WY LLC
PO BOX 1538
LARAMIE, WY 82073

MRH HOLDING, LLC, A WY CLOSE LLC
PO BOX 1670
LARAMIE, WY 82073

N K LEASING LLC ATTN: GIEHM, NOEL
PO BOX 516
LARAMIE, WY 82073

PETERSON, JERALD J
PO BOX 1174
LARAMIE, WY 82073

RAKESTRAW, DAVID D
PO BOX 2447
LARAMIE, WY 82073

RASMUSSEN, EDWARD C & ELIZABETH H
PO BOX 1621
LARAMIE, WY 82073

REHWALDT, MARK D LAWRENCE, JENNIFER J
PO BOX 893
LARAMIE, WY 82073

SATO, HIROKO
PO BOX 1103
LARAMIE, WY 82073

THIRD STREET SHELL, LLC, A WY LLC
ATTN: WARREN, GREG
PO BOX 370
LARAMIE, WY 82073

WAGGONER, JAMES WILLIAM; KARRI KAY
PO BOX 2124
LARAMIE, WY 82073

WOLF, JOE & JENNY
PO BOX 276
LARAMIE, WY 82073

WYOMING CONFERENCE ASSOCIATION OF
SEVENTH-DAY ADVENTISTS
PO BOX 945
LARAMIE, WY 82073

BARTKE, THEODORE & DIANA L
1160 ESCALERA DR
LARAMIE, WY 82072

BEHOCO, LLC, A WY LLC ATTN: BALL, SUSAN C
1267 N 15TH ST STE 121
LARAMIE, WY 82072

BOUCHER, JOEL D
2503 TULLIS CT
LARAMIE, WY 82072

BROWN, C C & LORIE & YOUNG, JAMES
1364 N 6TH
LARAMIE, WY 82072

BURNS, DAVID E & LISA M
1360 INDIAN HILLS DR
LARAMIE, WY 82072

BURY, JEFFREY T & SUSAN E
2142 EDWARD DR
LARAMIE, WY 82072

DINI, TERRENCE JON
1254 APACHE DR
LARAMIE, WY 82072

DODD, MICHELLE C & JERROLD G
2053 N 22ND ST
LARAMIE, WY 82072

EDWARDS, LAURIE H REV TRUST EDWARDS,
LAURIE H, TRUSTEE
4322 CHEYENNE DR
LARAMIE, WY 82072

FALL CREEK HOMEOWNERS ASSN
418 E UNIVERSITY
LARAMIE, WY 82072

FRANC, LORI JEAN REVOCABLE TRUST FRANC,
LORI JEAN, TRUSTEE
1085 COLINA DR
LARAMIE, WY 82072

HAINES, JEANNE M
459 ROGER CANYON RD
LARAMIE, WY 82072

HOCH, ANTHONY R
571 N 8TH ST
LARAMIE, WY 82072

HOLBROOK, W STEVEN & ZARE, BONNIE
1051 DUNA
LARAMIE, WY 82072

JCC PROPERTIES, LLC ATTN: COLTER, CHRIS A
1332 GRAFTON ST
LARAMIE, WY 82072

JOHNSTON, JAMES L
530 BEAUFORT ST 82
LARAMIE, WY 82072

L & P RENTALS, LLC, A WY LLC
3419 MAMMOTH CT
LARAMIE, WY 82072

LARSEN, MICHAEL EDWARD JOHNSTON, JAMES L
530 BEAUFORT ST 82
LARAMIE, WY 82072

LOCKHART, HUGH D
23 WARREN RANCH RD
LARAMIE, WY 82072

MAJOR, BRENT
868 N 14TH
LARAMIE, WY 82072

MEDINA, BETHEL; CHRISTOPHER S
460 N 8TH ST
LARAMIE, WY 82072

MILLER, PETER J & CASSIE D
4311 GRAYS GABLE
LARAMIE, WY 82072

MILLER, RICHARD P & JAMISON M
1802 BEAUFORT ST
LARAMIE, WY 82072

NISS MANAGEMENT AND CONSULTING, LLC
ATTN: NISS, CALVIN/LISA
3714 HAYFORD ST
LARAMIE, WY 82072

PETERSON, JERALD & MARGARET
1058 ALTA VISTA DR
LARAMIE, WY 82072

REN, JUN; ZHAO, BONNIE REV TR REN, JUN; ZHAO,
BONNIE, TTEES
2429 DOVER DR
LARAMIE, WY 82072

SANDOVAL, MARK D
908 MITCHELL ST
LARAMIE, WY 82072

SCHENKER, PENNY L
1418 SYMONS ST
LARAMIE, WY 82072

SHARPE, SPENCER S; AMY E
657 N 14TH ST
LARAMIE, WY 82072

SPRING CREEK APARTMENTS LLC
ATTN: HARTMAN, RONALD L
1658 FOX RIDGE RD
LARAMIE, WY 82072

T & A ENTERPRISES, A WYO CORP
ATTN: LARKIN, JOHN
755 N 4TH ST
LARAMIE, WY 82072

THELEN PROPERTIES LLC
ATTN: THELEN, THOMAS J
360 N 2ND ST
LARAMIE, WY 82072

UNIVERSITY HOUSING, LLC, A WY LLC
2705 DOVER DR
LARAMIE, WY 82072

ZITEK, CLINT J; K MICHELLE
2053 N 9TH ST
LARAMIE, WY 82072

TRUSTEES OF THE UNIV OF WY
ATTN: REAL EST OPS, DEPT 3314
1000 E UNIVERSITY
LARAMIE, WY 82071

ABBOTT, WESTON J
319 FETTERMAN ST
LARAMIE, WY 82070

ALBANY COUNTY SCHOOL DIST #1
ATTN: SPRING CREEK ELEMENTARY
1948 GRAND AVE
LARAMIE, WY 82070

ANDREWS, LARRY J; CONNIE J
1416 PALMER DR
LARAMIE, WY 82070

BADER, EFFIE BELLFLOWER, CLINT
1332 SYMONS ST
LARAMIE, WY 82070

BAKER, JOSHUA JAMES FINKELSTEIN, ROSE MARY
1505 BARRATT ST
LARAMIE, WY 82070

BARTHEL, BRIAN E
903 BOSWELL DR
LARAMIE, WY 82070

BATEMAN, AARON J & APRIL ARNOLD
1405 BOSWELL DR
LARAMIE, WY 82070

BATZ, GILBERT J RVCBL TRUST & BATZ, MARY MARGARET RVCBL TRST
1521 PERSON ST
LARAMIE, WY 82070

BECK, JOSEPH F & SOPHIA L
1412 PERSON ST
LARAMIE, WY 82070

BECKER, TIMOTHY & BARBARA
602 RUSSELL ST
LARAMIE, WY 82070

BEHRENS, CARRIE
1926 THORNBURGH ST
LARAMIE, WY 82070

BEKKELA, JILL
1206 S 4TH ST
LARAMIE, WY 82070

BELLIVEAU, SEAN A M BULLERMAN, BONNIE L
1333 SYMONS ST
LARAMIE, WY 82070

BELZUNG, KRISTIN
1420 ORD ST
LARAMIE, WY 82070

BENNETT, CRYSTAL R M; DAVID T
1008 S 7TH ST
LARAMIE, WY 82070

BERNARD, JEFFREY ALAN
1006 S 4TH ST
LARAMIE, WY 82070

BISHOP, MICHAEL A
1003 S 10TH ST
LARAMIE, WY 82070

BLEVINS, KRISTIN E
1103 S 5TH ST
LARAMIE, WY 82070

BOARD OF COMMISSIONERS
525 GRAND AVE
LARAMIE, WY 82070

BOSCHEE, BECKY M & JUSTIN A
1506 ARNOLD ST
LARAMIE, WY 82070

BOSLER, HELEN ELIZABETH REV TRUST BOSLER, HELEN ELIZABETH TRUSTEE
412 S 9TH
LARAMIE, WY 82070

BOTELLO, BONNIE J
1928 S 13TH ST
LARAMIE, WY 82070

BOUSE, EDWARD J & AMY M
1219 S 4TH ST
LARAMIE, WY 82070

BOYLES, BRITTANY N
913 BOSWELL DR
LARAMIE, WY 82070

BRATTON, ROSEMARY
1517 PERSON ST
LARAMIE, WY 82070

BRAZELL, MICHAEL J
1506 ORD ST
LARAMIE, WY 82070

BRIDGMON, CHASE H
318 ORD ST
LARAMIE, WY 82070

BROST, SETH CHRISTIAN RANDALL-BROST, RYAN LEIGH
1416 FETTERMAN DR
LARAMIE, WY 82070

BROWN, SANDRA L & ALAN L
1516 ORD ST
LARAMIE, WY 82070

BRUBAKER, DELIAH K
900 ORD ST
LARAMIE, WY 82070

BRUMMOND, ARLYN M; LEONE F REV TRUST
BRUMMOND, ARLYN M; LEONE F TTEE
400 S 13TH
LARAMIE, WY 82070

BUDROW, WENDY E
809 RUSSELL ST
LARAMIE, WY 82070

BURMAN, KEITH R & ROSENBLAT, SEYMOUR & FLUTY, GALE F C/O BOMBAY LAND
501 BOSWELL
LARAMIE, WY 82070

BURROWS, ANDREA C
816 ORD ST
LARAMIE, WY 82070

CANDELARIA FAMILY TRUST VIALPANDO, RUTH P TRUSTEE
707 SPRING CREEK DR
LARAMIE, WY 82070

CARLISLE, CHARLIE & LANELLE
1814 STEELE
LARAMIE, WY 82070

CASPER, GINA M
713 SPRING CREEK DR
LARAMIE, WY 82070

CASTLE, PATTI LYNN
1303 FETTERMAN
LARAMIE, WY 82070

CHAPIN, ANDREW W & SUZANNE M
1409 PERSONS ST
LARAMIE, WY 82070

CHECA-GARCIA, IRENE
1014 S 4TH ST
LARAMIE, WY 82070

CHIU, LARRY M BAINER, SONYA Y
1413 SYMONS ST
LARAMIE, WY 82070

CHRISTIANSEN, THOMAS J; KAREN M
918 PALMER DR
LARAMIE, WY 82070

COCA, JOE GERALDO; MARY SOPHIE
1318 3RD ST
LARAMIE, WY 82070

COCA, JOSEPH N
1021 FETTERMAN DR
LARAMIE, WY 82070

CORNEHLSEN, RYAN T & SARAH J
1014 S 5TH ST
LARAMIE, WY 82070

CORNELIUS, JEROME C
1421 SYMONS ST
LARAMIE, WY 82070

CRAIT, JAMIE MCBRIDE, SHAWNA
909 FETTERMAN DR
LARAMIE, WY 82070

CRANNEY, DANIEL K; MARGARET M
1011 FETTERMAN DR
LARAMIE, WY 82070

CULVER, RON LEE; LADENE JUNE
1509 BARRATT ST
LARAMIE, WY 82070

CUPPS, CECIL Q & DORTHELLA J
1403 SANDERS DR
LARAMIE, WY 82070

DALE POLEDNA ENTERPRISES, INC
DBA: KNIGHT OIL CO
PO BOX 1188
LARAMIE, WY 82070

DALGARN, NYLA MARIE
1004 S 8TH ST
LARAMIE, WY 82070

DARCY FAMILY REVOCABLE TRUST DARCY, WILLIAM E; CONNIE K, TRUSTEES
514 E GRAND 174
LARAMIE, WY 82070

DAWSON, GREGORY SCOTT & DEBRA
1015 S 4TH
LARAMIE, WY 82070

DELANY, DIANE L & GILLESPIE,
HAMILTON R & OPAL A
614 FETTERMAN ST

LARAMIE, WY 82070

DELONG, HEATHER A & JAY B, JR
1426 PERSON ST
LARAMIE, WY 82070

DOOLEY, JAMES T; PIA I
1419 FETTERMAN DR
LARAMIE, WY 82070

DUNBAR, DAVID C; PHYLLIS H
1502 ARNOLD
LARAMIE, WY 82070

DURKEE, JAMES R; LEORA C FAM TR DURKEE,
JAMES R; LEORA C TTEES
718 S 23RD ST
LARAMIE, WY 82070

EARNSHAW, BEN
ATTN: BENJAMIN & AMANDA EARNSHAW
1201 S 3RD ST
LARAMIE, WY 82070

EIKE, SANDRA FARWELL REV TRUST EIKE,
SANDRA FARWELL TRUSTEE
7214 BLACK ELK TRAIL
LARAMIE, WY 82070

ENNIST, SEAN R; DEBRA A
913 FETTERMAN DR
LARAMIE, WY 82070

ERICKSON, LYNN M
910 ORD ST
LARAMIE, WY 82070

EWERT, NATHAN R
1907 AUTUMN CIR
LARAMIE, WY 82070

FALLGREN, TRAVIS B PERROTTI, MIKELL KELLI
1414 ORD ST
LARAMIE, WY 82070

FARLEY, LOU; BARBARA S
1820 HILLSIDE DR
LARAMIE, WY 82070

FAXON, SHAWN
1101 S 4TH ST
LARAMIE, WY 82070

FONDREN, VICTOR E & CAROL J
535 SPRING CREEK DR
LARAMIE, WY 82070

FORTMAN, BRIAN J & STEPHANIE A
1419 SANDERS DR
LARAMIE, WY 82070

FOURNIER, JENNICA M & CHARLES D
908 SANDERS DR
LARAMIE, WY 82070

FOUST, SAMUEL E
708 RUSSELL ST
LARAMIE, WY 82070

FRANK, PHILIP; DOROTHEA
611 FETTERMAN ST
LARAMIE, WY 82070

FRANK, WENDY D
1106 S 7TH ST
LARAMIE, WY 82070

FREESTYLE PROPERTIES, LLC, A WY LLC
1203 S 5TH ST
LARAMIE, WY 82070

GABRIEL, THOMAS E; KAREN L
21 HIDDEN SPRINGS RD
LARAMIE, WY 82070

GALLUS, DONALD J
1513 ARNOLD ST
LARAMIE, WY 82070

GAULKE, LELAND J
1109 FETTERMAN DR
LARAMIE, WY 82070

GLENN, NICHOLAS NEIL
1306 ORD ST
LARAMIE, WY 82070

GOLDIE BIRD HOLDINGS, LLC
1200 S 4TH ST
LARAMIE, WY 82070

GOLDMAN REVOCABLE TRUST GOLDMAN,
STEPHEN J & LINDA M, TRUSTEES
1228 FETTERMAN DR
LARAMIE, WY 82070

GOMEZ, FRANCISCO V & GLORIA L
1109 S 4TH
LARAMIE, WY 82070

GONZALES, LEVI E & DELORES A
1020 S 11TH ST
LARAMIE, WY 82070

GOOD SHEPERD EVANGELICAL
LUTHERAN CHURCH
1301 S 5TH ST
LARAMIE, WY 82070

GRAF, NICHOLAS E & CRYSTAL S
1913 RIVER CREEK CT
LARAMIE, WY 82070

GRAFF, JASON T; GRAFF, LINDA A; GRAFF, R
1020 S 3RD ST
LARAMIE, WY 82070

GRAHAM, GARY L
1216 S 4TH ST
LARAMIE, WY 82070

GREEN, JASON R & RACHEL N
1434 SYMONS ST
LARAMIE, WY 82070

HAENISCH, MICHAEL HAENISCH, AMBER;
HAENISCH, JERRY P
1509 BILL NYE AVE
LARAMIE, WY 82070

HAINES, COURTNEY A
1918 RIVER CREEK CT
LARAMIE, WY 82070

HANKS, RUTH E
1406 ORD ST
LARAMIE, WY 82070

HARDESTY, SHERMAN F & CONNIE J
115 RUSSELL
LARAMIE, WY 82070

HARDING, JACK F & CARMEN K
1908 AUTUMN CIR
LARAMIE, WY 82070

HARRISON, ALEXANDER M & JENNIFER K
1510 BILL NYE AVE
LARAMIE, WY 82070

HARTMAN, RODNEY R & PHYLLIS E
1222 FETTERMAN
LARAMIE, WY 82070

HAYNES, COLT D
1214 S 5TH
LARAMIE, WY 82070

HENNEMANN, JEANNE M
1016 S 4TH ST
LARAMIE, WY 82070

HENNINGSEN, JOHN CHARLES HALL,
LAURA EMBERE HENNINGSEN
1013 S 10TH
LARAMIE, WY 82070

HENSON, OLEN
1213 S 4TH ST
LARAMIE, WY 82070

HETLER, BRADLEY J & SHERYL L
1020 S 9TH ST
LARAMIE, WY 82070

HEUPEL, NEAL H & JENNIFER L
1406 PERSON ST
LARAMIE, WY 82070

HICKS, MARK C STEELE-HICKS, LORA M
1415 PERSON ST
LARAMIE, WY 82070

HIXSON, DORIS D
1003 FETTERMAN DR
LARAMIE, WY 82070

HOFFERBER, DONALD L
LIV TRUST HOFFERBER, BILLIE R LIV TRUST
HOFFERBER,
916 SANDERS
LARAMIE, WY 82070

HOGELIN FAMILY REVOCABLE TRUST
ATTN: HOGELIN, CHARLES A;SHERRI M TTEES
6617 BLACK ELK TRAIL
LARAMIE, WY 82070

HOGELIN, DENNY L
1310 FETTERMAN DR
LARAMIE, WY 82070

HOLEN, AMBER C
1508 PERSON
LARAMIE, WY 82070

HUGHES, MICHAEL JAY
519 FETTERMAN ST
LARAMIE, WY 82070

HUHNKE, BENJAMIN T & DARYL L
1606 SHETLAND DR
LARAMIE, WY 82070

HULIN, BRYAN
2444 OVERLAND DR
LARAMIE, WY 82070

HUZURBAZAR, SNEHALATA VASANT
1001 S 4TH ST
LARAMIE, WY 82070

ILLYA, JOSEPH EDWARD
1213 FETTERMAN DR
LARAMIE, WY 82070

JACK, JORDAN M
1417 SPRING CREEK
LARAMIE, WY 82070

JAMES, TREVOR & KATHRYN
1929 13TH ST
LARAMIE, WY 82070

JAVAID, FARRUKH FAREED, SAMEERA
923 PERSON ST
LARAMIE, WY 82070

JENKINS, ROBERT G & NATELLIE A
1009 S 8TH ST
LARAMIE, WY 82070

JOHNSON, GUY E; AMANDA S
1418 ARNOLD ST

LARAMIE, WY 82070

JOHNSON, JAMES R IANNUCCI, MARY ANN
1011 S 4TH ST
LARAMIE, WY 82070

JOHNSON, MICHAEL JAMES FISHER, REBECCA JEANNE
1502 BILL NYE
LARAMIE, WY 82070

JOHNSON, SUZANNE P
1118 FETTERMAN DR

LARAMIE, WY 82070

JONES, JENNIFER M
1823 S 13TH ST
LARAMIE, WY 82070

JORGENSON, NATHAN D
1510 SYMONS ST
LARAMIE, WY 82070

JUAREZ, JEROD; AMANDA RAE
2315 SKYVIEW LN
LARAMIE, WY 82070

KEINATH, DOUGLAS A & RICHELLE J
1320 ORD ST
LARAMIE, WY 82070

KELLER, LYLE D & KRISTY D
1113 FETTERMAN DR
LARAMIE, WY 82070

KENIK, DOUGLAS
1010 S 10TH ST
LARAMIE, WY 82070

KENT, RICHARD P LIVING TRUST KENT, RICHARD P TRUSTEE
915 S 10TH ST
LARAMIE, WY 82070

KIRKALDIE, JOHN R & NORMA J
1321 SPRING CREEK
LARAMIE, WY 82070

KJORSTAD, TYLER M
612 RUSSELL ST
LARAMIE, WY 82070

KLEMENTS, CONNIE J
1505 BILL NYE AVE
LARAMIE, WY 82070

KLUCKMAN, PATRICK & STACY J
918 BOSWELL DR
LARAMIE, WY 82070

KUHN, JOHNNY W & DEBRA M
603 FETTERMAN ST
LARAMIE, WY 82070

LABRUM, MICHAEL L & JACQUELINE R
1201 S 4TH ST
LARAMIE, WY 82070

LAFLEICHE, JIM L
1011 S 7TH ST
LARAMIE, WY 82070

LAMPERT, TREVOR
508 FETTERMAN ST
LARAMIE, WY 82070

LANNING, SHAWN G
1238 SYMONS ST
LARAMIE, WY 82070

LARAMIE INN, LLC, A WY LLC
ATTN: LARAMIE VALLEY INN/HEMMERT
1104 S 3RD ST
LARAMIE, WY 82070

LARSON, MARILYN VIRGINIA
1020 ORD ST
LARAMIE, WY 82070

LAUE, PHILLIP C
1318 SYMONS ST
LARAMIE, WY 82070

LAVANCHY, JENNIFER D
1922 S 11TH ST
LARAMIE, WY 82070

LEWIS, KYLE
1014 3RD ST
LARAMIE, WY 82070

LINDLEY, LINDA S
1427 SYMONS ST
LARAMIE, WY 82070

LIPE, CARL LYONS-LIPE, JULIANN
1013 S 13TH ST
LARAMIE, WY 82070

LUNDBERG, MATTHEW L; NEIKA R
GOULD, JARED A; JOELENE
617 FETTERMAN
LARAMIE, WY 82070

LUNDBERG, MATTHEW L; NEIKA R
617 FETTERMAN APT A
LARAMIE, WY 82070

M & W INVESTMENTS, LLC, A WY LLC ATTN: WALSH, JERRY T
4630 VISTA DR
LARAMIE, WY 82070

MACK, SRIPAIWAN TRINIKOM
1408 PALMER DR
LARAMIE, WY 82070

MANALO, MARILEE J
315 FETTERMAN ST
LARAMIE, WY 82070

MANNING, JULIE D WHITBECK, JANETTE
1920 AUTUMN CIR
LARAMIE, WY 82070

MARRON, G RICHARD
1501 BOSWELL CT
LARAMIE, WY 82070

MARRON, RICHARD G
1501 BOSWELL CT
LARAMIE, WY 82070

MARTIN, BRYAN A; KATRINA S
621 RUSSELL ST
LARAMIE, WY 82070

MARTIN, JESSE & WHITNEY J
1925 S 13TH ST
LARAMIE, WY 82070

MATHEWS, SARAH B
1114 FETTERMAN DR
LARAMIE, WY 82070

MAXWELL, JAMES D
1506 BILL NYE AVE
LARAMIE, WY 82070

MCCARTNEY, JANET E
1315 SPRING CREEK DR
LARAMIE, WY 82070

MCGINNIS, GEORGE M; JULIANNE
1407 FETTERMAN DR
LARAMIE, WY 82070

MCGRATH, JAMES E
1208 S 3RD
LARAMIE, WY 82070

MCGUIRE, WANDA L
4531 MOCKINGBIRD LN
LARAMIE, WY 82070

MCHENRY, BAILEY J
1004 S 7TH ST
LARAMIE, WY 82070

MCKINNEY, JEFFREY S & STEPHANIE M
1406 ARNOLD ST
LARAMIE, WY 82070

MCMICHEAL, KELLY G
1113 1/2 S 7TH ST
LARAMIE, WY 82070

MCMULLEN, WESLEY W & SHANNA M
1324 ORD ST
LARAMIE, WY 82070

MCMURDO, AMY S
1117 S 11TH ST
LARAMIE, WY 82070

MEARS, ALISON B LIV TRUST MEARS, ALISON B TRUSTEE
2068 POLK ST
LARAMIE, WY 82070

MEGGINSON, WILLIAM T
711 RUSSELL ST
LARAMIE, WY 82070

MELLO, ANNETTE R & THOMAS A
1012 S 7TH ST
LARAMIE, WY 82070

MERCIER, JANET H
1420 FETTERMAN DR
LARAMIE, WY 82070

MESA, MARY T
316 FETTERMAN ST
LARAMIE, WY 82070

MEYERS, ROBERT & CALEY
800 ORD ST
LARAMIE, WY 82070

MICHEL, CHRISTINE REED, CHRISTOPHER
1919 RIVER CREEK CT
LARAMIE, WY 82070

MILLER, LAURA GAY
1020 FETTERMAN DR
LARAMIE, WY 82070

MILLER, LINDA L
1020 S 5TH
LARAMIE, WY 82070

MILLION, GREGORY A & TAMI L
1513 BILL NYE
LARAMIE, WY 82070

MONDRAGON, RUDOLPH S; JUDITH
917 FETTERMAN DR
LARAMIE, WY 82070

MOODY, CHRISTOPHER G
1014 S 9TH ST
LARAMIE, WY 82070

MORA, MICHAEL L, SR
1505 SYMONS ST
LARAMIE, WY 82070

MORFELD, VERNA H
1519 PERSON ST
LARAMIE, WY 82070

MURPHY, CLAIRE B MCCOY, DAVID R
1008 FETTERMAN DR
LARAMIE, WY 82070

MURPHY, MORRIS M & CAROL E
311 RUSSELL ST
LARAMIE, WY 82070

NABORS, CHRISTOPHER R & CARLY A
1423 ARNOLD ST
LARAMIE, WY 82070

NAMIE, KELLY RAE
615 RUSSELL ST
LARAMIE, WY 82070

NECKLASON, ADAM
1305 S 9TH ST
LARAMIE, WY 82070

NELSON, DAVID J LIV TRUST NELSON, ANN J LIV TRUST NELSON, DAVID &
1215 S 5TH
LARAMIE, WY 82070

NELSON, JOAN W HARPER, RYAN ASHLEY
904 FETTERMAN DR
LARAMIE, WY 82070

NEWLIN, LENA M DYCK, NATHANIEL
1003 S 15TH ST
LARAMIE, WY 82070

NIELSEN, STEPHEN G
1110 FETTERMAN DR
LARAMIE, WY 82070

NYSSON, ELIZABETH M
1015 RUSSELL ST
LARAMIE, WY 82070

OHRMUND, JIMMY W
1202 S 3RD ST
LARAMIE, WY 82070

OLIVER, RUSSELL M; CHRISTY M
1422 SUBLETTE ST
LARAMIE, WY 82070

OLSON, JUSTIN; ERIN
1514 BILL NYE AVE
LARAMIE, WY 82070

PARKER, CHARLES M
1223 FETTERMAN
LARAMIE, WY 82070

PARNELL, THOMAS A JR; JUNE O
1151 HIDALGO DR
LARAMIE, WY 82070

PARSONS, EMILY B SMITH, JEFFREY A
1203 FETTERMAN DR
LARAMIE, WY 82070

PEREDIA, CAROLINA
523 FETTERMAN ST
LARAMIE, WY 82070

PIEPER, JOEL
901 BOSWELL DR
LARAMIE, WY 82070

PINSON, RYAN C & SARA G
1914 AUTUMN CIR
LARAMIE, WY 82070

PLACO, INC C/O HARDESTY, SHERMAN F & CONNIE J
115 RUSSELL
LARAMIE, WY 82070

POLEDNA, DALE ENTERPRISES
ATTN: DPE INC
PO BOX 1188
LARAMIE, WY 82070

POLEDNA, DALE ENTERPRISES, INC
PO BOX 1188
LARAMIE, WY 82070

PONCIANO, KRISTEEN E ALLEN, SIDNEY
1007 S 6TH ST
LARAMIE, WY 82070

PORTER, DONALD A, JR & M VIRGINIA
1014 S 13TH ST
LARAMIE, WY 82070

POTTHOFF, BRETT STEVEN & BRENDA MARIE
906 BOSWELL DR
LARAMIE, WY 82070

POWELL, JANE D TRUST
1501 SYMONS ST
LARAMIE, WY 82070

PRACHEIL, JAMES A & TIFFANY D
531 SPRING CREEK DR
LARAMIE, WY 82070

PRINCE, ELY
1123 FETTERMAN DR
LARAMIE, WY 82070

QUICK, TAD W; CONNIE
506 RUSSELL ST
LARAMIE, WY 82070

RAIMOND, GILBERTA
1206 S 11TH ST
LARAMIE, WY 82070

RANSOM, CHRIS R & CHRISSY L
919 BOSWELL DR
LARAMIE, WY 82070

REED, JANET A; WESLEY W
1117 FETTERMAN
LARAMIE, WY 82070

REED, SHAWN J; TIA
606 RUSSELL ST
LARAMIE, WY 82070

REESE, ASHLIE
1221 SPRING CREEK
LARAMIE, WY 82070

REYNDERS, CINDY R
1004 S 5TH
LARAMIE, WY 82070

RHOADES, JONATHAN D
1327 SYMONS ST
LARAMIE, WY 82070

RICCA, ANTHONY B
1001 S 7TH ST
LARAMIE, WY 82070

RICHARDS, ALEC RICHARDS, LAWRENCE DAVID
1316 FETTERMAN DR
LARAMIE, WY 82070

RIEGEL, GARY LIVING TRUST RIEGEL, GARY &
GRACE, TRUSTEES
1871 WASHINGTON ST
LARAMIE, WY 82070

ROBERTSON, EMILY I
1410 FETTERMAN DR
LARAMIE, WY 82070

ROEPKE, MATTHEW
1411 SPRING CREEK
LARAMIE, WY 82070

ROGERS, CARL A; DEBRA L
623 SPRING CREEK DR
LARAMIE, WY 82070

ROSE, DEAN WILLIAM & SARAH JAYNE
1913 AUTUMN CIR
LARAMIE, WY 82070

ROSE, JULIE
916 FETTERMAN DR
LARAMIE, WY 82070

ROWLES, JAMES LEO & CAROL LEE
1018 S 3RD
LARAMIE, WY 82070

SALMONS, DESDAMONA LINDA MIDGETT,
AARON THOMAS
916 ORD ST
LARAMIE, WY 82070

SANCHEZ, EUGENE S
1118 S 11TH ST
LARAMIE, WY 82070

SANCHEZ, PATRICK C
1413 SANDERS DR
LARAMIE, WY 82070

SANCHEZ, TOMMY & SYLVIA A
1424 PALMER DR
LARAMIE, WY 82070

SANDERS, MARK A & CHRISTINA T
1407 SPRING CREEK
LARAMIE, WY 82070

SAUER, MARK G
1007 S 9TH ST
LARAMIE, WY 82070

SAULCY, SARA J LIVING TRUST SAULCY,
SARA J, TRUSTEE
1405 ARNOLD ST
LARAMIE, WY 82070

SCARPELLI, GUY WILLIAM
TRUST SCARPELLI, GUY TTEE
1407 PALMER DR
LARAMIE, WY 82070

SCHAEFER, MICHAEL R; DIANNA L
1501 ARNOLD
LARAMIE, WY 82070

SCHENKER, PENNY L
1418 SYMONS ST
LARAMIE, WY 82070

SCHEPELER, WILLIAM T, V, JAMIE A
1501 BARRATT
LARAMIE, WY 82070

SCHLUMP, JAMES ROGER & JEAN M
1117 S 5TH ST
LARAMIE, WY 82070

SCHLUMP, ROGER; JEAN M
1117 S 5TH ST
LARAMIE, WY 82070

SHANNON, RICK A
1011 S 3RD ST
LARAMIE, WY 82070

SHARPS, SEYMOUR L; ELLEN S
1016 FETTERMAN DR
LARAMIE, WY 82070

SHAW, MICHAEL J
1408 SYMONS ST
LARAMIE, WY 82070

SHEARIN, A TERRY LIVING TRUST SHEARIN, PATRICIA LIVING TRUST
513 FETTERMAN ST
LARAMIE, WY 82070

SHELTON, DIANA W LIV TRUST OBRIEN, CATHERINE E C LIV TRUST
269 MILLBROOK RD
LARAMIE, WY 82070

SHEPHERD, RUTHANN SHEPARD, MARK
1513 SPRING CREEK DR
LARAMIE, WY 82070

SHORTCUT, LLC, A WY LLC ATTN: ROBERTS, STEPHEN L
1302 BILL NYE AVE
LARAMIE, WY 82070

SIMS, BENJAMIN L & LESLIE A
1402 SYMONS ST
LARAMIE, WY 82070

SKEEN, JACOB & KASSANDRA T
603 RUSSELL ST
LARAMIE, WY 82070

SLONAKER, TIMOTHY R
312 ORD ST
LARAMIE, WY 82070

SMITH, ALICE G
963 HWY #230
LARAMIE, WY 82070

SMITH, AMANDA J
1410 ORD ST
LARAMIE, WY 82070

SMITH, CLARENCE E; ALICE G
963 HWY 230
LARAMIE, WY 82070

SMITH, EUGENE P III
LIV TRUST SMITH, EUGENE P III TRUSTEE
1101 S 8TH ST
LARAMIE, WY 82070

SMITH, JORDAN D & JESSICA
1926 RIVER CREEK CT
LARAMIE, WY 82070

SMITH, LUCAS B; KARLI R
1514 SYMONS ST
LARAMIE, WY 82070

SMITH, REBEKAH S
1018 S 8TH ST APT A
LARAMIE, WY 82070

SMITH, SCOTT M MALVOISIN, SONJA I
1421 BOSWELL DR
LARAMIE, WY 82070

SOLATORIO, ANDREA C & AGUSTIN
1429 ARNOLD ST
LARAMIE, WY 82070

SONZOGNI, BRIEN L & EMILY J
1407 SANDERS DR
LARAMIE, WY 82070

STEVENSON, DUDLEY E & CATHERINE L
610 FETTERMAN ST
LARAMIE, WY 82070

STEWART, JUSTIN D HETTGAR, MARGARET E
1016 S 7TH ST
LARAMIE, WY 82070

STILL, JASON W S; STILL, LLOYD E STILL, LINDA K
920 FETTERMAN DR
LARAMIE, WY 82070

STINSON, BETTY H, REVOCABLE TRUST STINSON, BETTY H TRUSTEE
1074 ALTA VISTA DR
LARAMIE, WY 82070

STINSON, BETTY H, REVOCABLE TRUST STINSON, BETTY H TRUSTEE
1074 ALTA VISTA DRIVE
LARAMIE, WY 82070

STROMSKI, MICHAEL E; SHARON A
1419 PALMER DR
LARAMIE, WY 82070

SULLIVAN, SUSAN K
1405 SYMONS ST
LARAMIE, WY 82070

SUMMIT PROPERTIES
205 FETTERMAN ST
LARAMIE, WY 82070

SWECKARD, JON JAMES
4315 WESTERN SKIES RD
LARAMIE, WY 82070

SWECKARD, LUCAS JAMES
10 TOPAZ LN
LARAMIE, WY 82070

TAYLOR, GREGORY & JOLENE
915 SANDERS
LARAMIE, WY 82070

THOMAS, DANIEL JOHNSON, RAE
1204 FETTERMAN DR
LARAMIE, WY 82070

THOMAS, JOLEAN
1123 S 7TH ST
LARAMIE, WY 82070

THOMASON, CHRISTOPHER L & CRYSTAL N
1011 S 5TH ST
LARAMIE, WY 82070

THOMPSON, AARON A & BRITTANY L
1014 S 10TH ST
LARAMIE, WY 82070

THOMPSON, DERRICK R; KAYLEE EDNA
1418 PERSON ST
LARAMIE, WY 82070

THOMPSON, EDNA L TROST, DUANE R
1210 FETTERMAN
LARAMIE, WY 82070

THOMPSON, JASON
921 FETTERMAN DR
LARAMIE, WY 82070

THOMSEN, CHARLES I & DEBRA L
1403 SPRING CREEK DR
LARAMIE, WY 82070

THROOP, LAUREN E
1517 SPRING CREEK DR
LARAMIE, WY 82070

THRUSH, GREG L; MARIAN D
510 ORD ST
LARAMIE, WY 82070

TRAVSKY, DANIEL SAMUEL
1501 BILL NYE AVE
LARAMIE, WY 82070

TRIPHYTO, LLC, A WY LLC
ATTN: VINCENT, KIM
214 2ND ST
LARAMIE, WY 82070

TROGDEN, GENEVIEVE
1006 8TH ST
LARAMIE, WY 82070

VIALPANDO, JAMES R; LARAMIE S
1403 FETTERMAN DR
LARAMIE, WY 82070

VICCHY, ANNA M REVOCABLE TRUST VICCHY, ANNA M TTEE
315 S 23RD 1
LARAMIE, WY 82070

VICKREY, JASON C
910 PALMER DR
LARAMIE, WY 82070

VIGIL, MARCIA A
1320 FETTERMAN DR
LARAMIE, WY 82070

VILLAS, INC A WYO CORP
ATTN: VILLASENOR, PONCIANO
513 BOSWELL
LARAMIE, WY 82070

VILLASENOR, PONCIANO
1425 SUBLETTE
LARAMIE, WY 82070

VITT, DENISE JEAN CROSBY
715 SPRING CREEK DRIVE
LARAMIE, WY 82070

WAGGENER, ROBERT W; LESLIE C
1003 S 5TH
LARAMIE, WY 82070

WAHLGREN, DANIEL D; SANDRA A
4527 ORIOLE LN
LARAMIE, WY 82070

WALCK, CYNTHIA A
1420 SANDERS DR
LARAMIE, WY 82070

WALSH, JERRY TRAVIS & AIMEE N
4630 VISTA DR
LARAMIE, WY 82070

WALTERS, RICK; SHARON KAY
522 RUSSELL ST
LARAMIE, WY 82070

WARM LLC
413 FETTERMAN ST
LARAMIE, WY 82070

WATKINS, KEVIN ALVIN & ANDREA DAWN
1509 SYMONS ST
LARAMIE, WY 82070

WEITZEL, ERIC C & CARREE L
600 ORD ST
LARAMIE, WY 82070

WEITZEL, TRENTON J
1010 S 3RD ST
LARAMIE, WY 82070

WELCH, NOEL & ERIN S
414 RUSSELL ST
LARAMIE, WY 82070

WESTBROOK, JONI LIV TRUST WESTERBROOK, JONI & TAD , TRUSTEES
1007 S 3RD ST
LARAMIE, WY 82070

WESTBROOK, TAD LIV TRUST WESTBROOK, JONI LIV TRUST
1007 S 3RD ST
LARAMIE, WY 82070

WHILE, TODD J & CHARLOTTE H
1009 S 10TH ST
LARAMIE, WY 82070

WHITBECK, ROBERT E & PAMELA M
1433 SYMONS ST
LARAMIE, WY 82070

WHITE, JACOB A & LEAH S
512 FETTERMAN ST
LARAMIE, WY 82070

WILKISON, AMANDA LYNN; BLACKMON, CHRISTOPHER LEE
1326 SYMONS ST
LARAMIE, WY 82070

WILSON, ROBERT A
1521 SPRING CREEK DR
LARAMIE, WY 82070

WINDER, RICHARD G & PHYLLIS M
909 PALMER DR
LARAMIE, WY 82070

WIP, LLC
216 GRAND AVE
LARAMIE, WY 82070

WISEMAN, SHAWN M; BRYONY S
1225 5TH ST
LARAMIE, WY 82070

WONG, SIN KOK
2518 S 18TH ST
LARAMIE, WY 82070

WOODHOUSE, ANDREW J & VIRGINIA B
1315 FETTERMAN DR
LARAMIE, WY 82070

WORKMAN, JANICE
406 ORD ST
LARAMIE, WY 82070

WORTHINGTON, MICHAEL WARREN
522 FETTERMAN ST
LARAMIE, WY 82070

WRHEL, BRIAN M
1505 ARNOLD ST
LARAMIE, WY 82070

WYCKOFF, TEALE B
1002 S 5TH
LARAMIE, WY 82070

YU, LI YEUNG, MAN CHUNG
1522 BOSWELL CT
LARAMIE, WY 82070

ZAMORA, PAMELA K
1414 SANDERS DR
LARAMIE, WY 82070

ZHENG, YUAN XU, HAIYING
1403 PERSON ST
LARAMIE, WY 82070

ZIBBON, CORINNE ANN
1017 FETTERMAN DR
LARAMIE, WY 82070

BREYFOGLE, WILLIAM W
PO BOX 22
CENTENNIAL, WY 82055

JAMISON, CRAIG & APRIL
PO BOX 304
CENTENNIAL, WY 82055

B & L GROTT, LLC, A WY LLC
7217 HAWTHORNE
CHEYENNE, WY 82009

GROTT FAMILY TRUST GROTT, BYRON L & LAURA J, TRUSTEES
7217 HAWTHORNE DR
CHEYENNE, WY 82009

HAMM, THOMAS F II
8711 BOZEMAN
CHEYENNE, WY 82009

HATTEL, LARRY J & DIANE E
3700 E FOUR MILE RD
CHEYENNE, WY 82009

HOUSING AUTHORITY OF THE CITY OF CHEYENNE
3304 SHERIDAN AVE
CHEYENNE, WY 82009

JOHNSON, THOMAS W & CAROLYN S
7702 HAWTHORNE DR
CHEYENNE, WY 82009

MURRAY, GANELL M
REV TRUST MURRAY, GANELL M TRUSTEE
6345 PRAIRIE HILLS DR
CHEYENNE, WY 82009

MWA, LLC, A WY LLC
916 HEMLOCK
CHEYENNE, WY 82009

POWELL, SAMUEL D & LAURA J
7216 HAWTHORNE
CHEYENNE, WY 82009

ROBINSON, KENNETH D REVOCABLE TRUST
ROBINSON, KENNETH D, TRUSTEE
6816 BRAVE CT
CHEYENNE, WY 82009

RV REAL ESTATE PROPERTIES, LLC, A WY LLC
928 BRITTANY
CHEYENNE, WY 82009

TAYLOR, DOUGLAS LYLE, SHERRIE
1808 ROAD 217
CHEYENNE, WY 82009

SPRING CREEK INVESTMENTS LLC
PO BOX 2386
CHEYENNE, WY 82003

SPRING CREEK STORAGE, LLC, A WY LLC
ATTN: LOPEZ, RONALD J
6700 PEACE POINTE
CHEYENNE, WY 82003

COLLINS, JIM MARONEY, COLLEEN
902 CLEVELAND AVE
CHEYENNE, WY 82001

FANELLI, RICHARD; GAIL
3100 SILVERGATE CT
CHEYENNE, WY 82001

FINCH PROPERTIES, LLC, A WY LLC
3418 E PERSHING
CHEYENNE, WY 82001

WOODS, ROBERT E; REBECCA L
5160 SYCAMORE RD
CHEYENNE, WY 82001

GIEHM, NOEL & JANET LIVING TRUST GIEHM,
NOEL R & JANET K, TRUSTEE
7045 ROYAL COUNTRY DOWN
WINDSOR, CO 80550

STOWERS, JON; CONNIE
PO BOX 435
MASONVILLE, CO 80541

JONES, DANIEL S & ANDREA K JONES, KELSEY D
2900 MOFFAT AVE
LOVELAND, CO 80538

GOPPERT, STEPHEN B & SUSAN J
5275 LIGHTHOUSE POINT CT
LOVELAND, CO 80537

JOHNSON, GRANT D; TANA J
4328 WHIPPENY DR
FORT COLLINS, CO 80526

ANDERSON, VICTORIA J
2613 STANFORD RD #29
FORT COLLINS, CO 80525

OLSON, LOIS M
1325 LEAWOOD ST
FORT COLLINS, CO 80525

HOUCK, DANIEL E; JANE H
614 MATHEWS CR
ERIE, CO 80516

EDWARDS, CAROL J & JOSEPH E, VII
PO BOX 905
WALDEN, CO 80480

TRESCH, PHILLIP CHARTRAND-TRESCH, NICOLE
104 C MORNINGSTAR CIRCLE
FRISCO, CO 80443

LARAMIE LODGING LLC, A CO LLC
ATTN: RAHMANI, BRUCE
10 E 120TH AVE
NORTHGLENN, CO 80233

JACOBSON, ERIC D
10311 KENNETH DR
PARKER, CO 80134

FALL CREEK PROPERTIES, LLC, A CO LLC
ATTN: COOLEY, MIKE
4579 BROADVIEW CT
CASTLE ROCK, CO 80109

SAGE, KESA LORAINE
8515 CARR CT
ARVADA, CO 80005

JAS MANAGEMENT, LLC
ATTN: STRICKLAND, JERE A
13463 W 62ND PL
ARVADA, CO 80004

SOBEL, FAMILY REV TRUST SOBEL,
JORDAN P & MELINDA J TRUSTEES
5959 S BIRMINGHAM
TULSA, OK 74105

ROLAND, ALAN J & ASHLEY C
455 CR 65
HEMINGFORD, NE 69348

CALLAHAN, STEPHEN A; CYNTHIA B
241 TALL PINE RD
CRAWFORD, NE 69339

CULLEN, PAMELA JOELLA; PATRICK
4609 E NYBLOM RD
NORTH PLATTE, NE 69101

REISS, CHRISTOPHER J
568 CANNON DR
GENEVA, IL 60134

LN REAL ESTATE LLC, A WA LLC
ATTN: WILDT, JEFF PROP MGR
PO BOX 5550
WINONA, MN 55987

YAO, CHAOQUN ZENG, LI
10120 HICKORY LN
URBANDALE, IA 50322

GRUVER, JACOB P
317 N VICTORIA PARK RD
FORT LAUDERDALE, FL 33301

BATTLE, VINCENT M REV TRUST BATTLE,
VINCENT M, TRUSTEE
2227 CORAL VALLEY ROAD
CHARLOTTE, NC 28214

KEEFAUVER, LINDA
22081 PARKS MILL RD
ABINGDON, VA 24211

KENNEDY, CHRIS J
1361 F ST NE
WASHINGTON, DC 20002

PUEBLITZ, GEORGE
2416 MENOHER BLVD
JOHNSTOWN, PA 15905

SEDAR, WARREN THOMAS & CHARLENE D
PO BOX 997
CHRISTIANSTED, VI 821

Bill Nye Avenue Corridor Study

PUBLIC MEETING NO. 1 October 21, 2015 from 5:00 p.m. to 7:00 p.m.,

Presentation at 5:15 p.m. Albany County Library 310 S 8th St, RM# Laramie, WY 82070

LIST OF ATTENDEES

NAME	ADDRESS	E-MAIL	PHONE
Jeff Purdy	2617 E Lincolnway Cheyenne	Jeffrey.Purdy@dot.gov	
Kaye Willis	174 Cortrell Rd.	Knbob@me.com	
Gary Espeland	102 So 5th	Espeland Realty@aol.com	
Pouciano Villaseñor	513 Boswell Dr.	—	307) 721-0167
Margaret Brown	1055 Bonita	margaretbrown@brennan.net	
Nick + Crystal Graf	1913 River Creek ct.	n.cograf@outlook.com	(307) 755-2501
Sam Shuler	1305 Bill Nye		
NATHAN EWERT	1907 AUTUMN CIRCLE	newert@trihydro.com	8480-309-1400

Bill Nye Avenue Corridor Study

PUBLIC MEETING NO. 1 October 21, 2015 from 5:00 p.m. to 7:00 p.m.,

Presentation at 5:15 p.m. Albany County Library 310 S 8th St, RM# Laramie, WY 82070

LIST OF ATTENDEES

NAME	ADDRESS	E-MAIL	PHONE
[illegible]	1117 S. 5th St	jeanielaramie@aol.com	
Jim Stephen (Spring Creek Inst)	234 Palm Springs		
Jason Green	1434 Symons St	jr0898@yahoo.com	
Bob Southard	501 Garfield		
Joel Funk	318 S 15th	joelf@laramieboomerang.com	7553320
Lindy Miller	1020 So. 5th St	lindy.miller@live.com	745-4719
Debi O'Donnell	POB 1692	Vollybmom@aol.com	721-2043
Klaus Hansen	710 Gerald Pl	klaushansen@yahoo.com	745-4482
Diana Schwede	1011 S. 15th St	diana.schwede@gmail.com	440-3280
Steve Roberts	1302 Bill Nye		742-0345

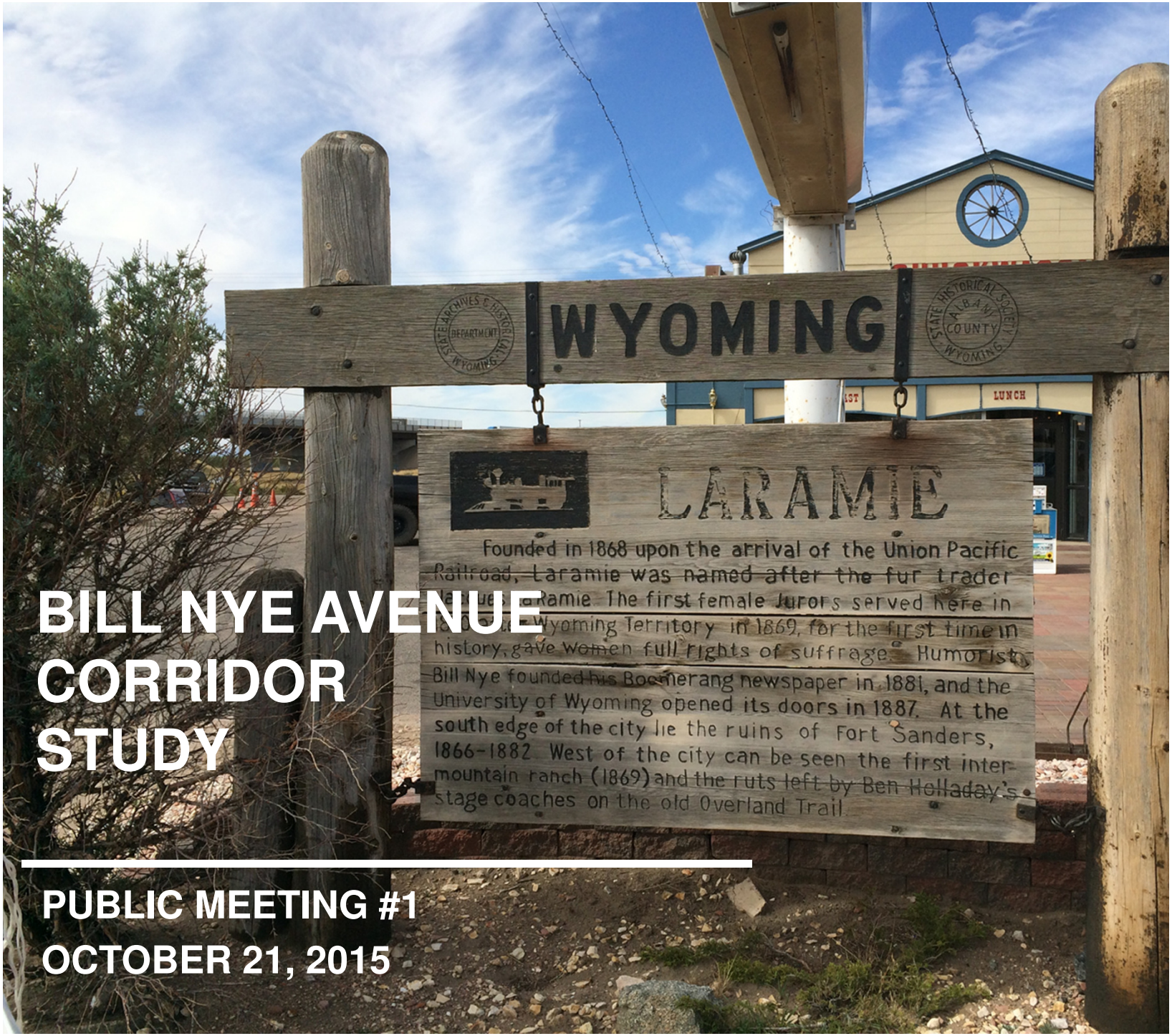
Bill Nye Avenue Corridor Study

PUBLIC MEETING NO. 1 October 21, 2015 from 5:00 p.m. to 7:00 p.m.,

Presentation at 5:15 p.m. Albany County Library 310 S 8th St, RM# Laramie, WY 82070

LIST OF ATTENDEES

NAME	ADDRESS	E-MAIL	PHONE
Carbon County Bird	1718 Pearson PO Box 1363	Dun Dot DIRD	755-7078
Nicole Swartz	1011 S. 5th	NSwartz@gmail.com	460-3280
Wade Roberts	P.O. Box 657	W Roberts 67 @ Gmail.com	307-760-1743
Doug Keinath	1320 Ord St	dgkrth@yahoo.com	307-760-4201
John Kirkbride	1304 Spring Creek Dr		307-761-0053



BILL NYE AVENUE CORRIDOR STUDY

PUBLIC MEETING #1

OCTOBER 21, 2015

LARAMIE

WEST Inc.

STS

ENGINEERING
PLANNING
SURVEYING
PC

Agenda

- Introductions
- Study Area
- Goals and Objectives
- Project Schedule
- Identified Constraints
- Proposed Roadway Typical Section
- Proposed Conceptual Alternatives
- Adjourn to Workshop Areas

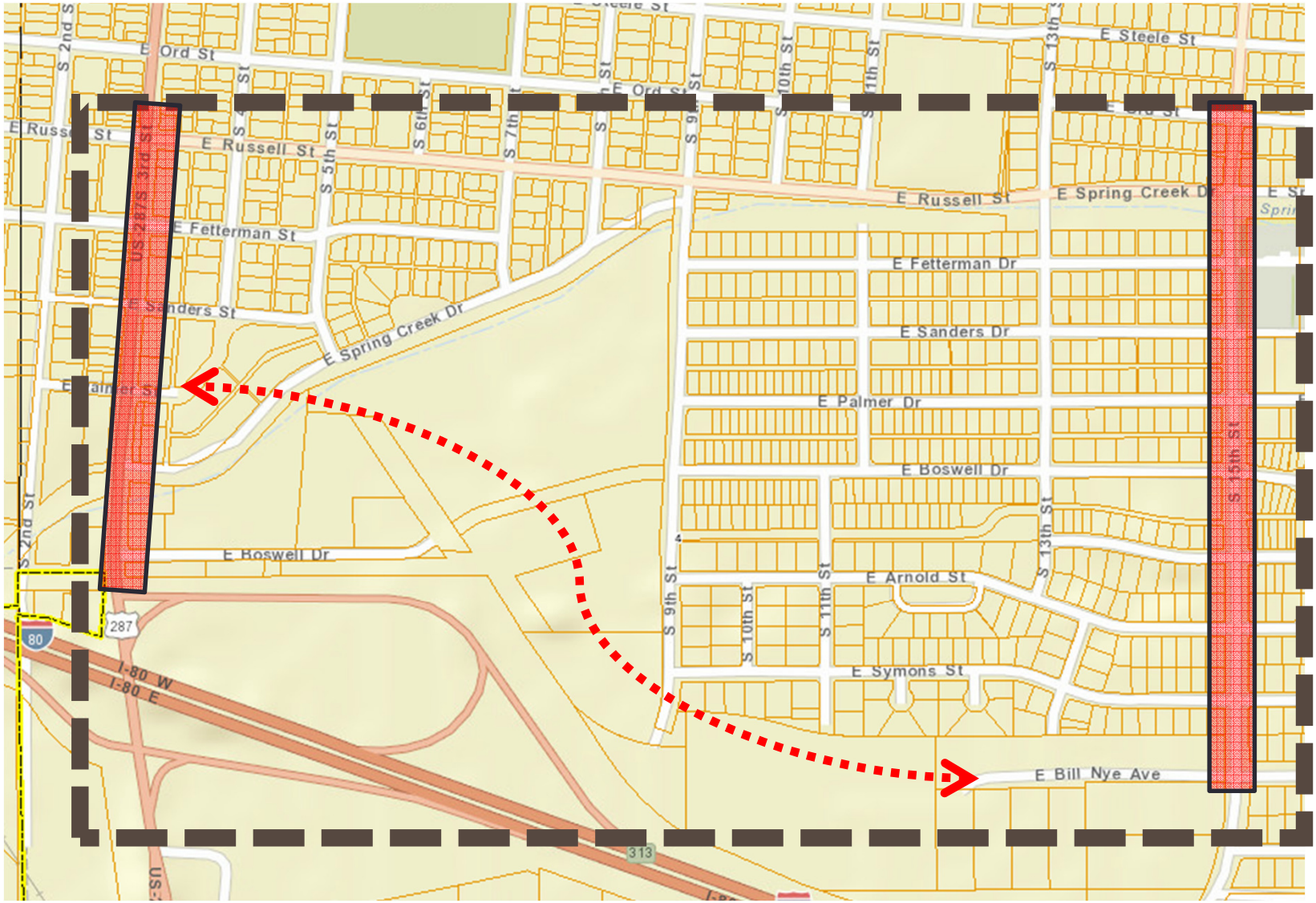
Introductions

Tom Cobb, P.E.
Project Manager

Brad Emmons, A.I.C.P.
Principal-in-charge
Planning

Jake Wilson, E.I.T.
Engineer

Study Area


E Ord St
E Steele St
E Russell St
E Spring Creek Dr
E Fetterman St
E Fetterman Dr
E Sanders St
E Sanders Dr
E Palmer Dr
E Boswell Dr
E Arnold St
E Symons St
E Bill Nye Ave
S 2nd St
S 3rd St
S 5th St
S 6th St
S 7th St
S 9th St
S 10th St
S 11th St
S 13th St
S 15th St
US 287
I-80 W
I-80 E
80
287
313

Purpose, Objective, and Goals

- **Purpose**
  - Create a comprehensive and practical planning document that guides and promotes future development of the corridor and surrounding area.
- **Objective**
  - Develop a realistic preferred alignment for Bill Nye Avenue between 3rd Street and 15th Street.
- **Goals**
  - Promotes safety
  - Minimizes long term maintenance
  - Sensitive to current function and property owners
  - Serves all transportation users (bicycles, pedestrians, freight, passenger cars, buses, etc.)
  - Facilitates inner City connectivity
  - Encourages economic development

Project Schedule

Activity	Tentative Schedule
Notice to proceed and Kick-off Meeting	Begin Project, June 9, 2015
Adjacent Stakeholder Meeting(s)	July 2, 2015
Meeting w/ FHWA	July 9, 2015
Develop Preliminary Alternatives	July – August, 2015
Steering Committee Meetings	August 24; September 22; and October 19, 2015; **November, 2015; January, 2016.**
First Public Meeting	**October 21, 2015**
Refine Alternatives	November, 2015
Complete Draft Plan	**December, 2015**
Submit Draft Plan City of Laramie	**January, 2016**
Revise Draft Plan	**February, 2016**
Presentation to Governing Body	**March, 2016**

Identified Constraints

- **Physical Constraints**
  - **Existing Utilities**
  - **Structures**
  - **Spring Creek**
- **Adjacent Developments**
- **Corridor Safety**

Existing Utilities - Palmer Street West of 3rd (looking west)

Structures – Bridge at 9th and Russell (looking south)

Structures – Bridge at 3rd and Spring Creek (looking south)

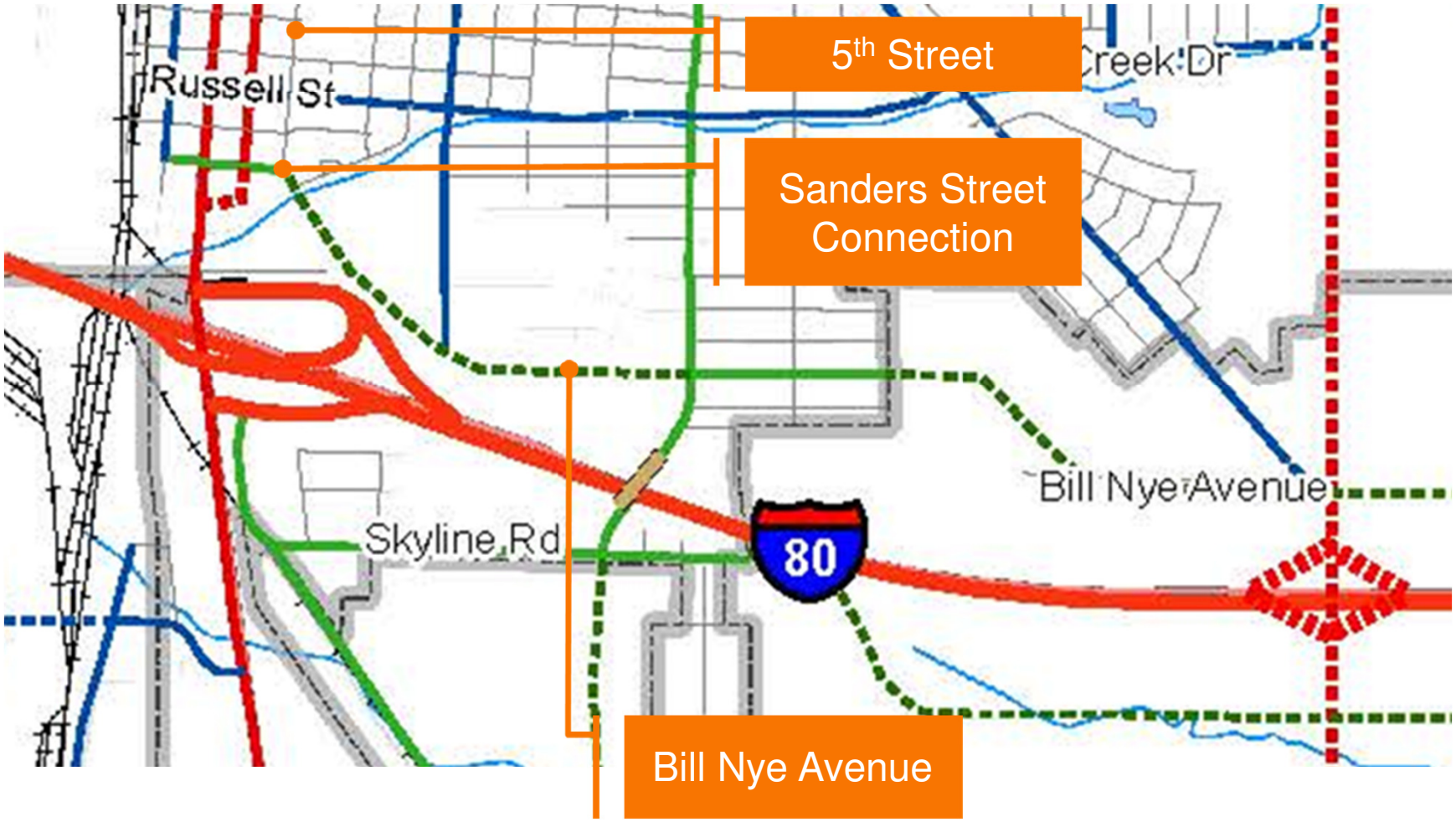
Spring Creek - East of 3rd (looking east)

Adjacent Development – 5th Street at Sanders (looking north)

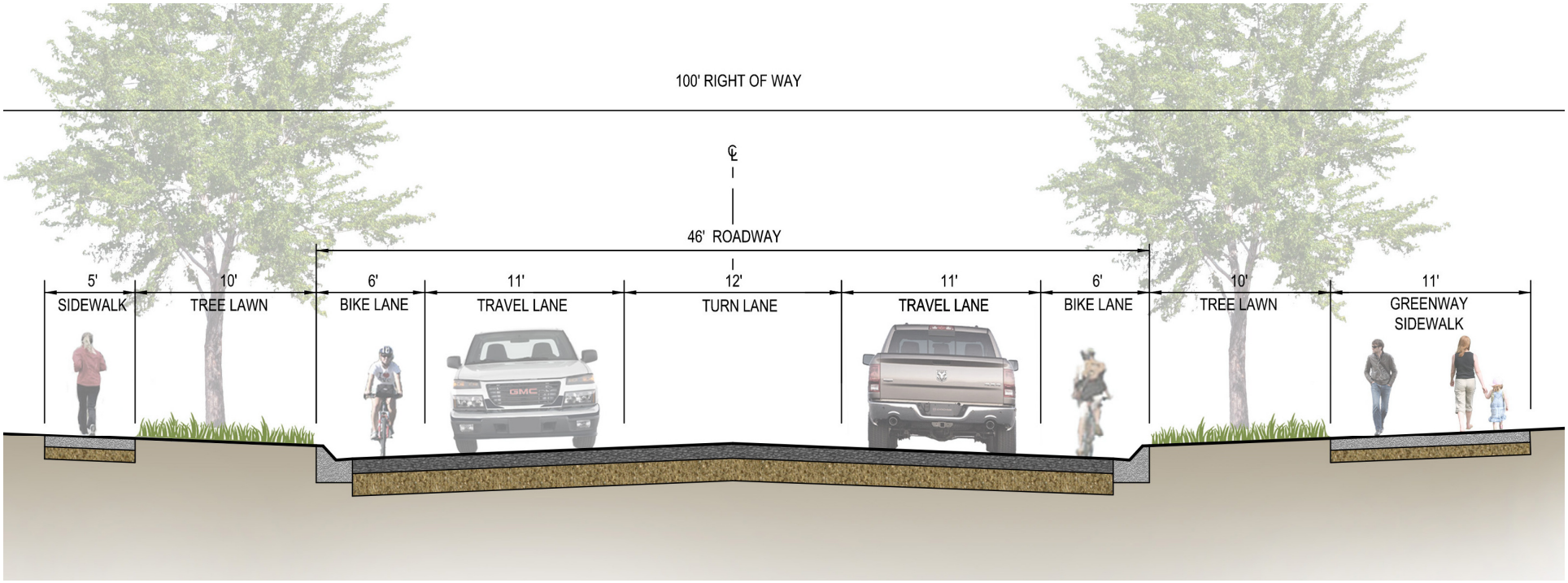
Corridor Safety - 3rd and Boswell (Proximity of Access to Intersection)

Corridor Safety - 3rd and Boswell, I-80 On/Off Ramps – Confusion created by spacing of ramps and Boswell Drive

Laramie Comprehensive Plan



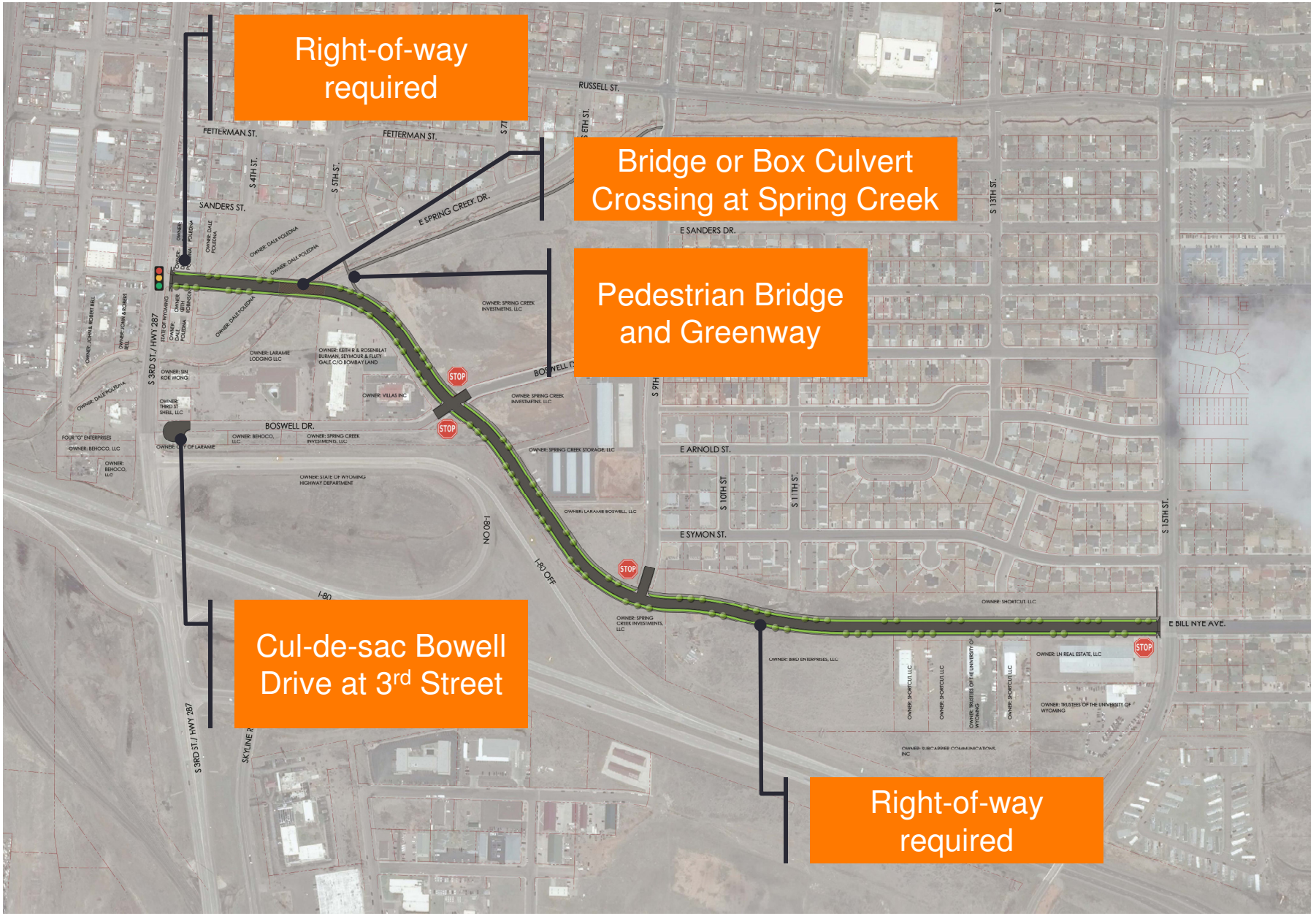
Conceptual Typical Section



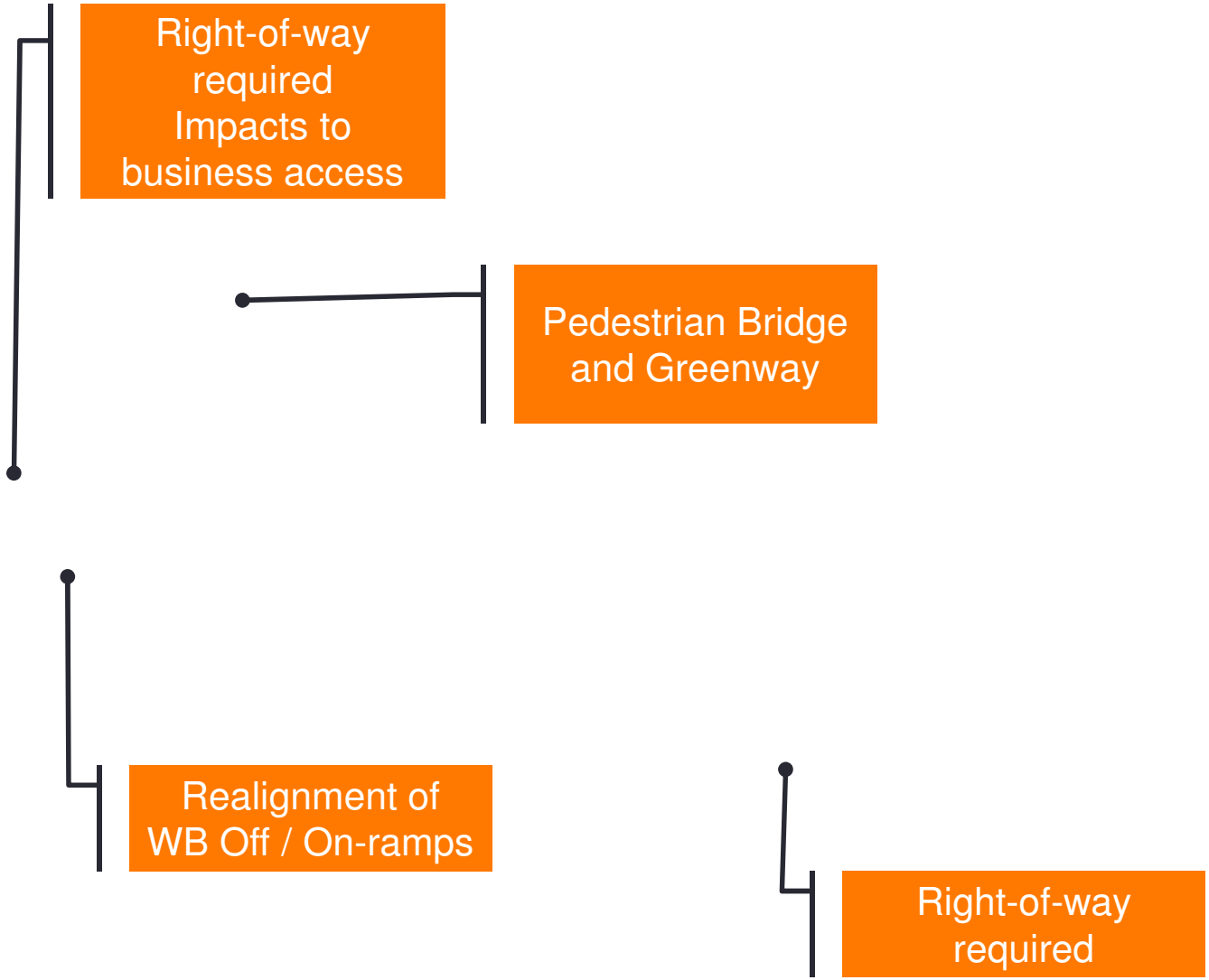
Do Nothing – Utilize 15th Street

Revised Bill Nye Realignment

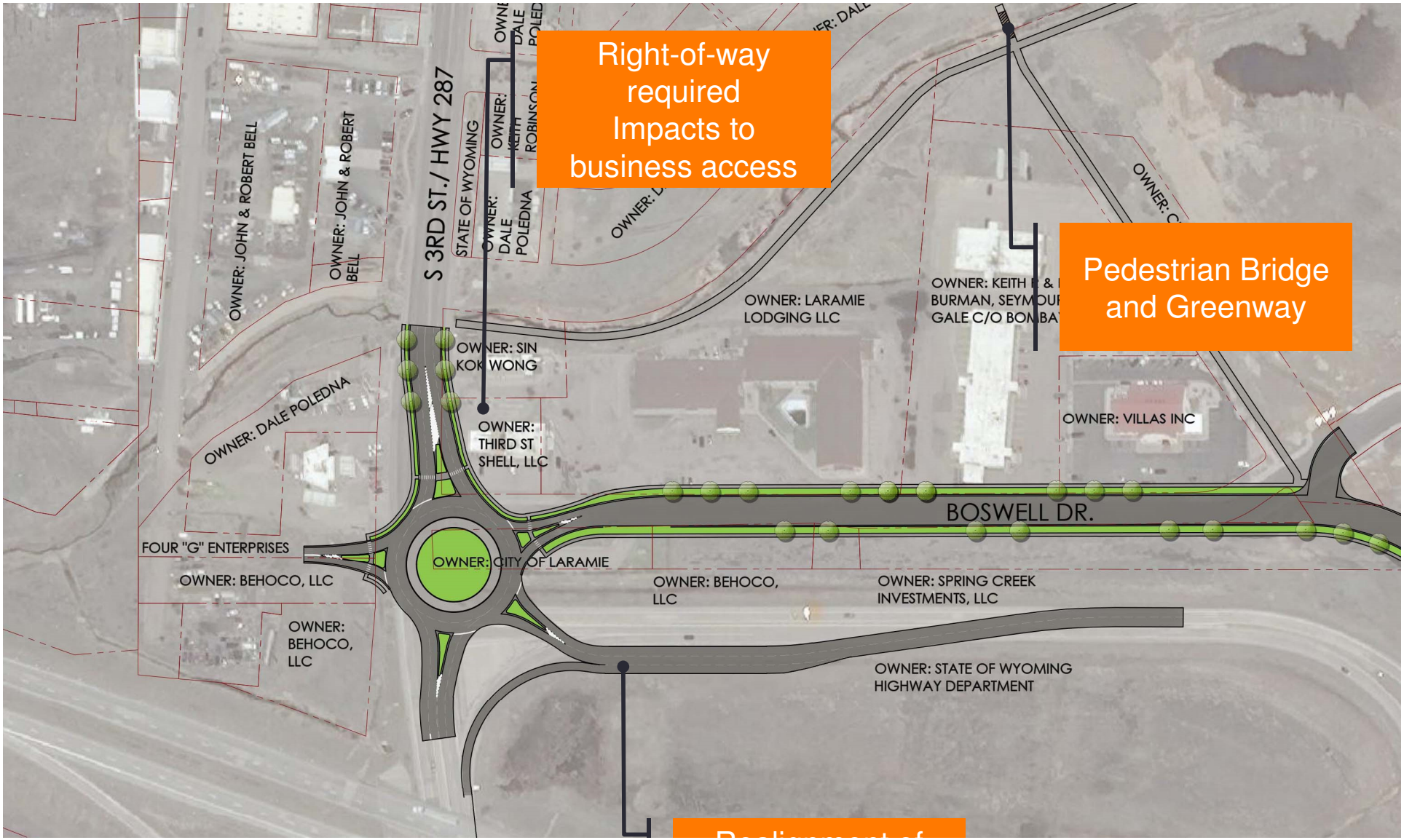
E. Palmer Drive w/ Cul-de-sac Boswell



RAB at 3rd/ Boswell/ I-80 WB Ramps

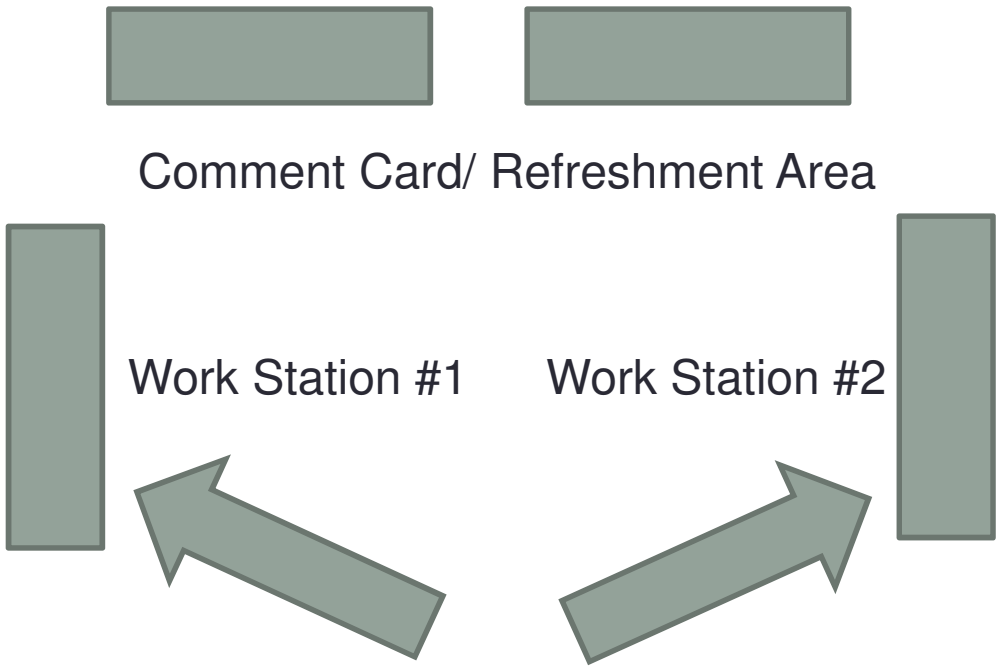


RAB at 3rd/ Boswell/ I-80 WB Ramps



Work Station Areas

- Two Identical Work Stations
  - **Tables**
    - Aerial photo with street views
- Comment Card/ Refreshment Area



Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [ ] Other _____ (Please specify)

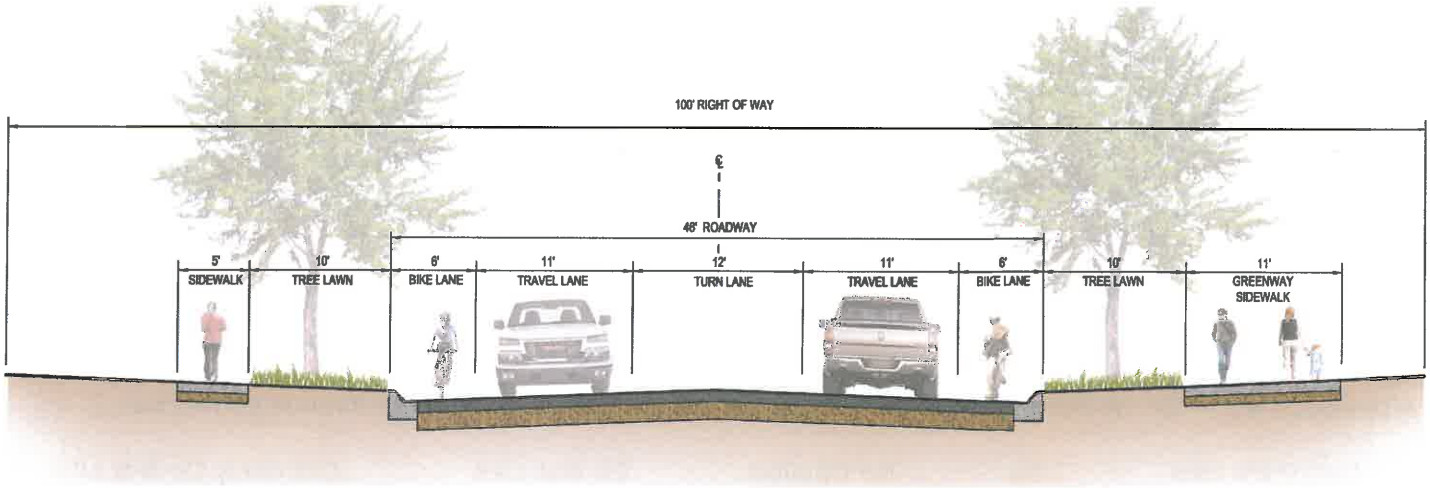
Please give your contact information in order to keep you informed (Optional)?

Name: Crystal Graf

Address: 1913 River Creek Ct.

Phone: 785-250-6500

Email: n.c.graf@outlook.com



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

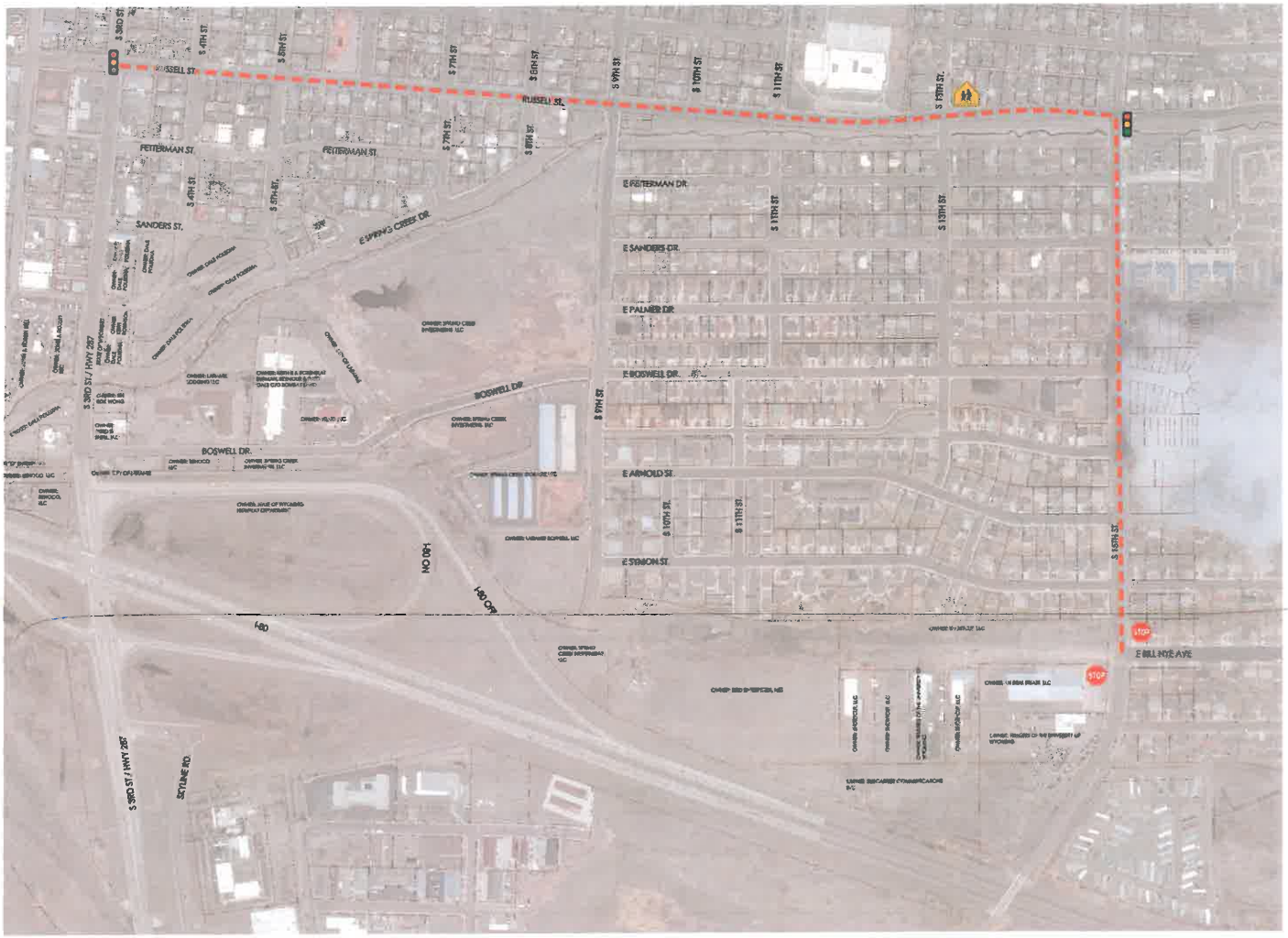
Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
[x]	[ ]	[ ]	[ ]	[ ]

Any additional comments?

_____

_____

_____



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

- Gives access to all business
- Helps the flow of traffic

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☑	☐	☐	☐	☐

Any additional comments?

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [ ] Other _____ (Please specify)

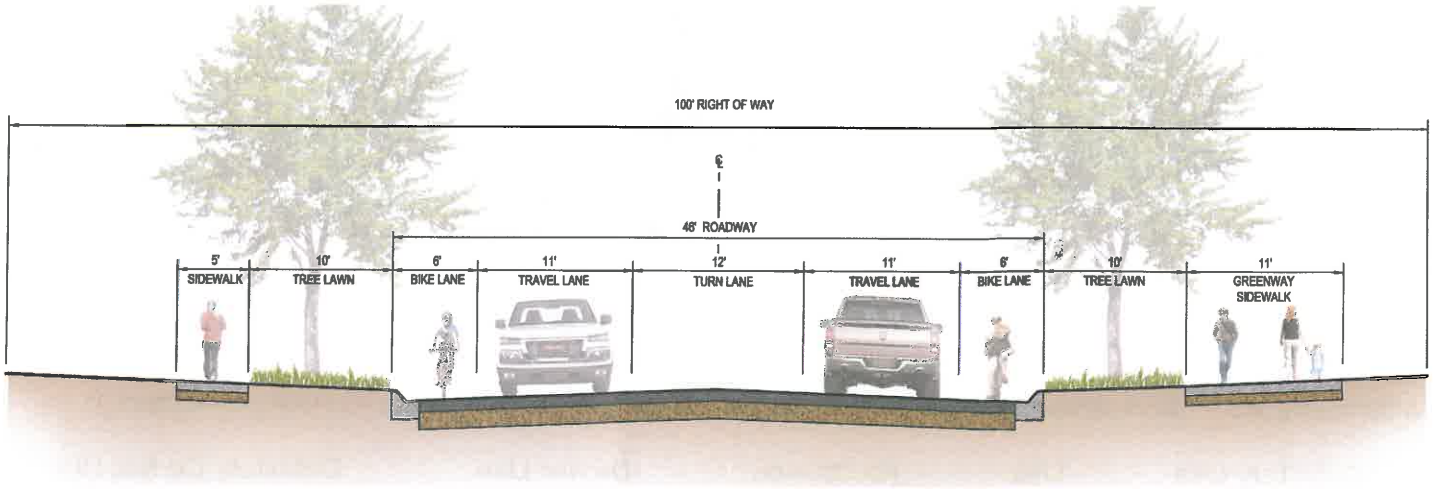
Please give your contact information in order to keep you informed (Optional)?

Name: NATHAN EWERT

Address: 1907 AUTUMN CIRCLE

Phone: _____

Email: _____



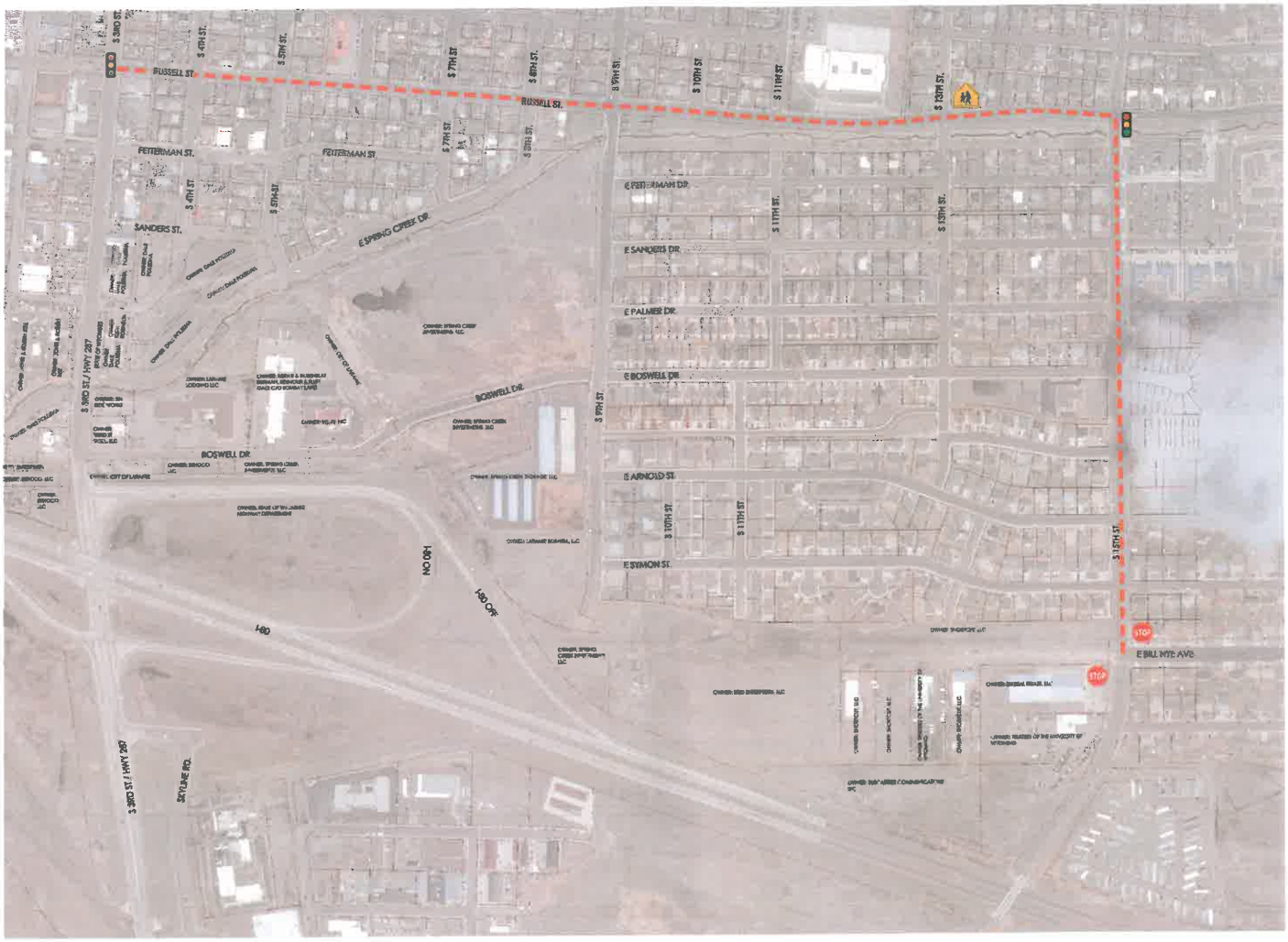
Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☒

Any additional comments?

Why left hand turn lane? doesn't seem to be a lot of ~~any~~ left hand turns on the street. maybe use the left hand turn space on either side for extra green space.



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☐

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

LOGISTICALLY BEST OPTION I THINK.

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

Y'ALL Be crazy to consider this

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

I like this option but Roundabout in Wyoming = good luck.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) How About a cycle track ?

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [ ] Other _____ (Please specify)

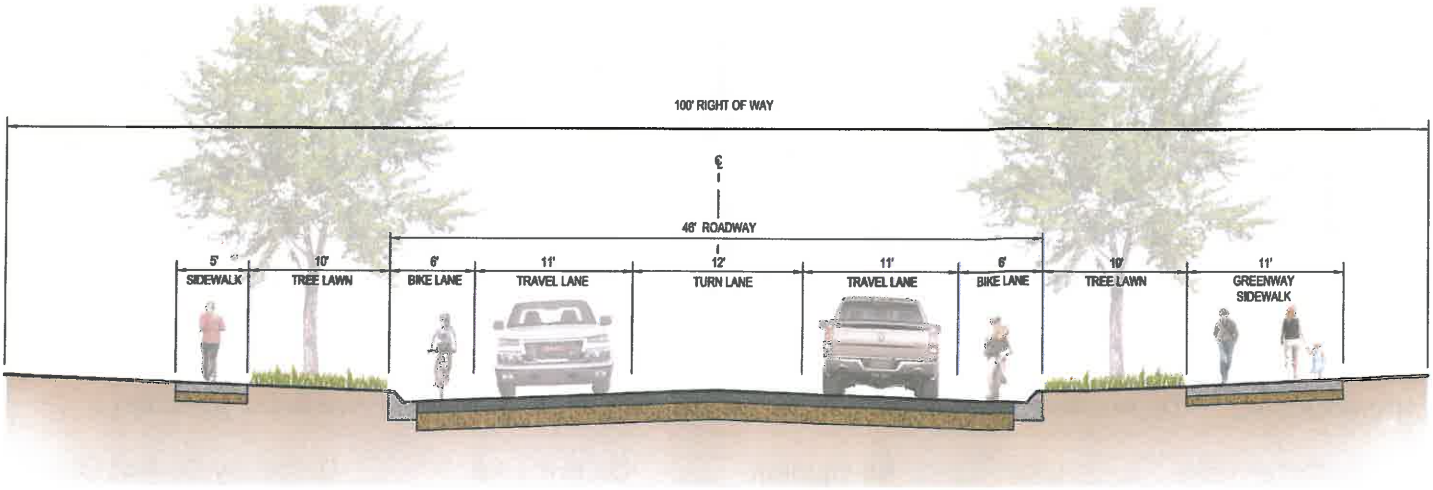
Please give your contact information in order to keep you informed (Optional)?

Name: _____

Address: _____

Phone: _____

Email: _____



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

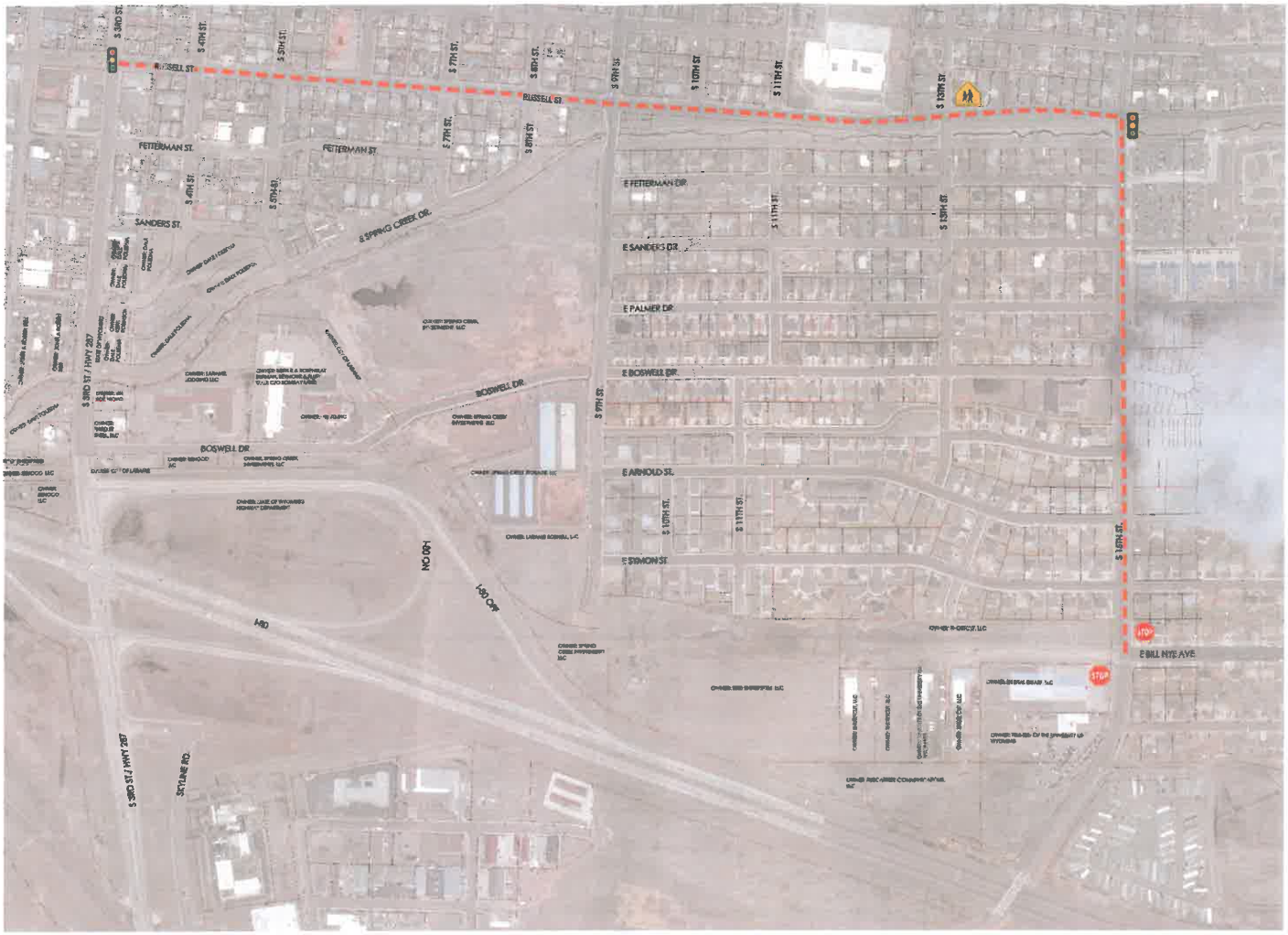
Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☐

Any additional comments?

_____

_____

_____



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
X	☐	☐	☐	☐

Any additional comments?

if it aint Broke don't fix it

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- ☐ Home owner in the area
- ☐ Renter in the area
- ☐ Business owner in the area
- ☐ Commercial property owner
- ☐ Employee in the area
- ☐ Potential Route user
- ☒ Other LAND OWNER (Please specify)

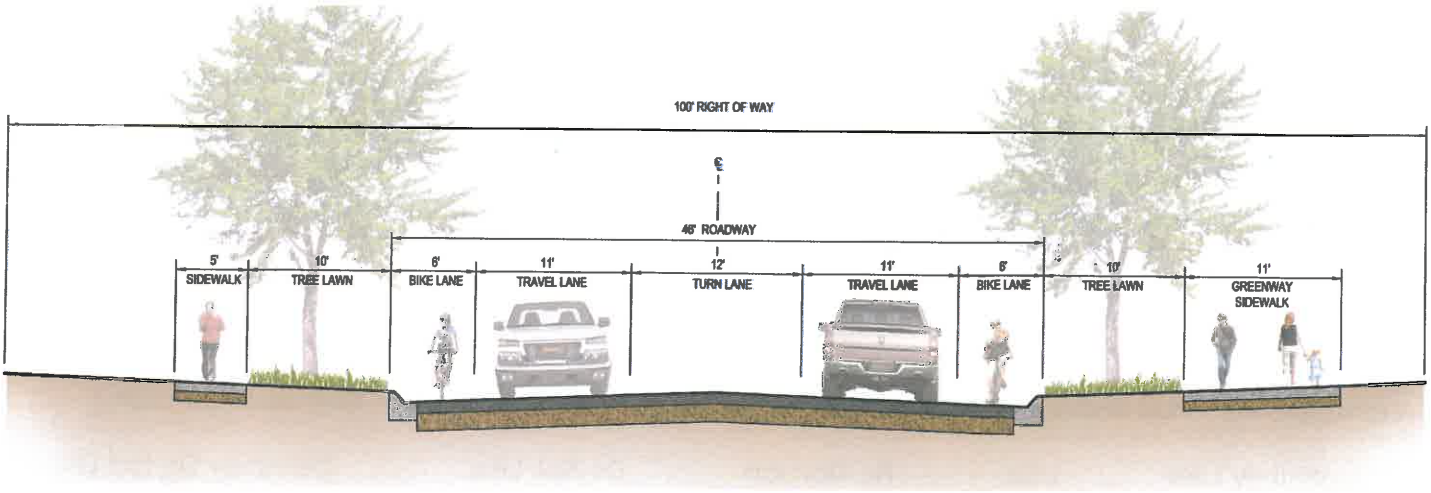
Please give your contact information in order to keep you informed (Optional)?

Name: DON BIRD

Address: 1719 PERSON ST.

Phone: 745-7078

Email: DON DOT BIRD @ AOL . COM



Bill Nye Avenue Looking West

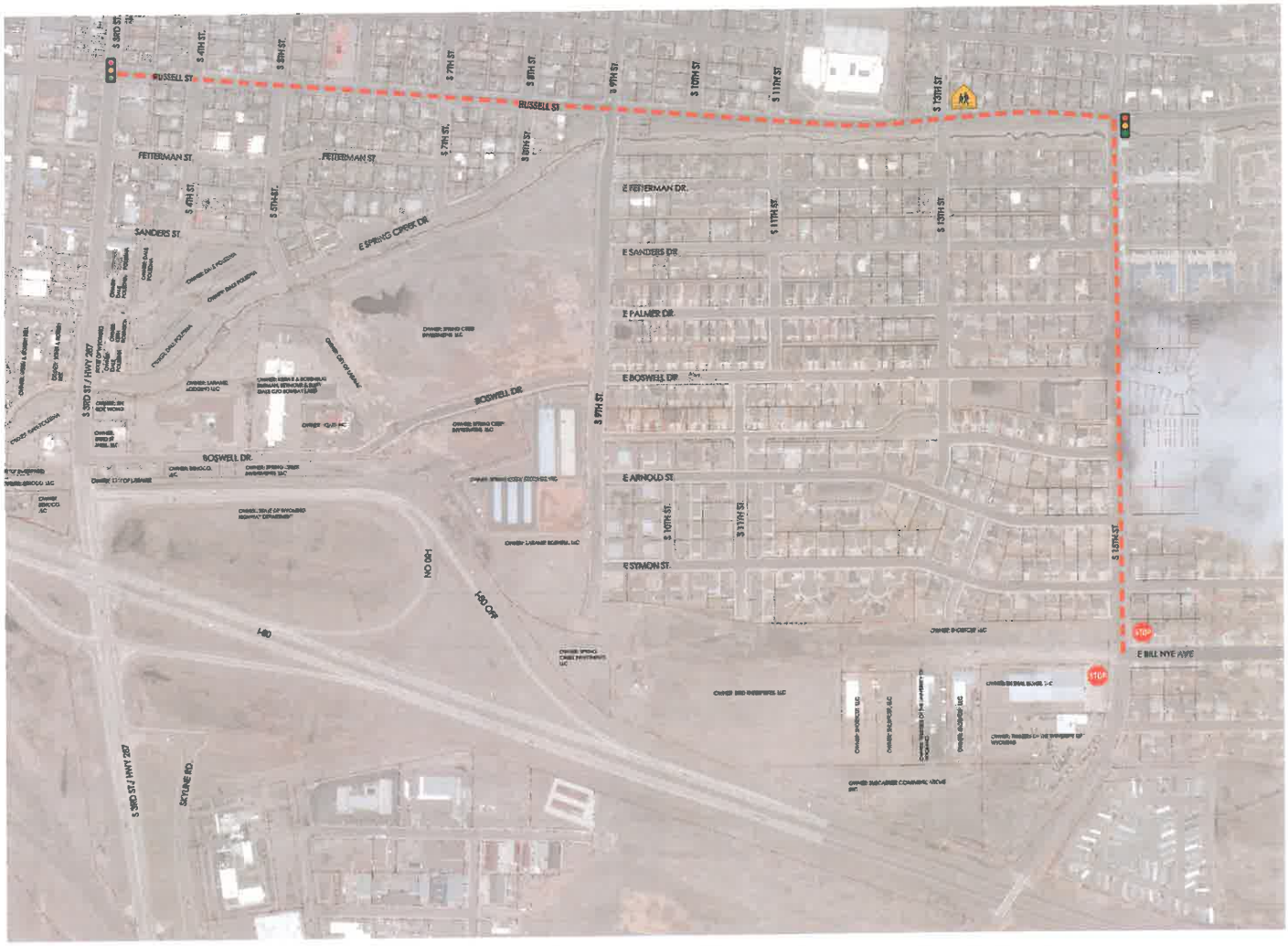
Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☒	☐	☐

Any additional comments?

\\AVISRVVDCFP\Projects2\3786_BILLNYE\Meetings\Public Meeting\20151021_Meeting_1\20151001_Publicmeetingno.1Comment Card_Final.Doc

(Please Turn Over)



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☐

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- ☑ Home owner in the area
- ☐ Renter in the area
- ☐ Business owner in the area
- ☐ Commercial property owner
- ☐ Employee in the area
- ☑ Potential Route user
- ☐ Other _____ (Please specify)

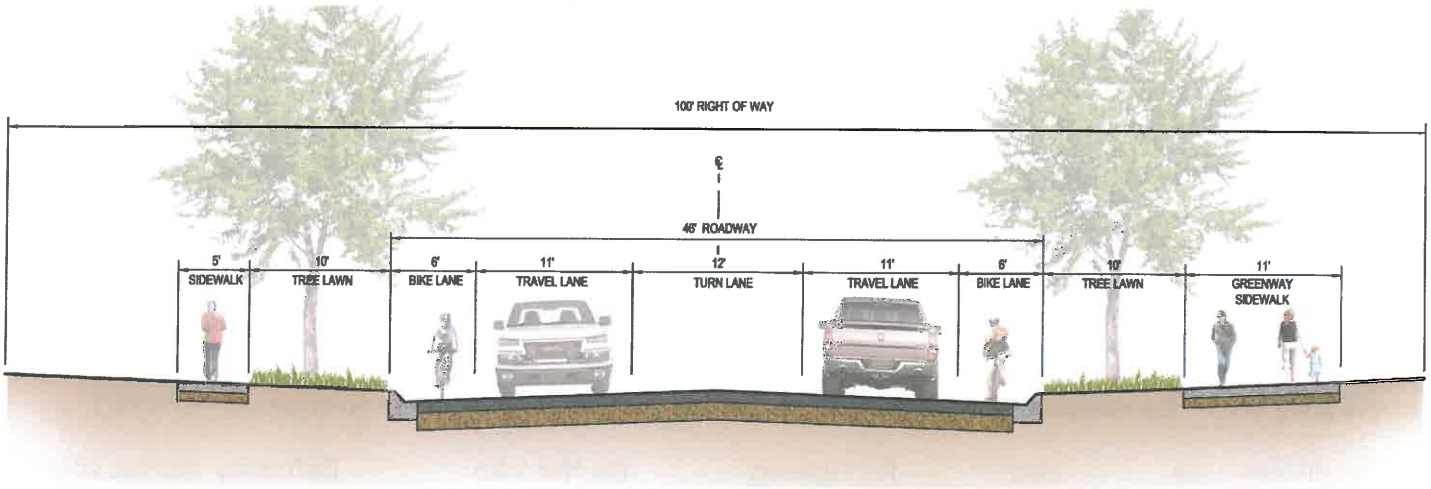
Please give your contact information in order to keep you informed (Optional)?

Name: Nick Swartz

Address: 101 S. 5th

Phone: 307-460-3282

Email: n4swartz@gmail.com



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☑	☐	☐	☐	☐

Any additional comments?

_____

_____

_____

(Please Turn Over)

"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☑

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☑	☐	☐

Any additional comments?

Ambivalent – but more stoplights would not be desirable.

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☑

Any additional comments?

stoplights too close to each other, Cul de Sac is not desirable on Boswell

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☑	☐	☐	☐	☐

Any additional comments?

Roundabout would make a much-needed aesthetically-pleasing entrance into Laramie.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [x] Potential Route user
- [ ] Other _____ (Please specify)

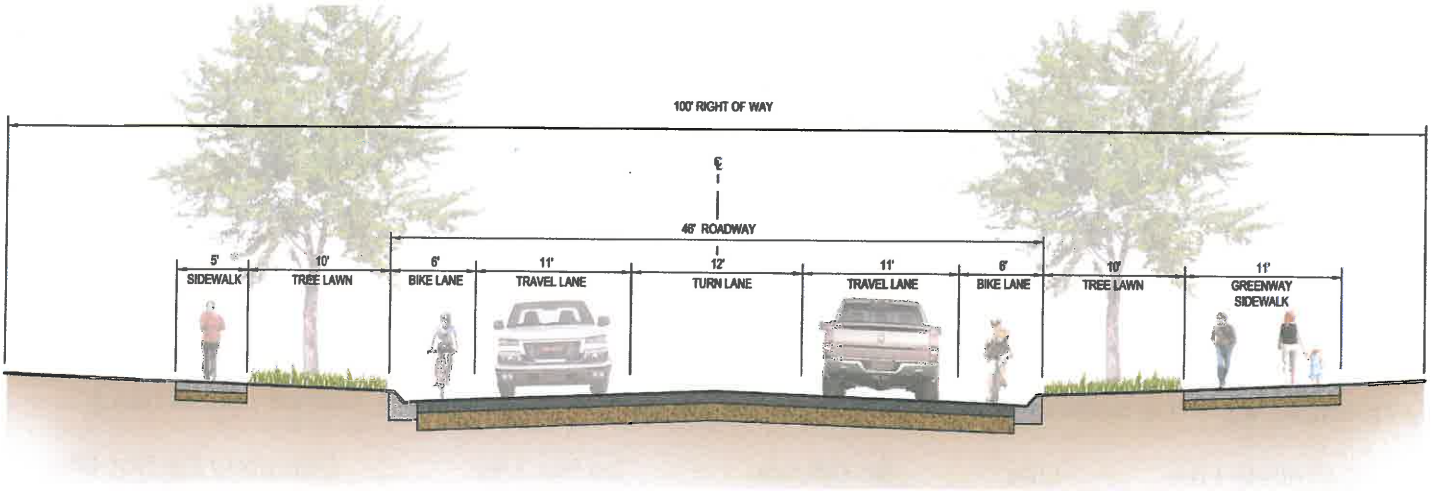
Please give your contact information in order to keep you informed (Optional)?

Name: DIANA SCHWEDE

Address: 1011 S. 5TH STREET

Phone: (307) 460-3280

Email: DIANA.SCHWEDE@GMAIL.COM



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
[x]	[ ]	[ ]	[ ]	[ ]

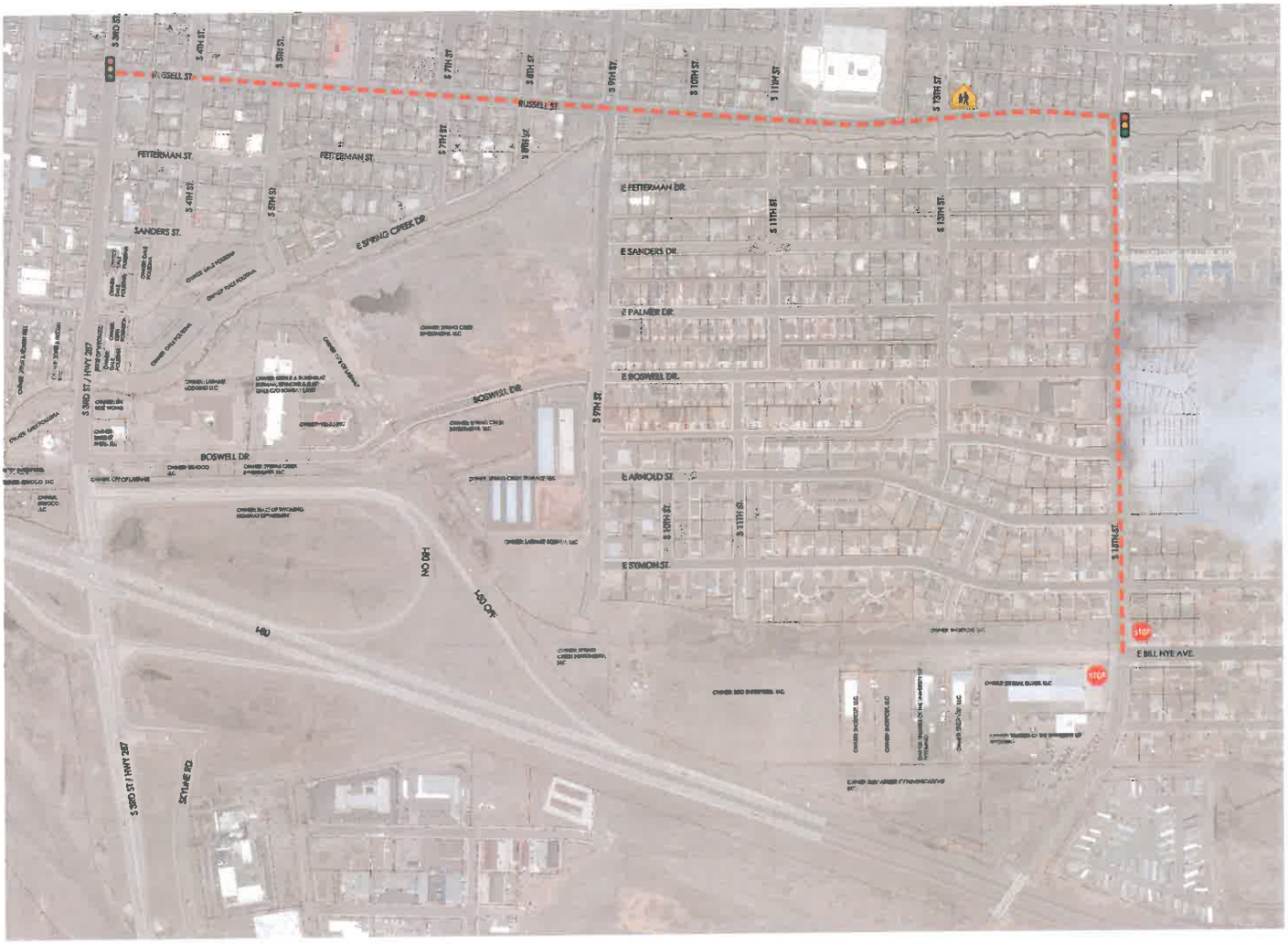
Any additional comments?

_____

_____

_____

(Please Turn Over)



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

I ESPECIALLY APPRECIATE THE POTENTIAL ~~FOR~~ AN FOR IMPROVED EXPERIENCE WHEN ENTERING LARAMIE FROM THE SOUTH WITH THIS OPTION WITH REGARD TO TRAFFIC FLOW, & AESTHETICS.

GREAT WORK, TEAM! THANK YOU!

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- ☒ Home owner in the area
- ☐ Renter in the area
- ☐ Business owner in the area
- ☐ Commercial property owner
- ☐ Employee in the area
- ☐ Potential Route user
- ☐ Other _____ (Please specify)

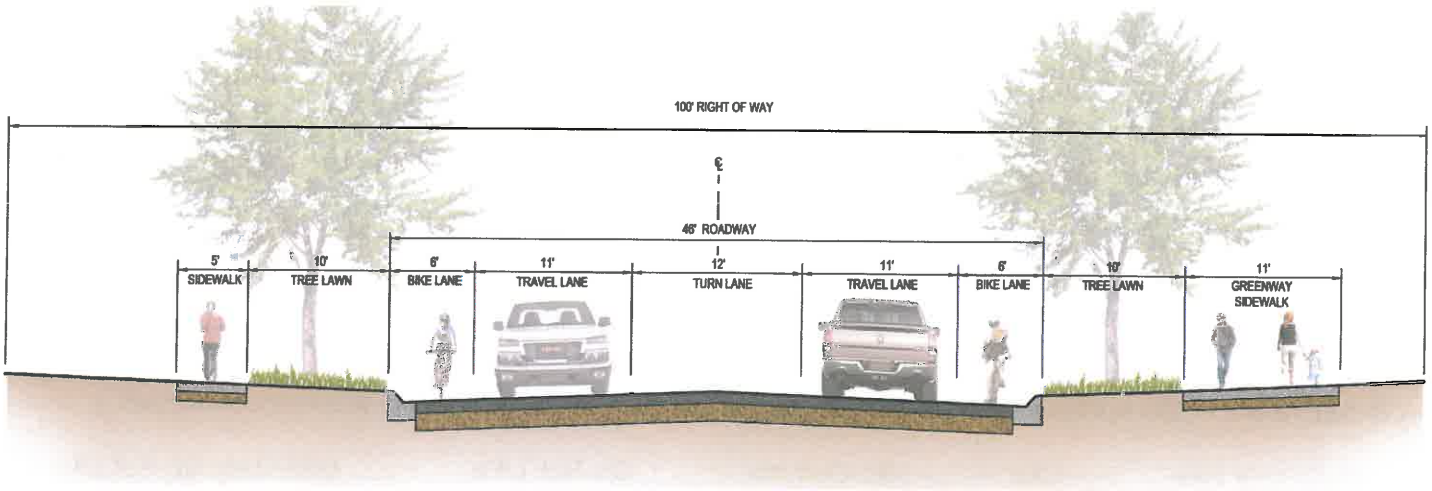
Please give your contact information in order to keep you informed (Optional)?

Name: JOHN KIRKALDIE

Address: 1331 SPRING CREEK DRIVE

Phone: 307-761-0053

Email: merlinjn29@outlook.com



Bill Nye Avenue Looking West

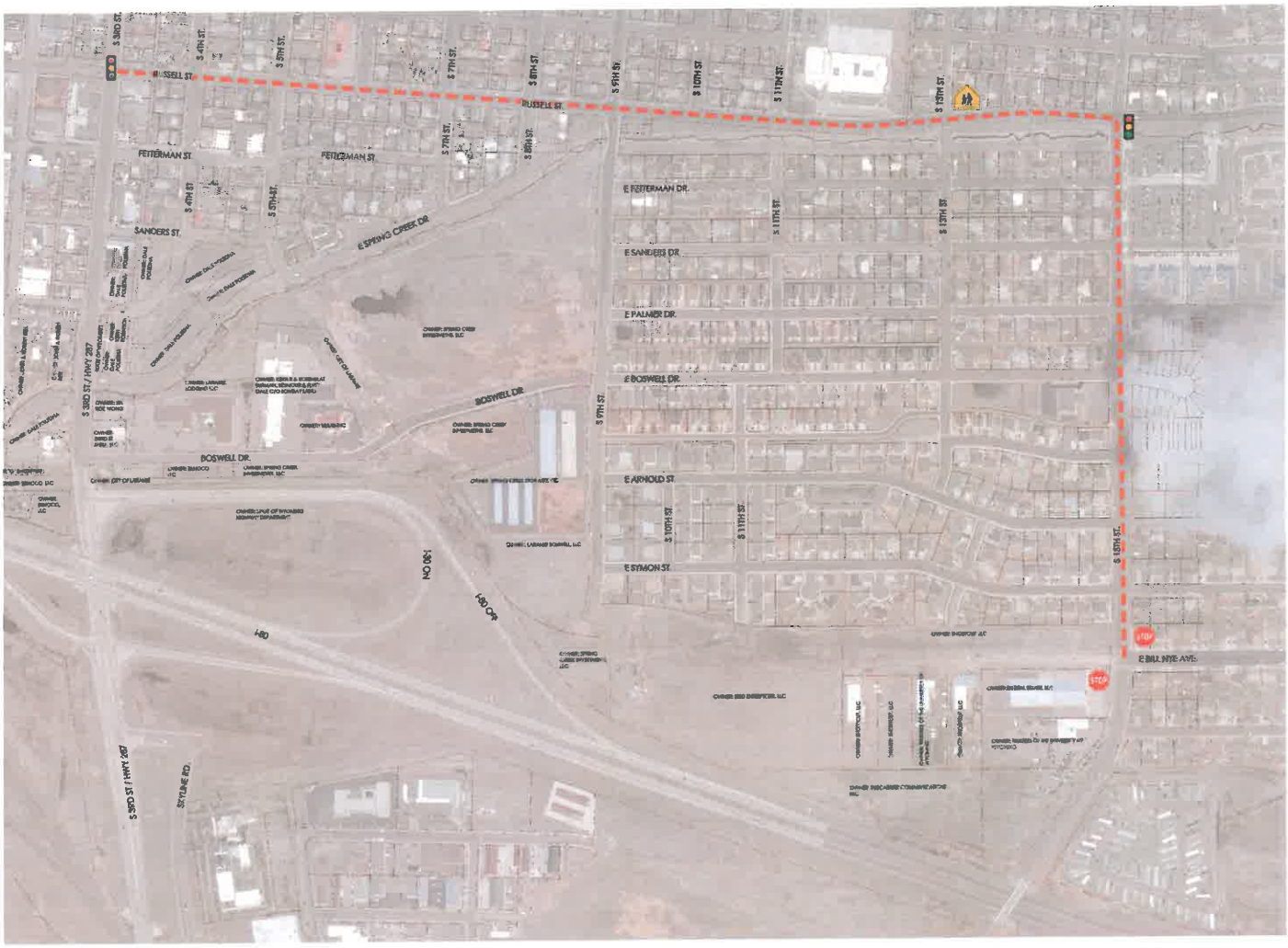
Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

\\AVISRVVDCFP\Projects2\3786_BILLNYE\Meetings\Public Meeting\20151021_Meeting_1\20151001_Publicmeetingno.1Comment Card_Final.Doc

(Please Turn Over)



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Too much congestion. A lot of safety concerns @ Russell and Spring Creek Drive. Have a lot of traffic ~~at~~ today. With this addition it would be almost bumper to bumper.

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☑	☐	☐	☐	☐

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

Too complicated for on and off ramp traffic.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	(5)	4	3	2	1	0
Higher Traffic Speeds	5	4	3	(2)	1	0
Lower Traffic Speeds	5	(4)	3	2	1	0
Pedestrians	5	(4)	3	2	1	0
Bicycles	5	(4)	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [ ] Other _____ (Please specify)

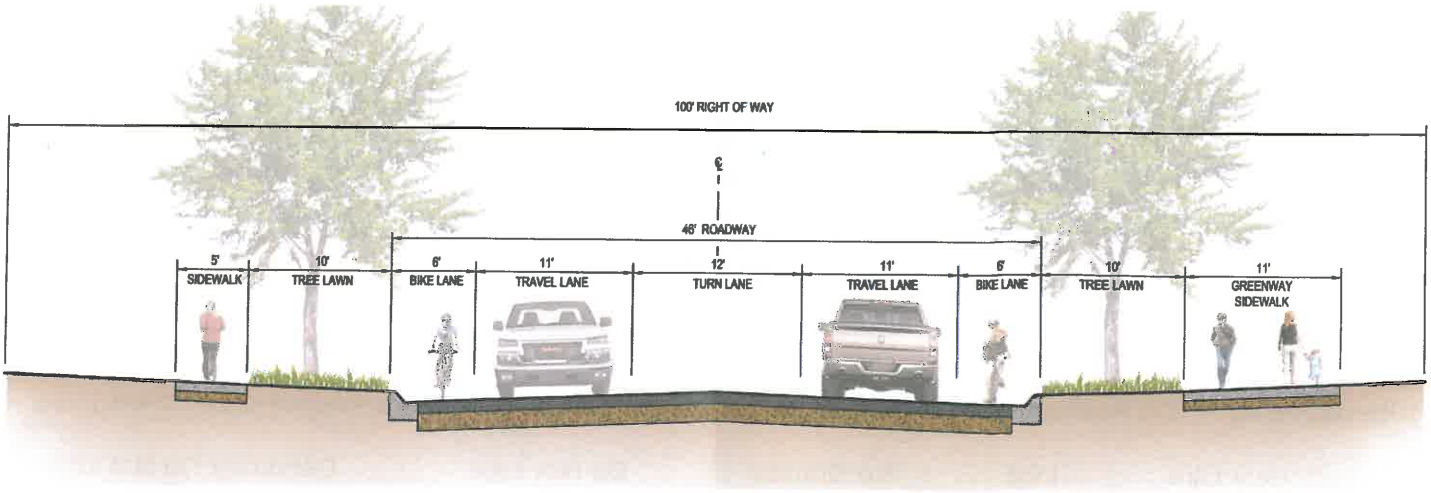
Please give your contact information in order to keep you informed (Optional)?

Name: JASON GREEN

Address: 1434 SYMONS

Phone: (303) 681-8909

Email: js0898@yahoo.com



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

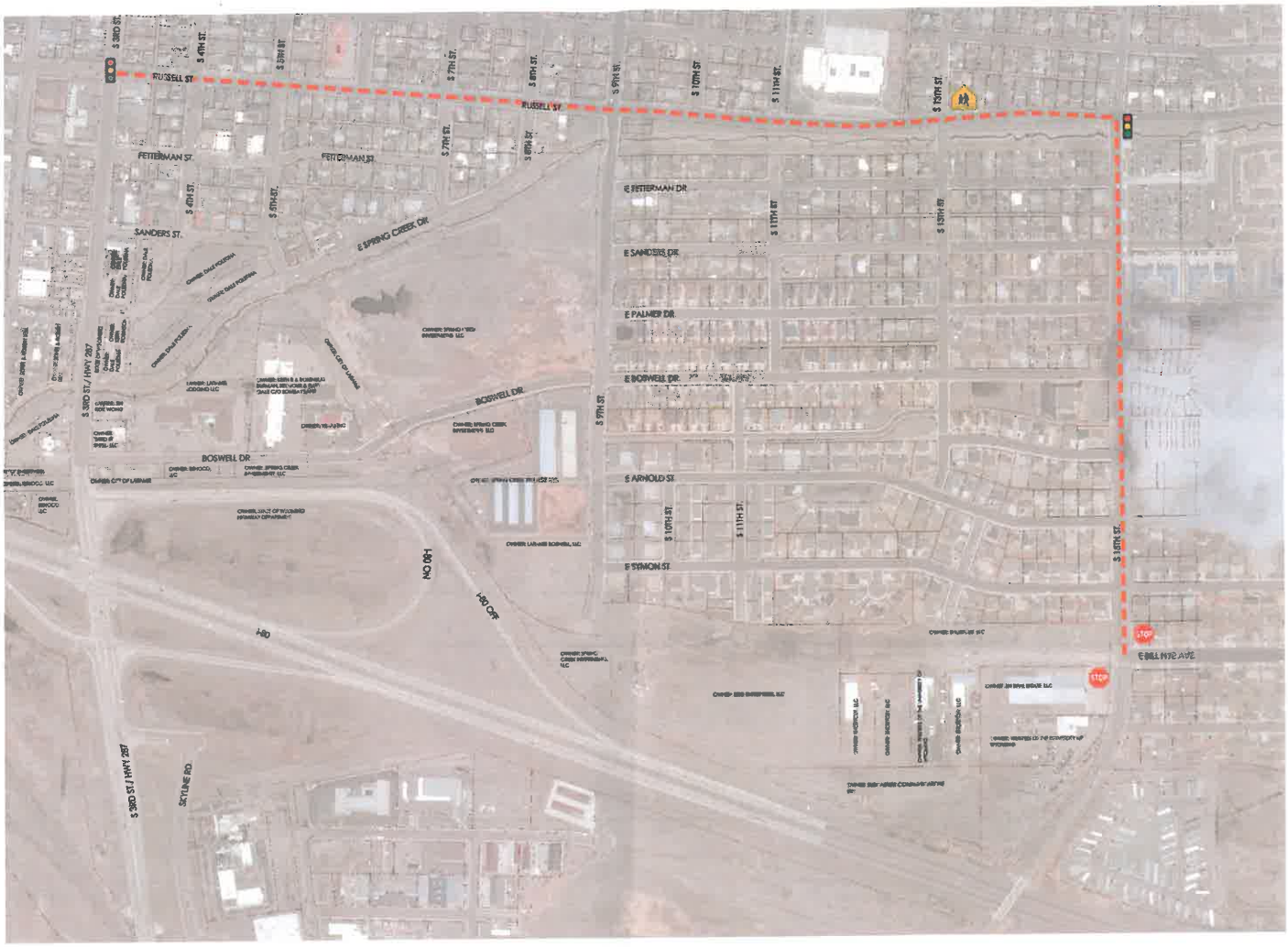
Any additional comments?

_____

_____

_____

(Please Turn Over)



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- ☐ Home owner in the area
- ☐ Renter in the area
- ☒ Business owner in the area
- ☐ Commercial property owner
- ☐ Employee in the area
- ☐ Potential Route user
- ☐ Other _____ (Please specify)

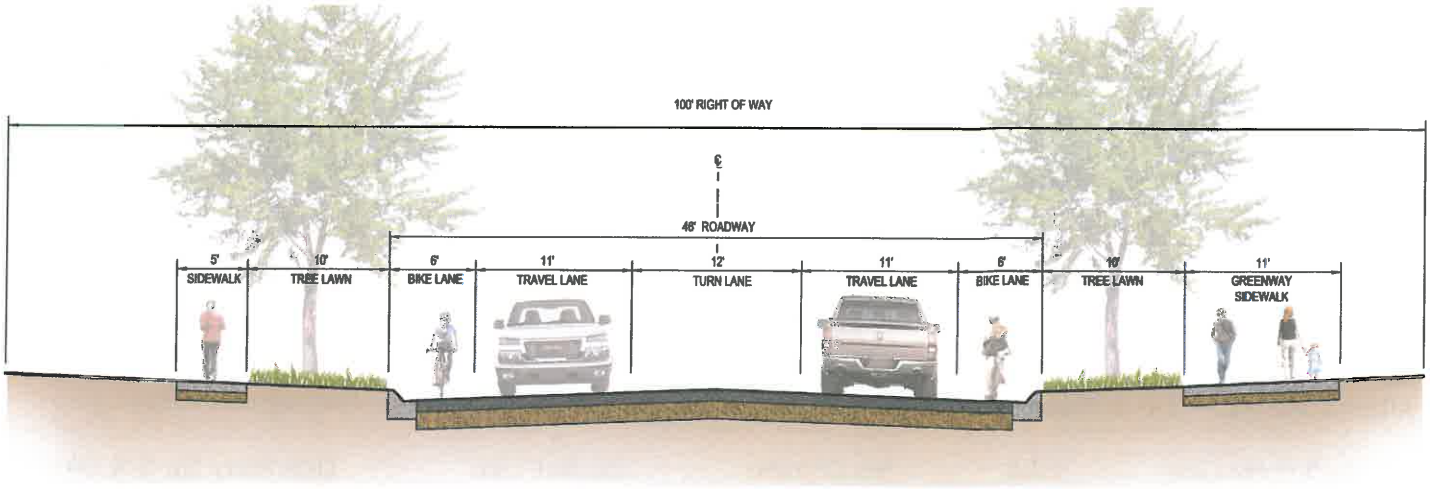
Please give your contact information in order to keep you informed (Optional)?

Name: Corona Village

Address: 513 Boswell Dr.

Phone: 307) 721-0167

Email: N/A



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☒	☐	☐

Any additional comments?

_____

_____

_____

(Please Turn Over)

"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	■	☐

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	(5)	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	(1)	0
Lower Traffic Speeds	(5)	4	3	2	1	0
Pedestrians	(5)	4	3	2	1	0
Bicycles	(5)	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [x] Other own 12 Rental units in the area. (Please specify)

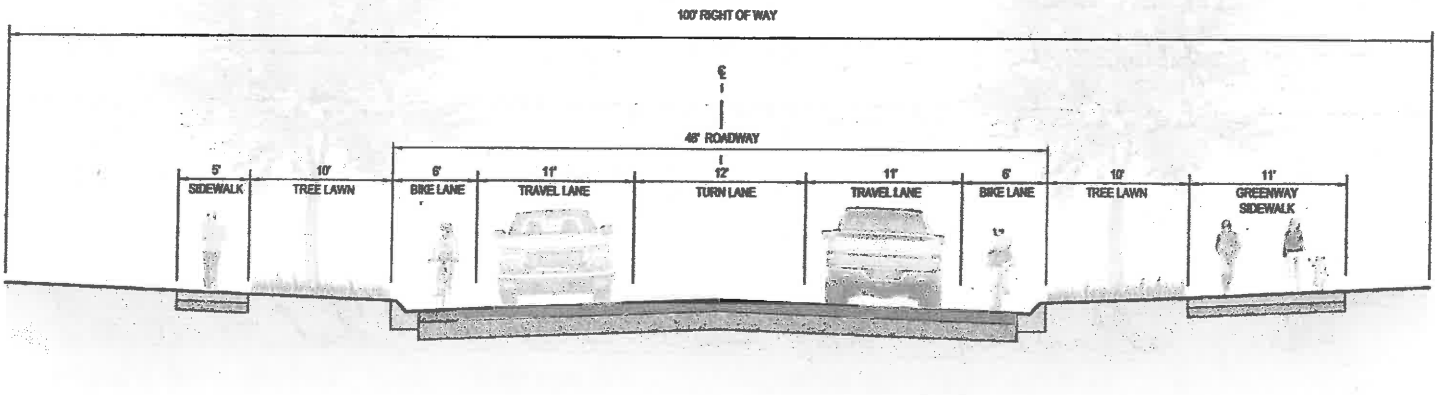
Please give your contact information in order to keep you informed (Optional)?

Name: JEANIE ~~LARAMIE~~ SCHRUMP

Address: 1117 S. 5th St

Phone:

Email: jeanielaramie@aol.com



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

is a turn lane needed — or can it be just @ 3rd Street intersect to keep size (& hopefully speeds) down?

Like to see trees along the roadway.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	(3)	2	1	0
Higher Traffic Speeds	5	4	3	2	(1)	0
Lower Traffic Speeds	(5)	4	3	2	1	0
Pedestrians	(5) if greenbelt	4	3	2	1	0
Bicycles	5	4	(3)	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

I am concerned about the rate of speed on such a long roadway - perhaps speed bumps @ pedestrian intersects?
Bicycles are very seasonal in Laramie. Not sure how many bikes would use this roadway as far as it is from UW & downtown.
It is very hard to walk on this gypsum - retains water, slippery - not sure the diagonal strip along Corona Village would be used. If sidewalk along Spring Creek is greenbelt, then ok - otherwise, there is already a sidewalk on the N side of Spring Creek from 5th to 9th.

Thank you for providing input for this important project.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Please return your comment sheet to the check-in table before you leave.

Mail them to: AVI, PC, 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

Russell/Spring Creek is already a school bus route. Neighborhoods (existing) are not affected.
This area is gypsum – not conducive to development.
I have lived on S. 5th since 1972 & know this area very well.

Boswell Drive Realignment at 3rd Street.

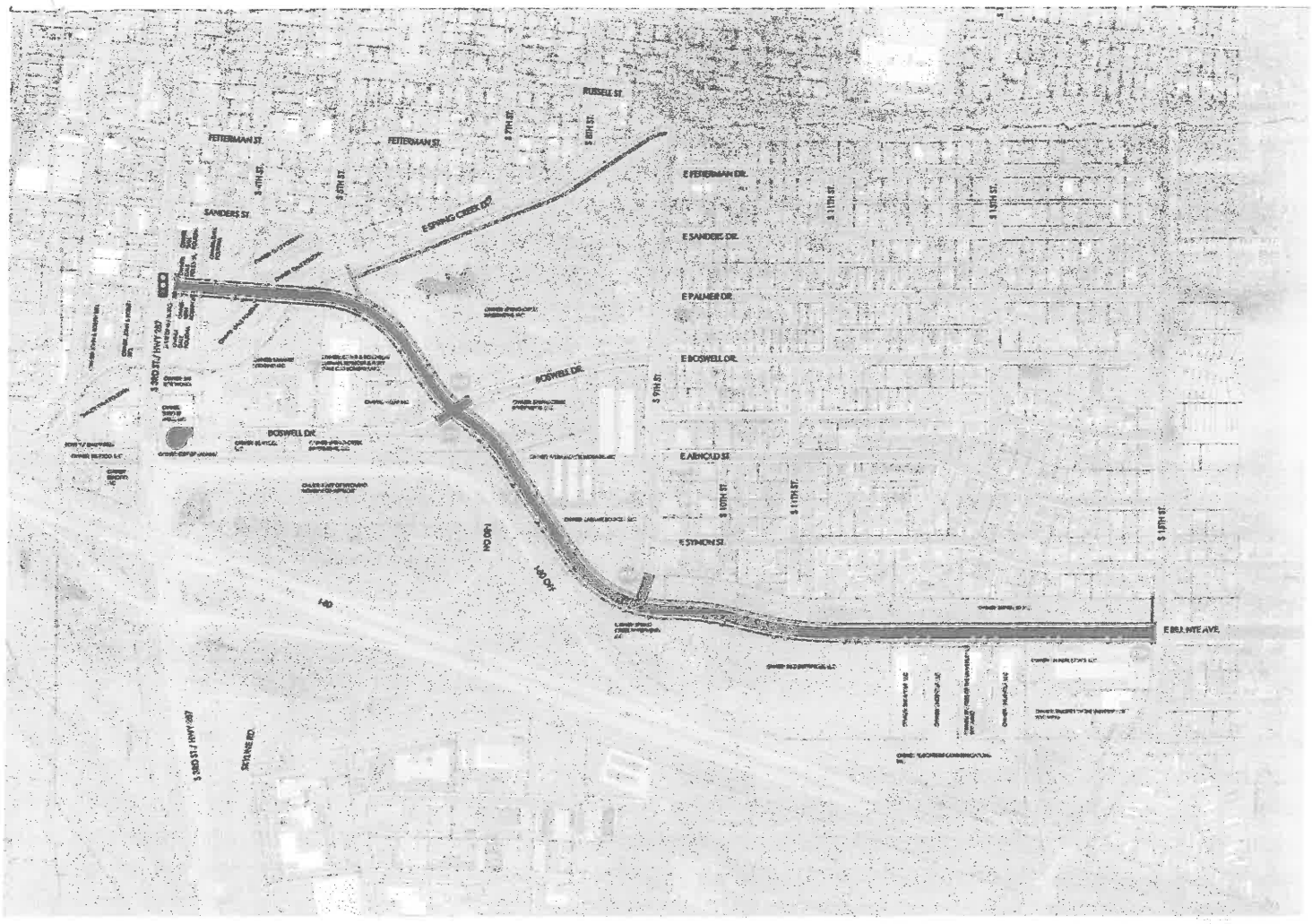
Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

Bill Nye would not affect existing neighborhoods. No need to build a bridge over Spring Creek. Chinese restaurant has been closed for YEARS. 9th Street bridge is somewhat narrow, but that is good due to proximity to elementary school.

(Please Turn Over)



Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☒	☐

Any additional comments?

Needs a large bridge to cross Spring Creek. Traverses an area where locals walk their dogs (golf na lots). Don't like thoroughfare coming so close to residences on S. 4th, S. 5th, & Spring Creek Drive. I do see, however, where this roadway is less intrusive to businesses. There is already a large space between the "modular" & the old Texaco (now a 4ack? shop) on E. 3rd & good access to Sushi, Motel 8, & Corona Village.

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Too complex within close proximity of I-80 off/on. Worried about semis (Southbound) needing to ~~exit~~ enter onto I-80 & cross car lanes due to wide turns semis need. Cheyenne roundabout was pushing to VA hospital is MISERABLE. Vandehei exit (far less traffic) is fine. I do not think this will be a wise decision here. (Pershing in Cheyenne: accidents up; degree of damage per wreck down.)

(Please Turn Over)

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- ☒ Home owner in the area
- ☐ Renter in the area
- ☐ Business owner in the area
- ☐ Commercial property owner
- ☐ Employee in the area
- ☒ Potential Route user
- ☐ Other _____ (Please specify)

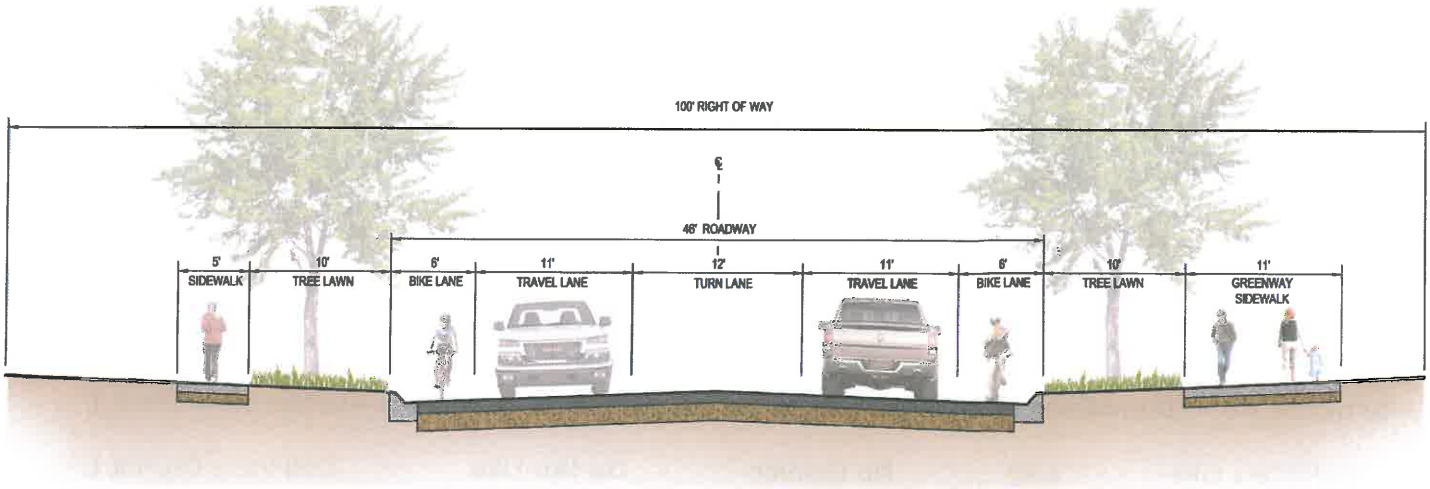
Please give your contact information in order to keep you informed (Optional)?

Name: Nick Graf

Address: 1913 River Creek Ct

Phone: 785 250 6601

Email: Nicholas.e.graf@gmail.com



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

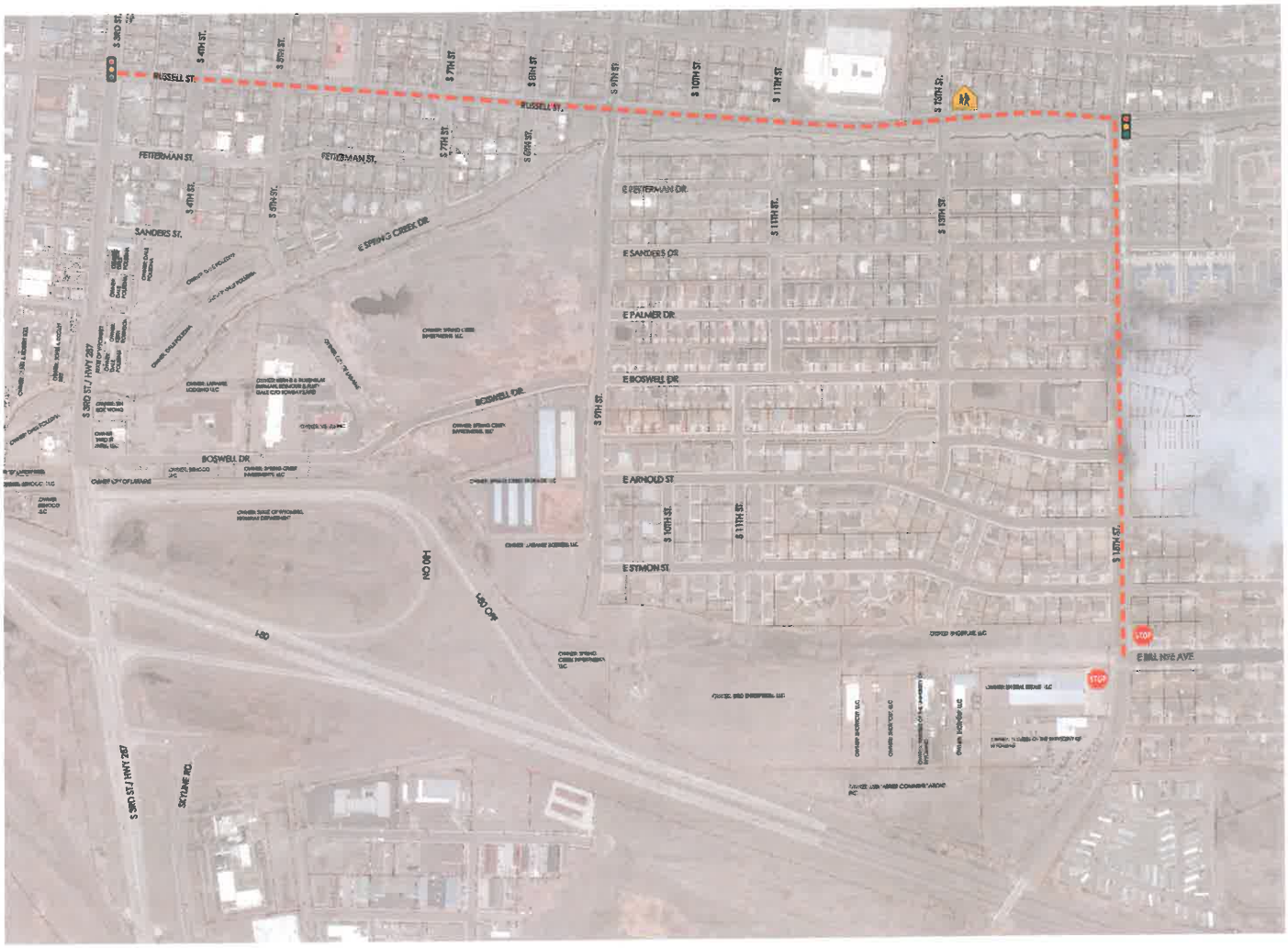
Any additional comments?

_____

_____

_____

(Please Turn Over)



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☑

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☒	☐	☐

Any additional comments?

I Really Dont want another light in town.

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

I am

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

Do this.

No New lights tht yeah

add's the ability, add an attendance welcome to Larame

in round abt.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) No new lights

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

I really like ~~the~~ the round about!.

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [ ] Other _____ (Please specify)

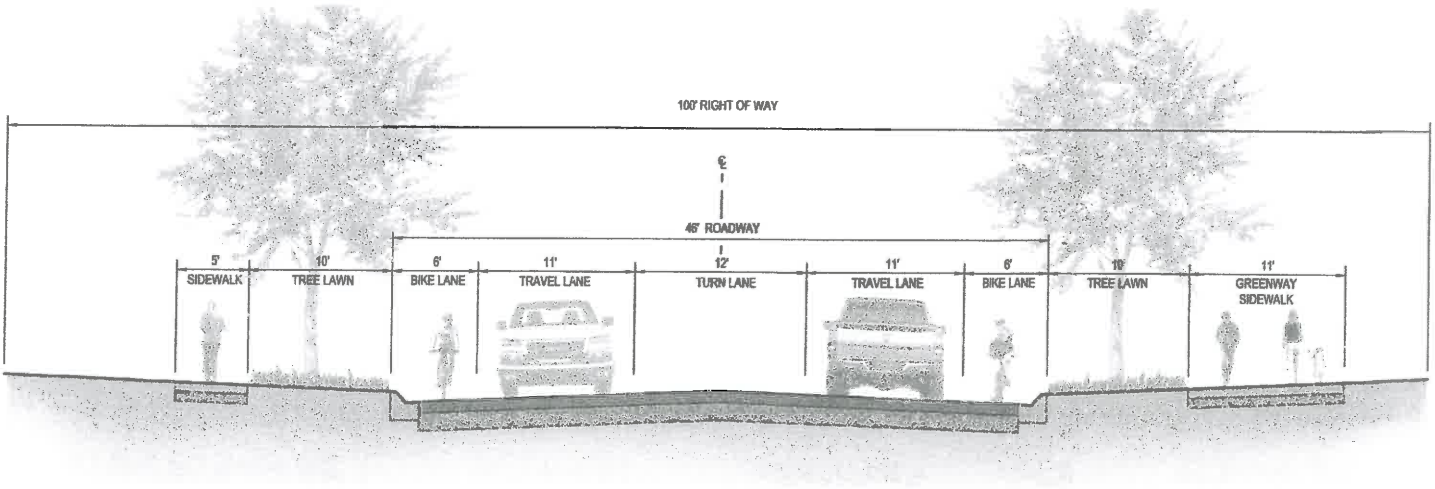
Please give your contact information in order to keep you informed (Optional)?

Name: DAVE NELSON

Address: 1215 S. 5TH ST, LARAMIE NOV 9 2015

Phone:

Email: NELSONASSC@AOL.COM



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

_____

_____

_____

"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☑	☐	☐

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☑

Any additional comments?

TOO CLOSE TO RESIDENTIAL AREA

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☑	☐	☐

Any additional comments?

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	0
Lower Traffic Speeds	5	4	3	2	1	0
Pedestrians	5	4	3	2	1	0
Bicycles	5	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [ ] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [ ] Potential Route user
- [ ] Other _____ (Please specify)

Please give your contact information in order to keep you informed (Optional)?

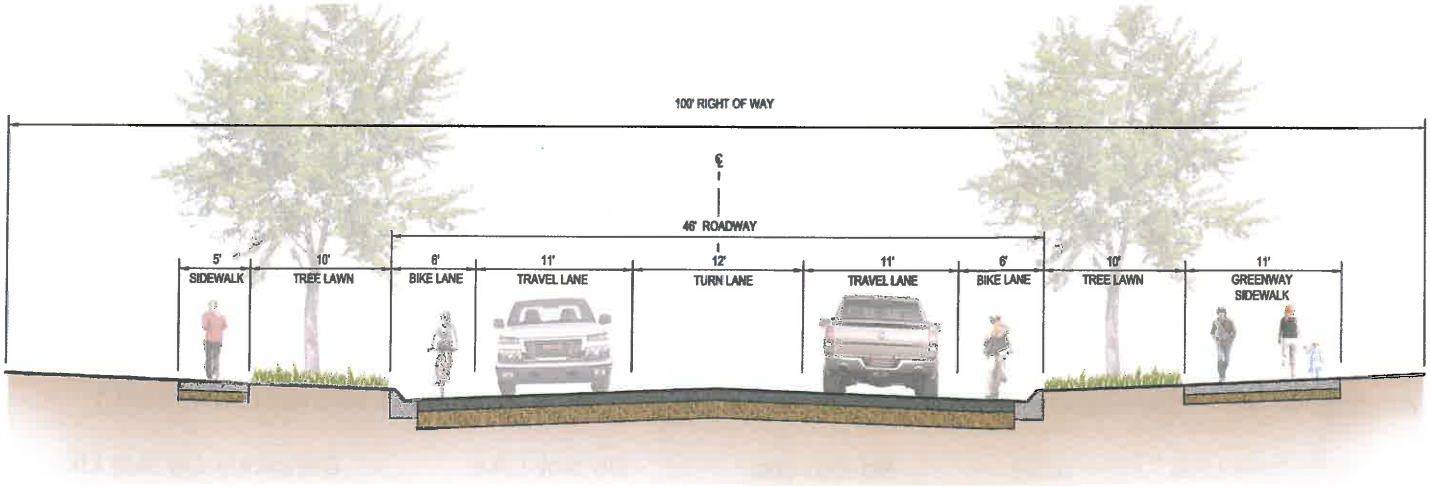
Name: Annie Nelson

Address: 1215 South 5TH St

NOV 9 2015

Phone: cell: 307-761-3145

Email: anniegowyo@aol.com



Bill Nye Avenue Looking West

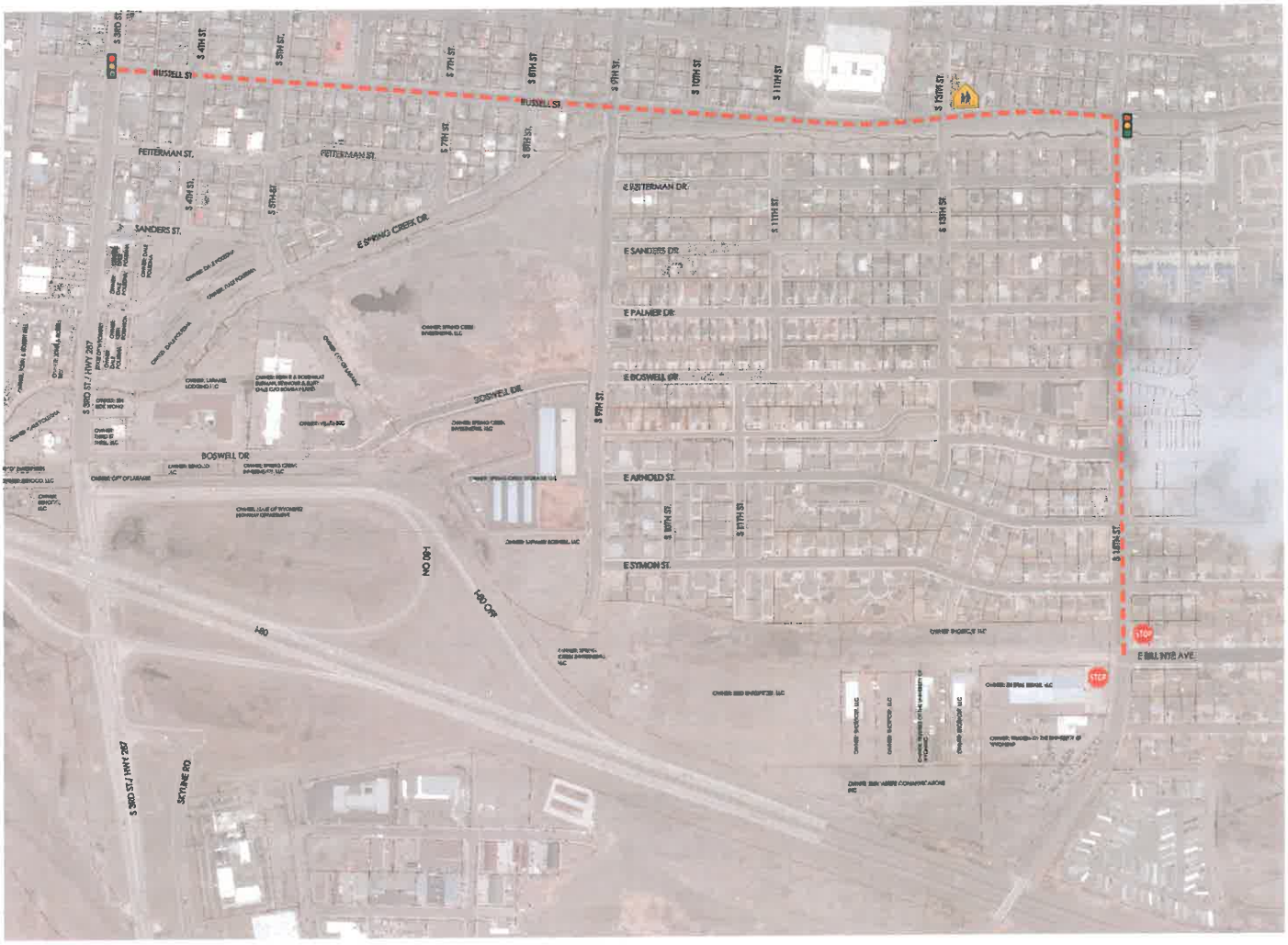
Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☑	☐	☐	☐	☐

Any additional comments?

\\AVISRVVDCFP\Projects2\3786_BILLNYE\Meetings\Public Meeting\20151021_Meeting_1\20151001_Publicmeetingno.1Comment Card_Final.Doc

(Please Turn Over)



"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

As a homeowner I like this option but I know folks will use Boswell Drive & it could become congested so we, as a county/city should plan for traffic increases now.

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☑	☐	☐	☐

Any additional comments?

Ok - not great

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Expensive!!! Both road & foot bridge to cross Spring Creek & disruptive to my neighborhood.

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

This seems the best option to control traffic & most cost effective. Also, least disruptive to 5TH St. neighborhoods & businesses.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	4	3	2	(1)	0
Higher Traffic Speeds	5	4	3	2	(1)	0
Lower Traffic Speeds	5	(4)	3	2	1	0
Pedestrians	5	(4)	3	2	1	0
Bicycles	5	(4)	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Bill Nye Avenue Corridor Study Comment Sheet

Which of the following best describes you (Please check all that apply)?

- [x] Home owner in the area
- [ ] Renter in the area
- [x] Business owner in the area
- [ ] Commercial property owner
- [ ] Employee in the area
- [x] Potential Route user
- [ ] Other _____ (Please specify)

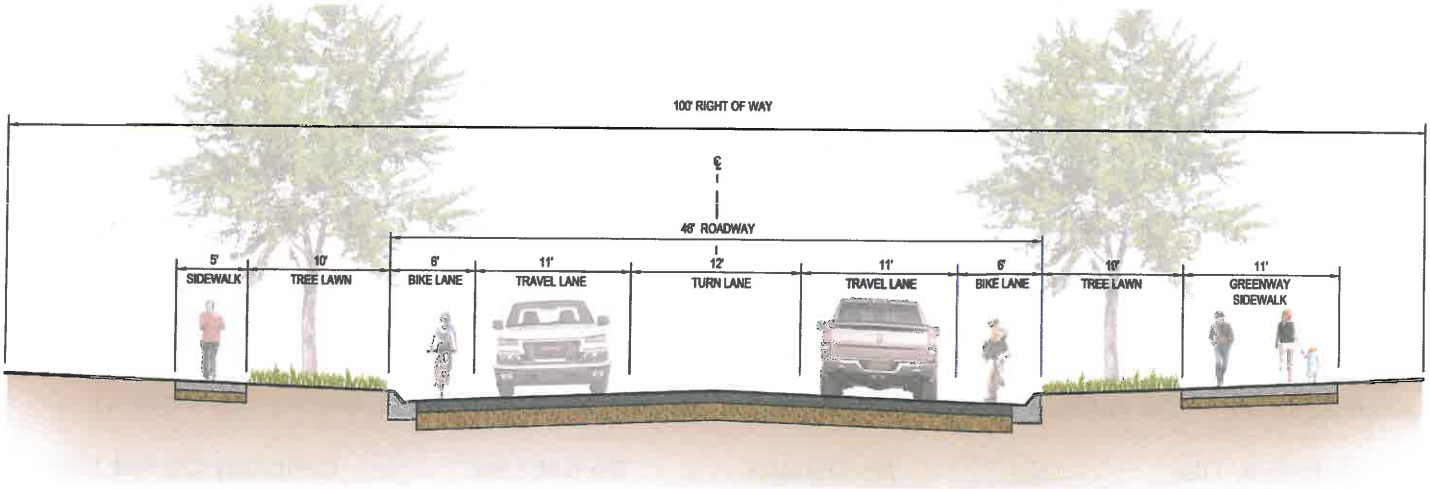
Please give your contact information in order to keep you informed (Optional)?

Name: Evelyn Hill & James Tuthill

Address: 652 N Pierce St 82070

Phone: 307 399 0932

Email: hillevelyn@gmail.com



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

Please keep bike lanes completely separated from vehicular traffic

"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

As much greenery, planted areas, xtra trees seating by creeks, ponds, native species for habitat, blah, blah, blah. Protection from noise in housing areas & play areas.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	(5)	4	3	2	1	0
Higher Traffic Speeds	5	4	3	2	1	(0)
Lower Traffic Speeds	5	4	3	2	1	(0)
Pedestrians	(5)	4	3	2	1	0
Bicycles	(5)	4	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) noise barriers - to be glad you live near the beautiful areas.

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

Return to City by Nov 6

Bill Nye Avenue Corridor Study Comment Sheet

COL/CMO
NOV 03 2015
1:40 pm

Which of the following best describes you (Please check all that apply)?

- ☒ Home owner in the area
- ☐ Renter in the area
- ☐ Business owner in the area
- ☐ Commercial property owner
- ☐ Employee in the area
- ☐ Potential Route user
- ☐ Other _____ (Please specify)

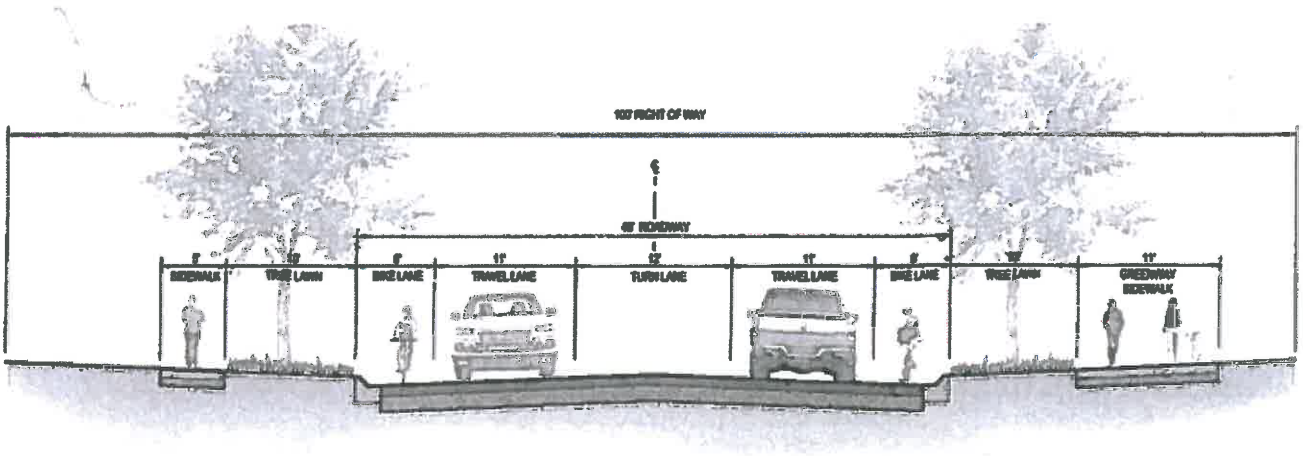
Please give your contact information in order to keep you informed (Optional)?

Name: Ed + Amy Bouse

Address: 1219 South 4th Street

Phone: 307-742-7850

Email: _____



Bill Nye Avenue Looking West

Proposed Typical Section on Bill Nye Avenue looking west.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

All in all people are going to find the best route for themselves. Let the public start to think for themselves for a change.

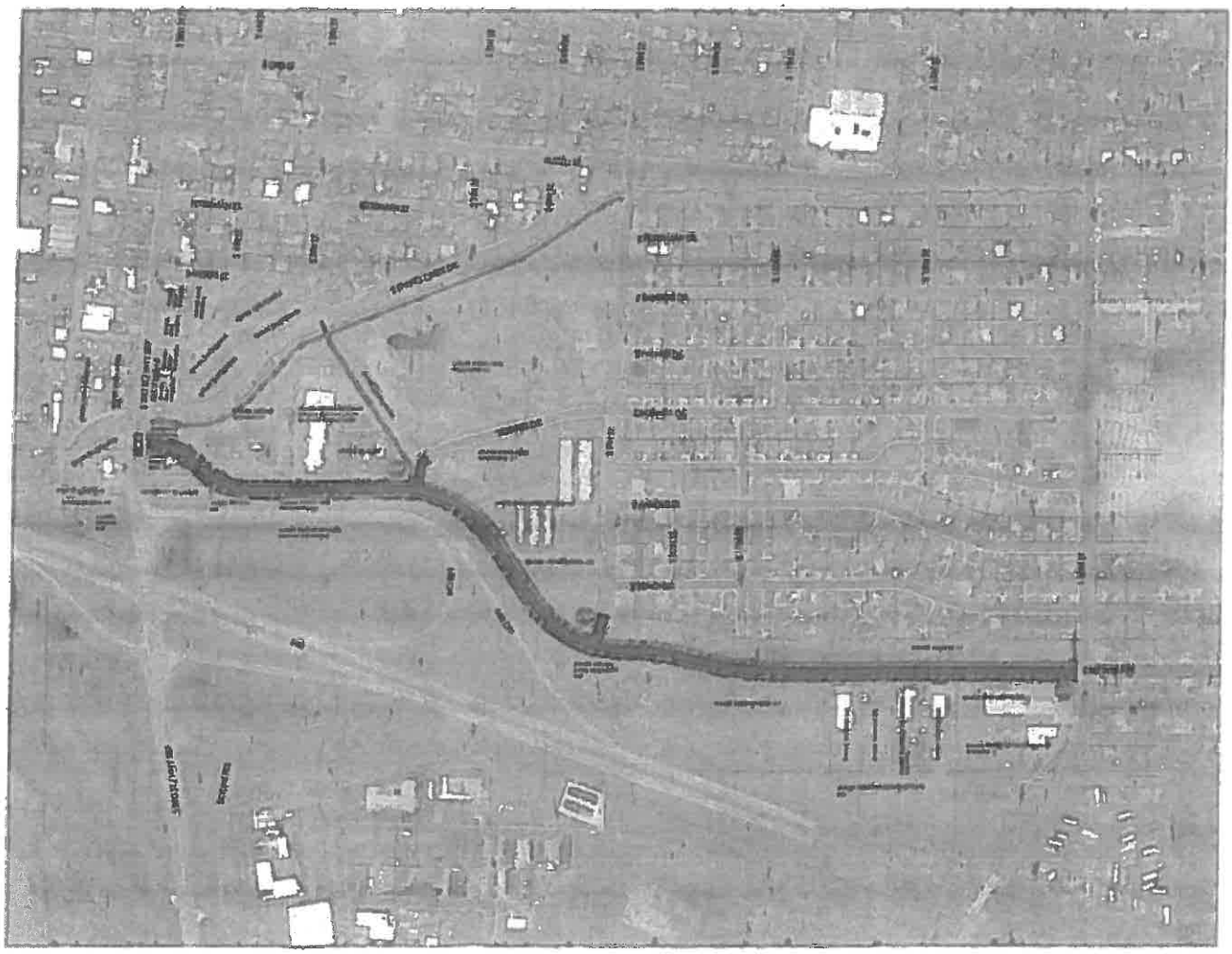
"Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Drive

Alternative #1 – "Do nothing" (Utilize 15th Street to Russell Street for Bill Nye Avenue connection.)

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

Wise use of tax payer monies. With Wyo. tech. going down the tubes, it's time to conserve.



Boswell Drive Realignment at 3rd Street.

Alternative #2 –Boswell Drive Realignment at 3rd Street.

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☒	☐	☐	☐

Any additional comments?

The stop light could also slow down the late night drag races.

(Please Turn Over)

Bill Nye Connection at Palmer Drive 3rd Street

Alternative #3 – Bill Nye Connection at Palmer Drive 3rd Street

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☐	☐	☐	☐	☒

Any additional comments?

Lots of toxic waste in the ground, around this area. Old gas stations (gas, oil + batterys) also a spill of chromium (2-3 hundred gallons) cleaned up twice, but still some left. Plus this area is where the city dumps snow (no telling what tearing this area up is going to disturb.

Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Alternative #4 – Roundabout at 3rd Street, Boswell Drive, and Westbound Off and On Ramps

Definitely Like	Like	No Opinion	Do Not Like	Definitely Do Not Like
☒	☐	☐	☐	☐

Any additional comments?

Works well in Cheyenne.

(Please Turn Over)

Rate the importance of the following transportation modes (circle the most appropriate for each issue) based on what you consider to be the most important design consideration for Bill Nye Avenue?

Description	Very Important to Accommodate	Important to Accommodate	Neutral	Important to Discourage	Most Important to Discourage	No Opinion
Volume of Traffic	5	(4)	3	2	1	0
Higher Traffic Speeds	5	4	3	2	(1)	0
Lower Traffic Speeds	(5)	4	3	2	1	0
Pedestrians	5	(4)	3	2	1	0
Bicycles	5	(4)	3	2	1	0
Other	5	4	3	2	1	0

If Other (please specify) _____

Additional Comments

Do you have any additional ideas, information, or other comments that you would like to provide at this time?

Thank you for providing input for this important project.

Please return your comment sheet to the check-in table before you leave.

If you prefer to mail or email your comments, please do so by November 6, 2015.

Mail them to: AVI, P.C. 1103 Old Town Lane, Cheyenne, Wyoming 82009.

Email: AVI@avipc.com

APPENDIX C

Presentations

ENGINEERING
PLANNING
SURVEYING
PC

Bill Nye Avenue Corridor Study

Steering Committee Meeting #1

August 25, 2015

•LIST OF ATTENDEES •

NAME	COMPANY	EMAIL	CELL
Brad Emmons	AVI	emmons@avipc.com	631-6861
MARK WINGATE	WYDOT	mark.wingate@wyo.gov	777-4180
EARL SMITH	LARAMIE	ESMITH@CITYOFLARAMIE.ORG	721-5241
Jeff Purdy	FHWA	Jeffrey.Purdy@dot.gov	771-2942
Eric Jaap	COL	ejaap @ city of laramie.org	343-3346
RANDY GRIESBACH	WYDOT	randy.griesbach @ wyo.gov	745-2116 c 760-4108
Randy Hunt	City of Laramie	rhunt@cityoflaramie.org	307-343-3308
Charles Bloom	City of Laramie	cbloom@cityoflaramie.org	721.5232
TOM COBB	AVI, P.C.	cobbc@avipc.com	970.214.6542

BILL NYE AVENUE CORRIDOR STUDY

Steering Committee Meeting

August 24, 2015

LARAMIE 1868

STS

ENGINEERING
PLANNING
SURVEYING
PC

Agenda

- Administrative
  - Data Needs
  - Goals of Meeting
- Stakeholder Ideas
  - Primary Connections
    - Sanders Street (Comprehensive Plan)
    - 4th Street
    - Boswell Drive
    - 9th Street
    - Realign Boswell
    - RAB Boswell
    - RAB 3rd Street
    - Dual RAB (RAB 3rd Street and RAB EB Off Ramp/ EB On Ramp)
    - Other Ideas
- Possible Alternatives for Public Meeting
  - Pro's and Con's
- Conceptual Typical Section
- Additional Brainstorm Ideas
- Where to we go from here?

Administrative

- Data Needs
  - Larger Land Use Plan Area
- Goals of Meeting
  - Review and Evaluate Stakeholder and Consultant Options
  - Establish Options to Developed for Public Meeting
  - Set Tentative Date for Steering Committee Meeting #2
  - Set Tentative Date for Public Meeting

Original Sanders Street Connection

4th Street Connection

Boswell Drive Connection

9th Street Connection

Other Alternates Realign Boswell at 3rd St.

Other Alternates Realign Boswell

RAB Boswell Drive

RAB 3rd Street

Dual RAB 3rd Street at Boswell/ EBL I-80

RT Turn In and Out at Boswell Drive

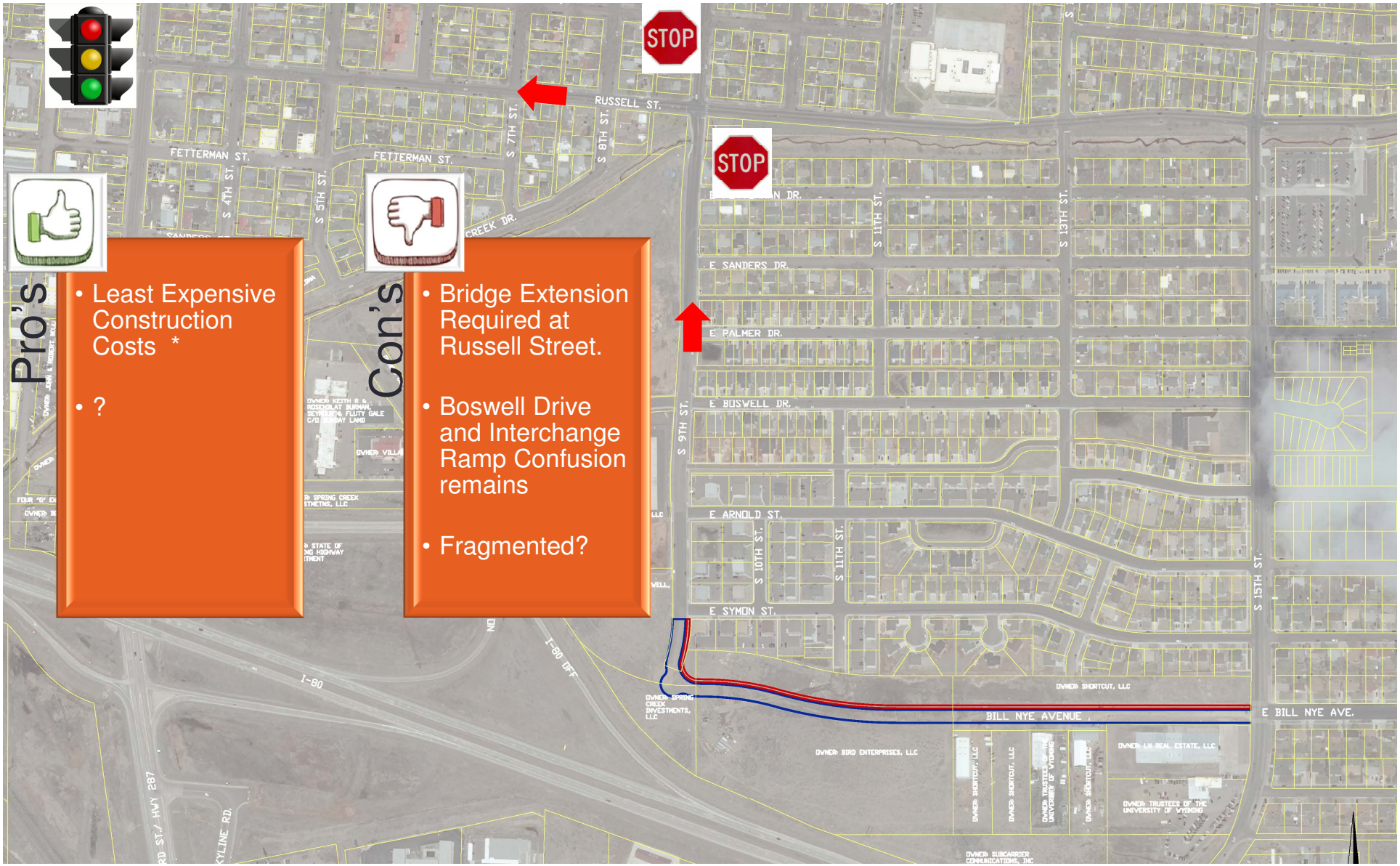
Other Ideas

- Indirect Left Turn parkway 3rd Street
- Grade Separated Interchange for WBL On-ramp
- Large Roundabout under Overpass Structure/ reconfigure ramps

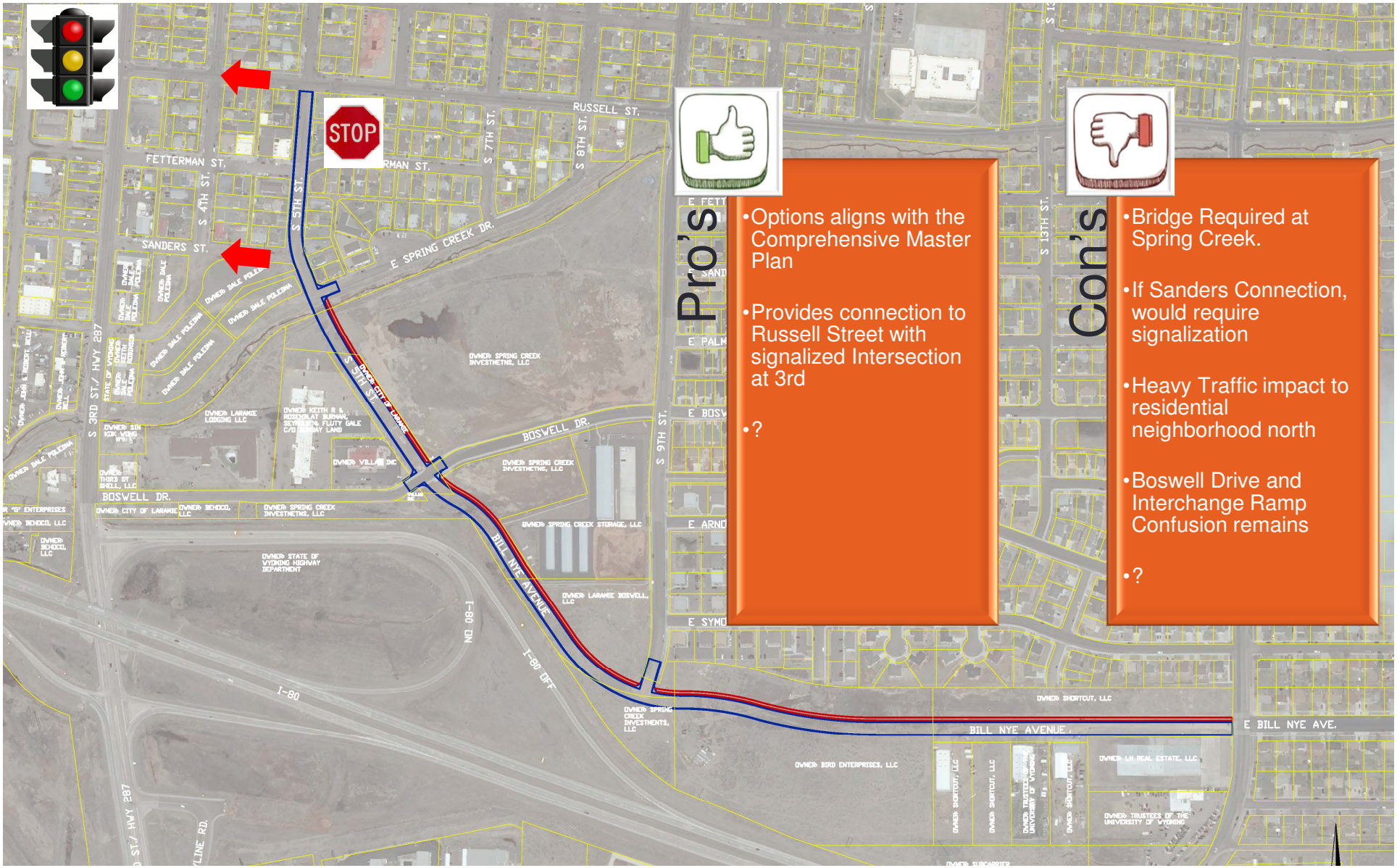
Possible Alternatives for Public Meeting

- 9th Street Connection
  - Bill Nye Avenue to 9th Street to Russell Street
- 5th Street Connection
  - Bill Nye Avenue to 5th Street to Russell Street
- Bill Nye Realignment
  - Bill Nye Avenue to 3rd Street
- RAB Bill Nye Avenue at Boswell
  - RAB Bill Nye Avenue at Boswell Avenue

9th Street Connection



5th Street Connection

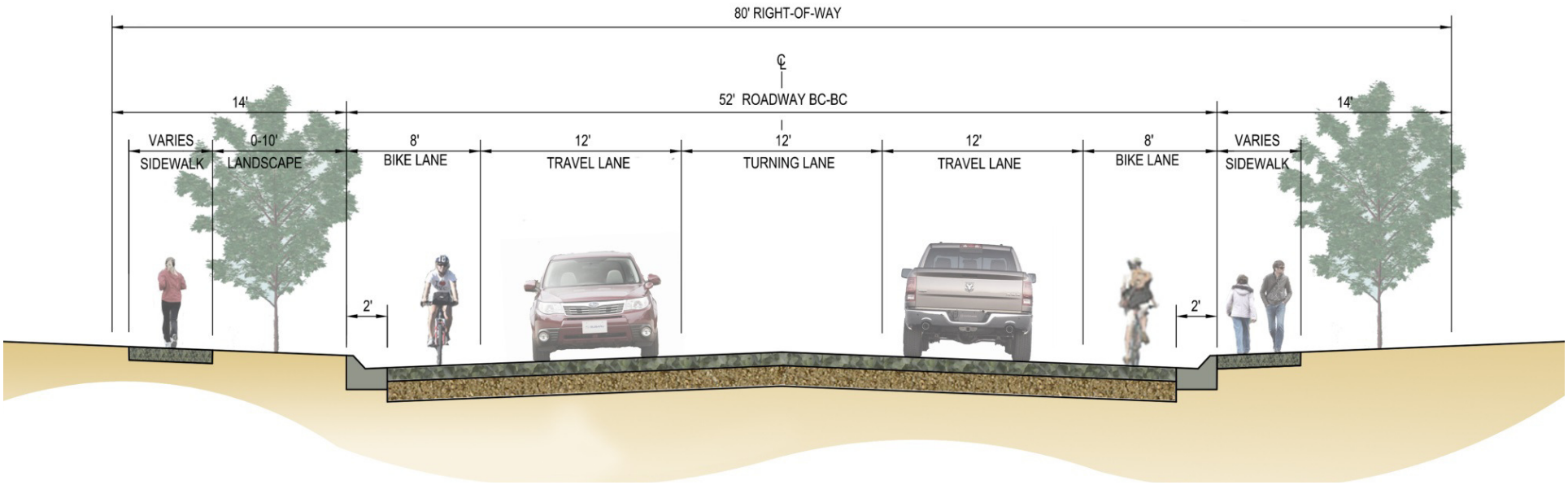


Bill Nye Realignment

RAB Boswell Combined w/ WBL Off Ramp and EBL On Ramp

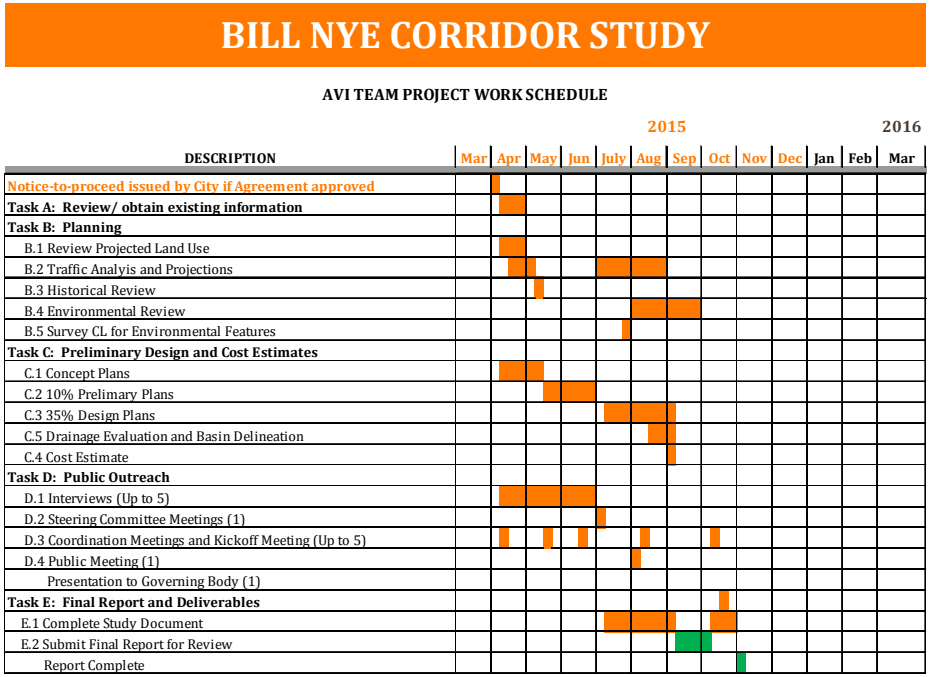
Other Brainstorm Ideas

Conceptual Typical Section?



Where do we go from here?

- Refine Options
- Conduct Environmental Review
- Set Tentative Date for Steering Committee Meeting #2
- Set Tentative Date for Public Meeting (1)



BILL NYE AVENUE CORRIDOR STUDY KICK OFF MEETING

SEPTEMBER 22, 2015 @10:00 A.M.

•LIST OF ATTENDEES •

ENGINEERING
PLANNING
SURVEYING
PC

NAME	COMPANY	EMAIL	PHONE/ CELL
Tom Cobb	AVI	cobb@avipc.com	970-214-6542
Jake Wilson	AVI	jwilson@avipc.com	719-684-5139
MARK WINGATE	WYDOT	mark.wingate@wyo.gov	777-4180
Eric Jaap	COL	ejaap@cityoflaramie.org	721-5341
PHIL PRATT	FHWA	philip.pratt@dot.gov	771-2951
RANDY GRIESBACH	WYDOT	randy.griesbach@wyo.gov	745-2116 760-4103
EARL SMITH	CoL	ESMITH@CITYOFCHEYENNE.OR	721-5241
Jeff Purdy	FHWA	Jeffrey.Purdy@dot.gov	771-2942
Charles Bloom	COL.	cbloom@	
Jake Wilson	AVI	jwilson@avipc.com	

BILL NYE AVENUE CORRIDOR STUDY

Steering Committee Meeting

September [illegible], 2015

LARAMIE

STS

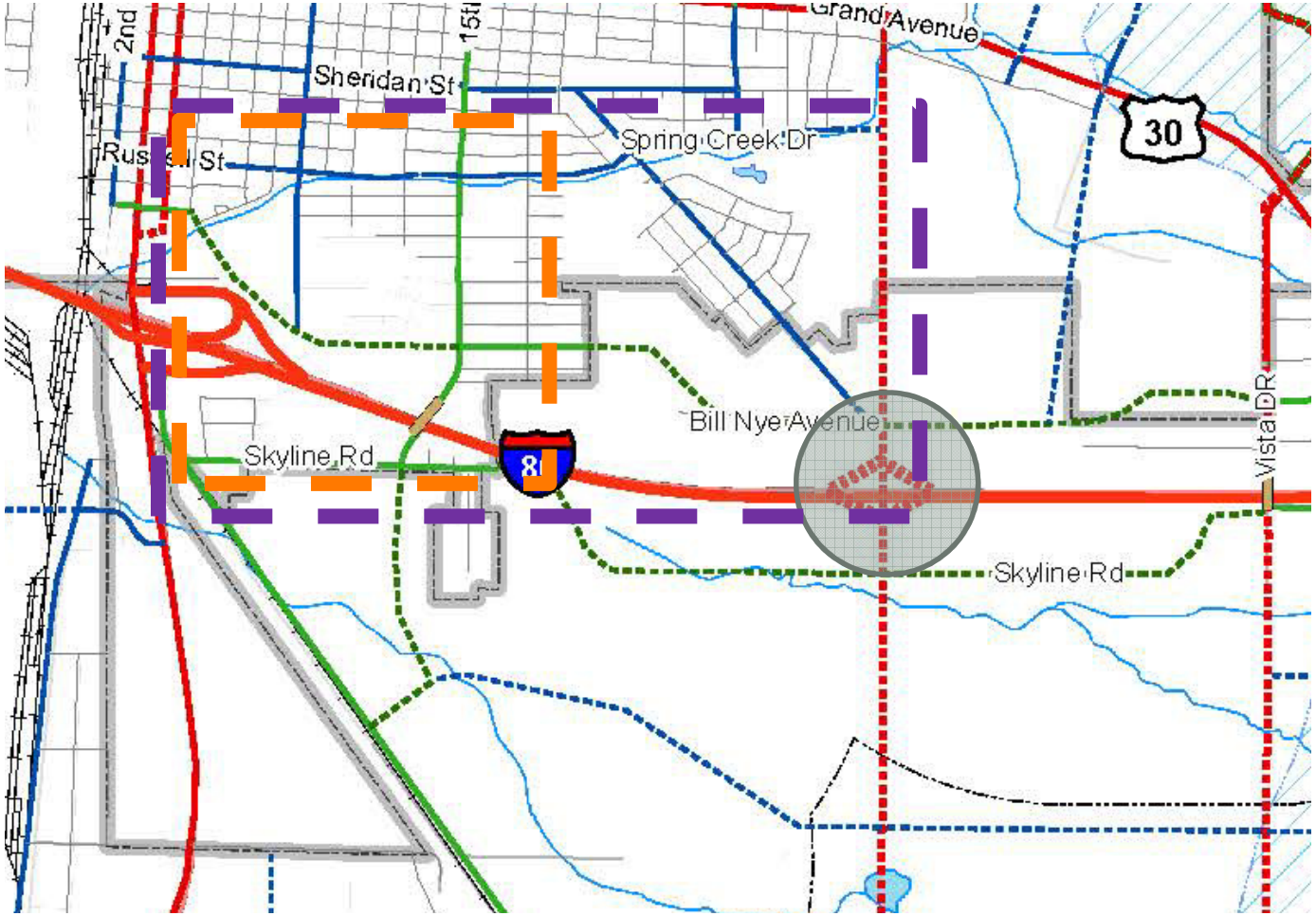
ENGINEERING
PLANNING
SURVEYING
PC

Agenda

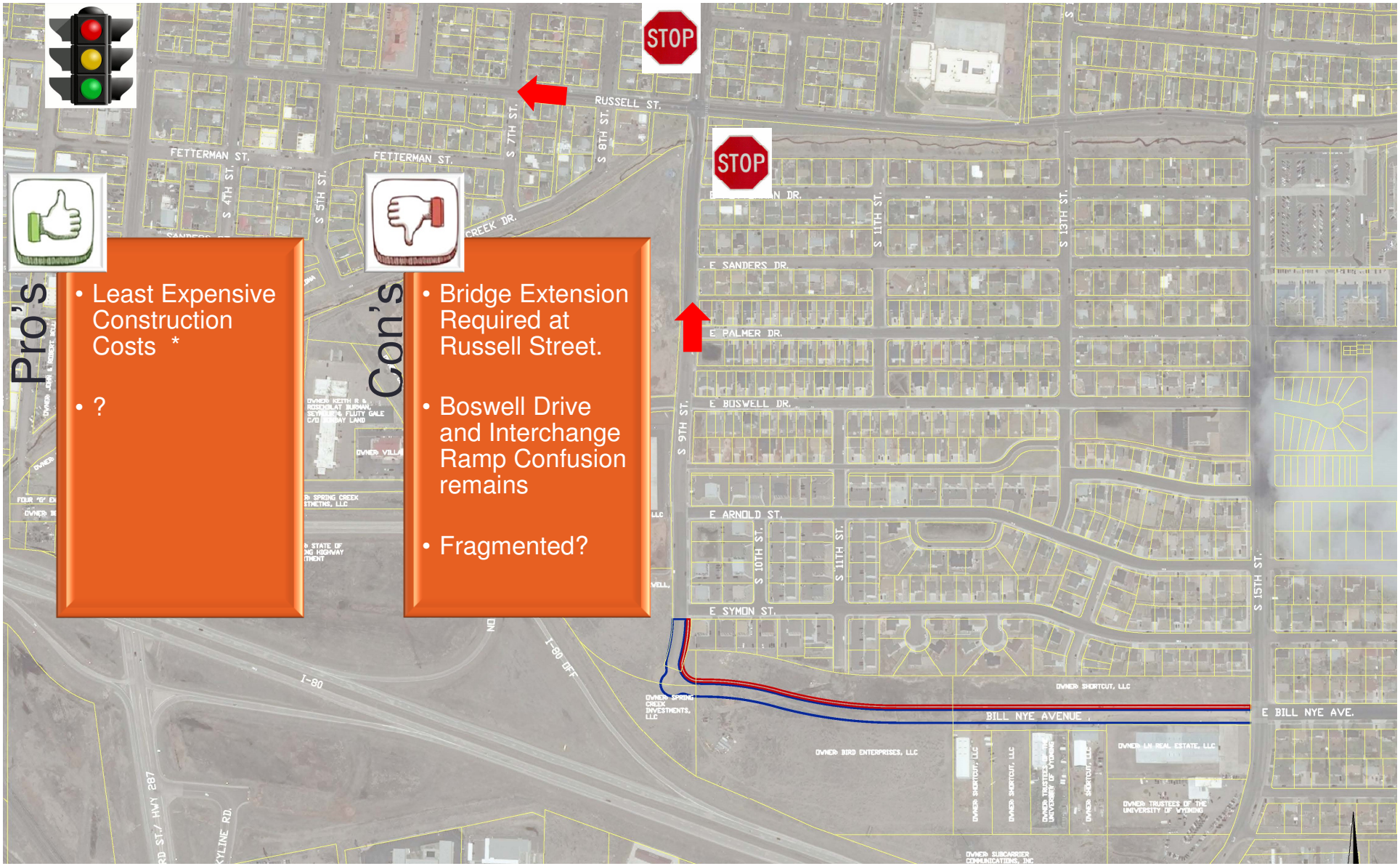
- Administrative
  - Data Needs
- Previous Alternatives
- Revised Proposed Alternatives
- Conceptual Typical Section
- Public Meeting
  - Logistics and Action Items
- Other
  - Set Next Steering Committee Meeting Date

Administrative

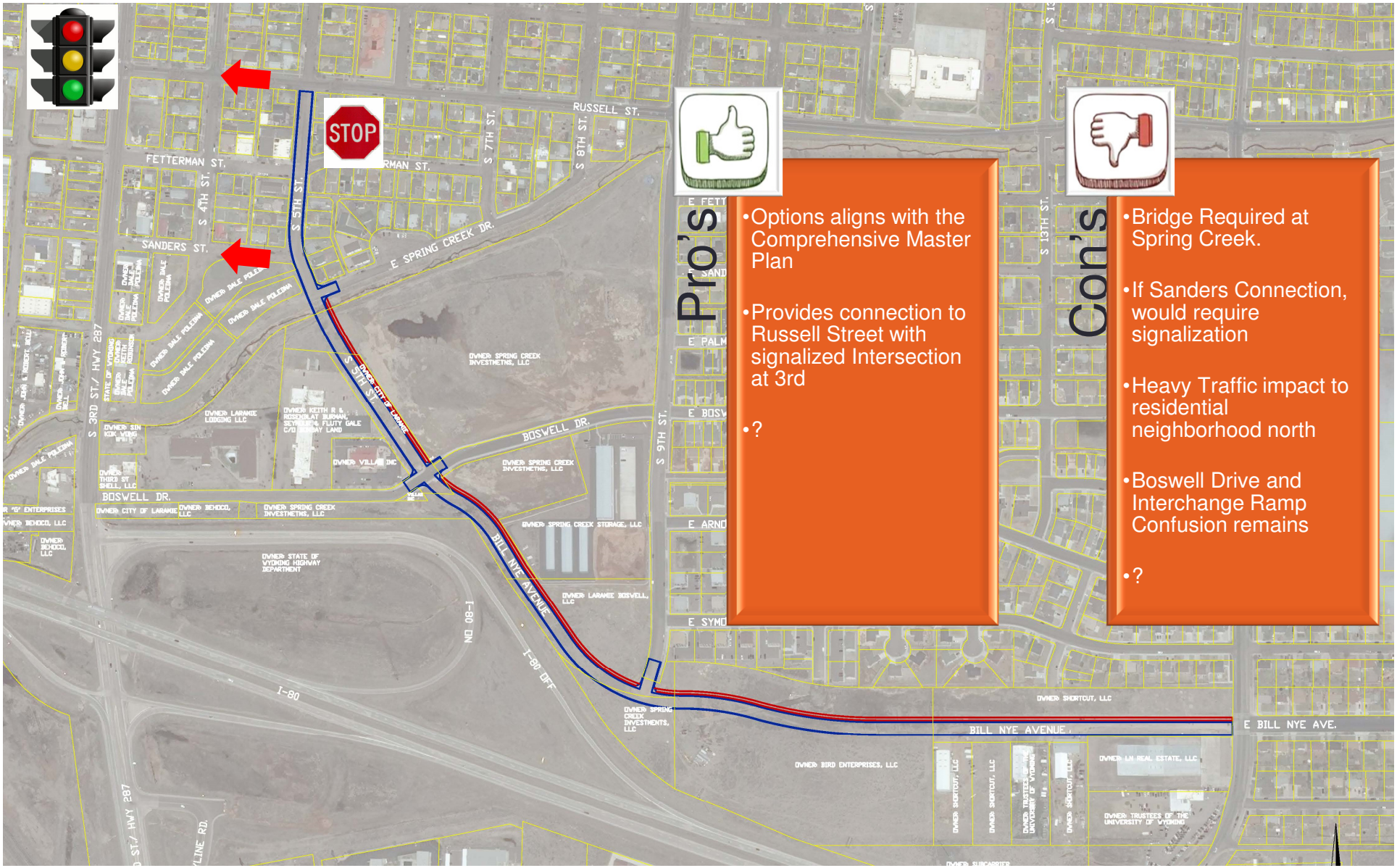
- Data Needs
  - Land Use Map in DXF Boundaries
    - **North:** Russell
    - **South:** I-80
    - **West:** 3rd Street
    - **East:**
      - If 30th Street Interchange
        - < 20 years: 15th Street or,
        - > 20 years: 30th Street



9th Street Connection



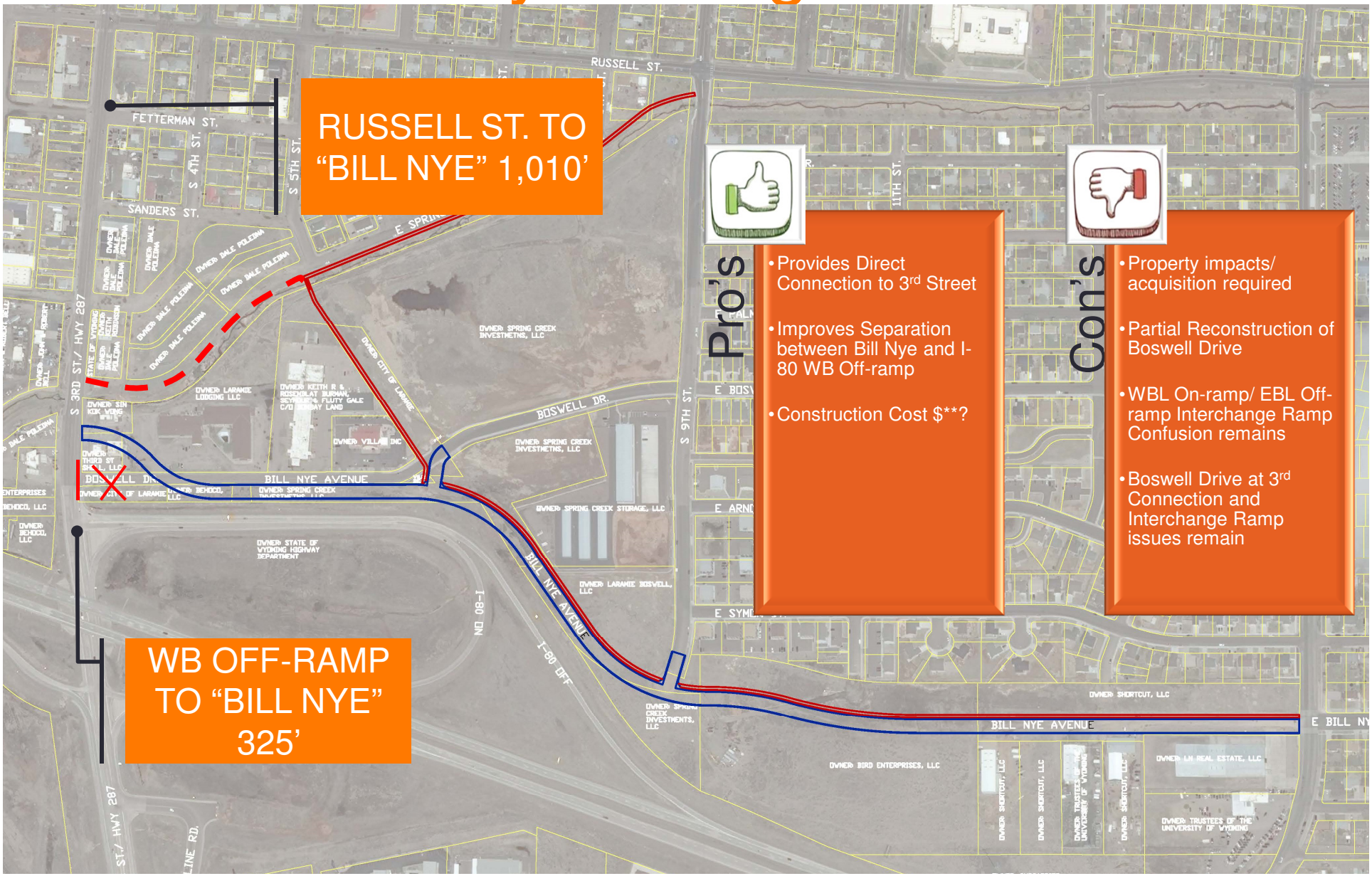
5th Street Connection



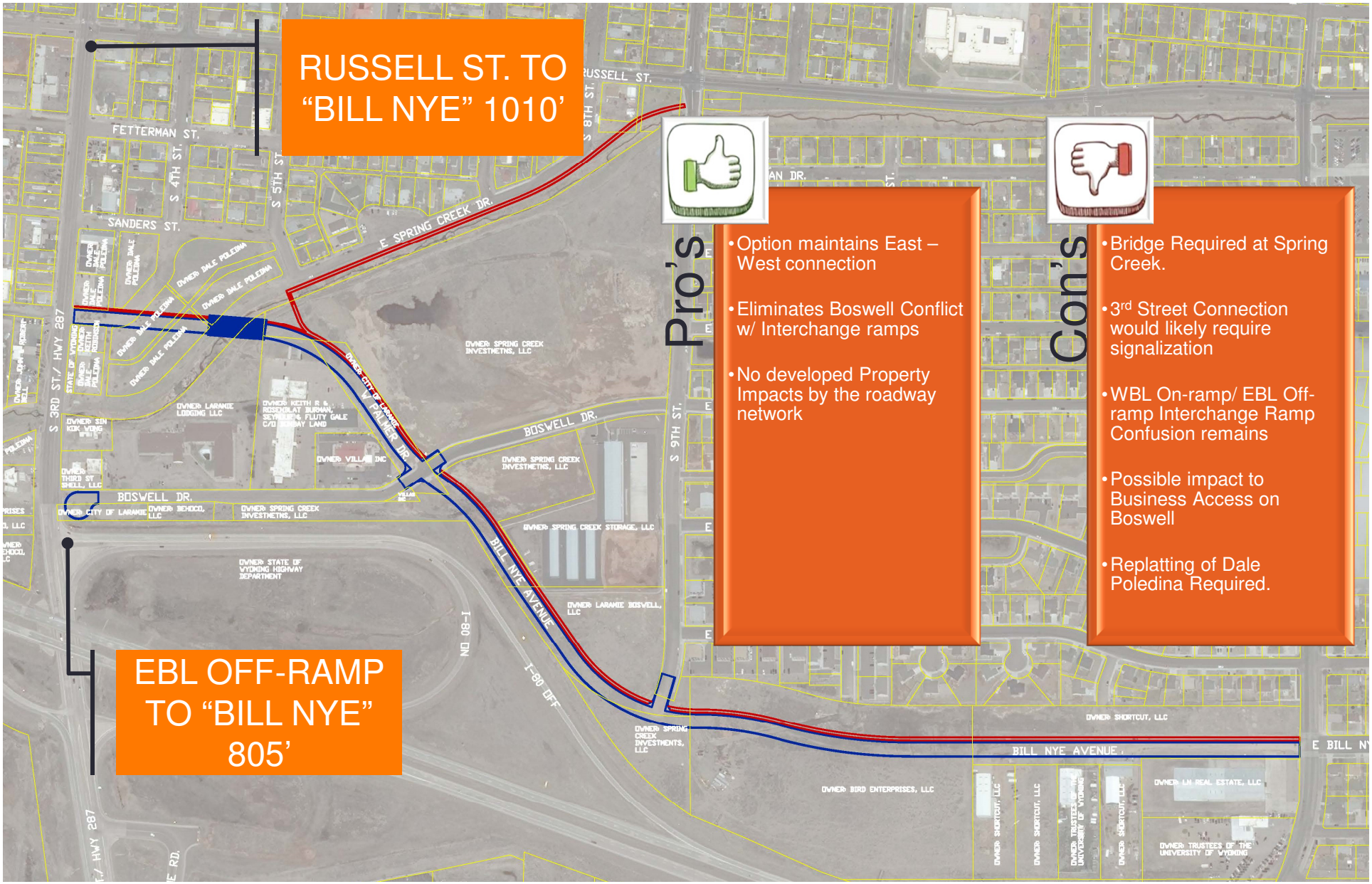
Bill Nye Realignment

RAB Boswell Combined w/ WBL Off Ramp and EBL On Ramp

Revised Bill Nye Realignment



E. Palmer Drive w/ Cul-de-sac Boswell



RAB Boswell Combined w/ WBL Off Ramp and EBL On Ramp

Pro's

- Segregates Commercial and Residential Traffic
- Eliminates WBL On-ramp/ EBL Off -ramp confusion
- Eliminates Boswell Drive and WBL On-ramp/ EBL Off -ramp confusion
- Provides redevelopment Potential

Con's

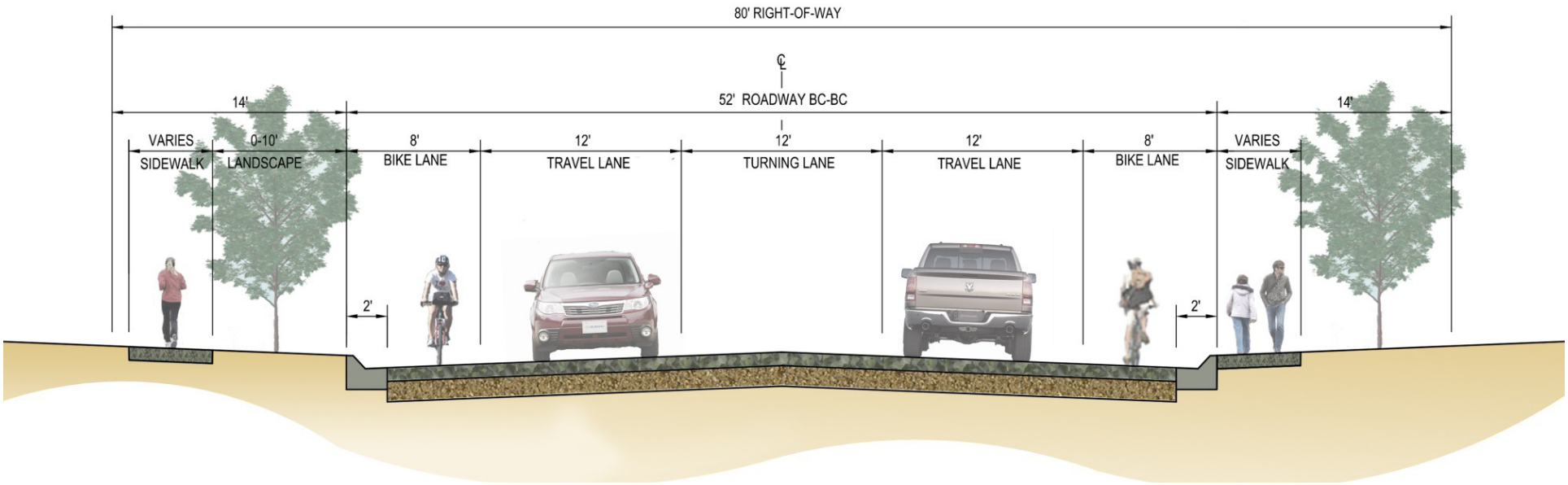
- Construction Alternative $****
- Partial Reconstruction of Boswell Drive
- Requires Access Control on West Leg of Boswell Drive (Jurisdictional Change)
- Need to provide additional documentation modification improves operation of interstate to FHWA

Other Ideas?

RUSSELL ST.
FETTERMAN ST.
FETTERMAN ST.
S 4TH ST.
S 5TH ST.
S 7TH ST.
S 8TH ST.
SANDERS ST.
E SPRING CREEK DR.
S 3RD ST./ HWY 287
BOSWELL DR. TO 3RD STREET
E FETTERMAN DR.
S 11TH ST.
S 13TH ST.
E SANDERS DR.
E PALMER DR.
E BOSWELL DR.
S 9TH ST.
E ARNOLD ST.
S 10TH
S 11TH ST.
S 15TH ST.
E SYMON ST.
I-80 ON
I-80 OFF
I-80
BILL NYE AVENUE
E BILL NYE AVE.
S 3RD ST./ HWY 287
SKYLINE RD.

Description	City of Laramie	Other
	Arterial	Principal Arterial
Number of Lanes (Width)	2(12')	4-6 (12')
Design Speed		50 mph
Design Vehicle	-	WB-67
Parking	none	none
Roadway Width (BC-BC)	68' – 9"	76'
Sidewalk/ Pedestrian Area	5'	6'
Parkway/ Tree Lawn	10'-71/2"	8'
Shoulder		6'
Daily Traffic Volume (VPD)		15,000 – 32,000 4-Lane

Conceptual Typical Section?



Public Meeting

- October 22, 2015 at Albany County Library
- 5:00 p.m. to 7:00 p.m. with Presentation at 5:15 p.m.
- Action Items:
  - Reserve Library
  - Advertisement
    - Newspaper
    - Post Card?
    - Other
    - Comment Card

Other

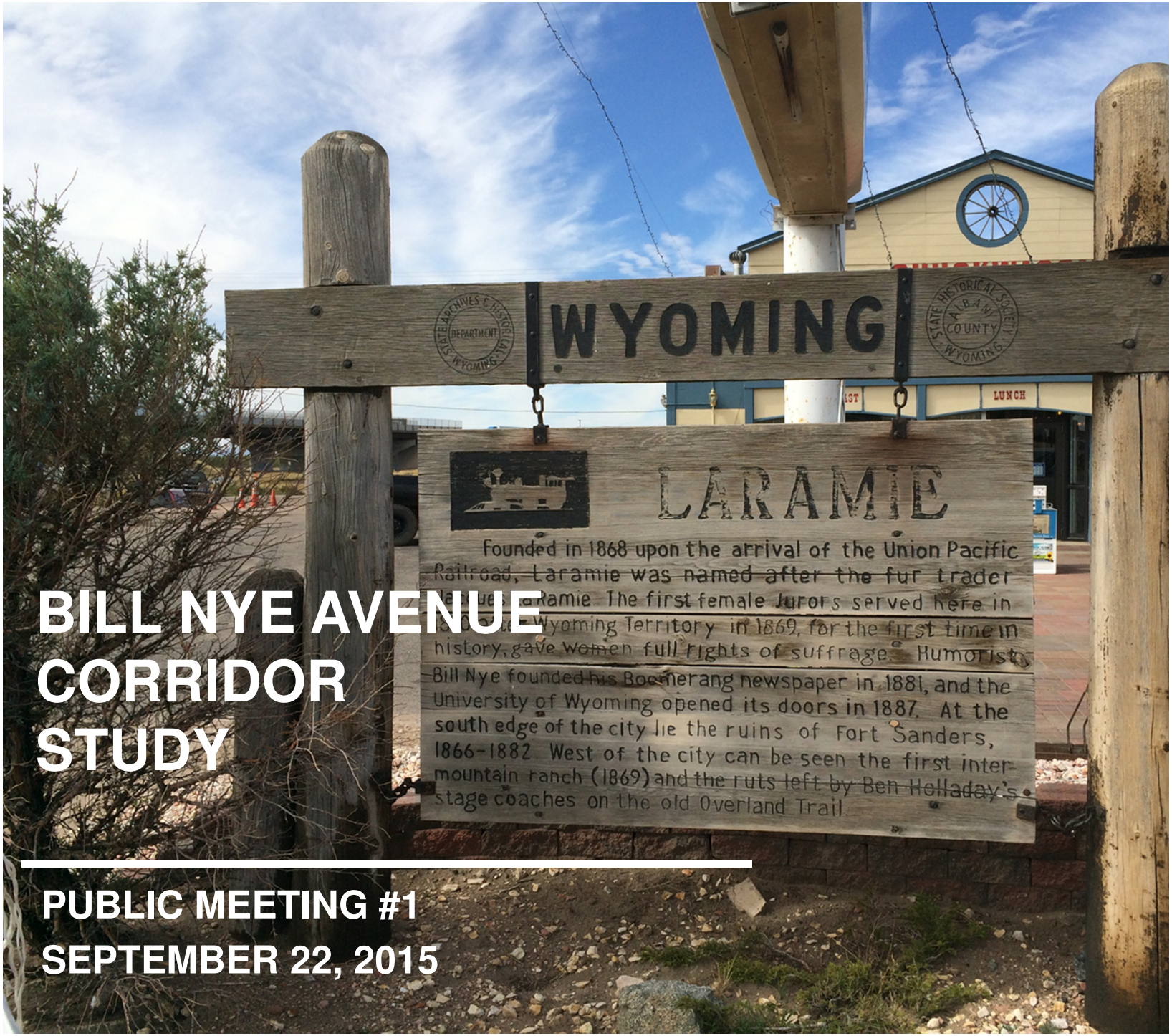
- Next Meeting of Steering Committee?
- Monday, October 19, 2015, 10:00 a.m. ?
  - Presentation for Public Meeting
  - Comment Card
  - Final Exhibits

BILL NYE AVENUE CORRIDOR STUDY KICK OFF MEETING

October 19, 2015 @10:00 A.M.

•LIST OF ATTENDEES •

NAME	COMPANY	EMAIL	PHONE/ CELL
Tom Cobb	AVI	cobb@avipc.com	307.637.6017
Brad Emmons	AVI	Emmons@avip.com	307.637.6017
Jeff Purdy	FHWA	Jeffrey.Purdy@dot.gov	307-771-2942
EARL SMITH	C.L	ESMITH@CITYOFLARAMIE.ORG	307-721-5241
PAT PERSSON	WYDOT	pat.persson@wyo.gov	307 745 2100
Eric Jaap	COL	ejaap@cityoflaramie.org	307-721-5345
Kevin McCoy	WYDOT	Kevin.McCoy@wyo.gov	307-777-4178
PHIL PRATT	FHWA	philip.pratt@dot.gov	307-771-2951
Tom Dethoff	WYDOT	tom.dethoff@wyo.gov	745-2100
Randy Hunt	COL	rhunt@cityoflaramie.org	721-5288
Charles Bloom	CVL	"	"



BILL NYE AVENUE CORRIDOR STUDY

PUBLIC MEETING #1

SEPTEMBER 22, 2015

LARAMIE 1868

STS

ENGINEERING
PLANNING
SURVEYING
PC

Agenda

- Introductions
- Study Area
- Goals and Objectives
- Project Schedule
- Identified Constraints
- Proposed Conceptual Alternatives
- Proposed Roadway Typical Section
- Adjourn to Workshop Areas

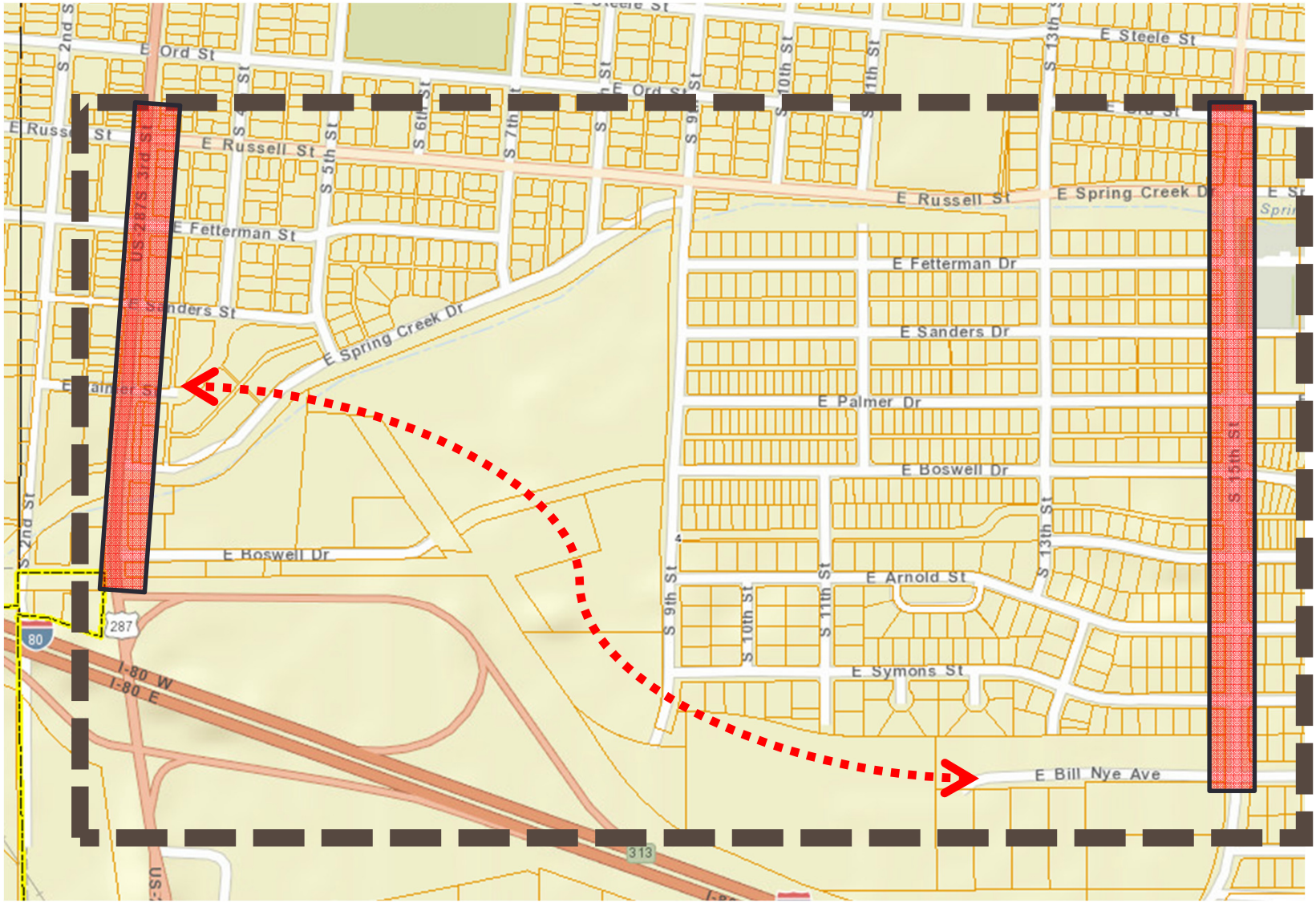
Introductions

Tom Cobb, P.E.
Project Manager

Brad Emmons, A.I.C.P.
Principal-in-charge
Planning

Jake Wilson, P.E.
Engineer

Study Area


E Ord St
E Steele St
E Russell St
E Fetterman St
E Sanders St
E Spring Creek Dr
E Palmer St
E Boswell Dr
E Arnold St
E Symons St
E Bill Nye Ave
E Fetterman Dr
E Sanders Dr
E Palmer Dr
E Boswell Dr
E Russell St
E Spring Creek Dr
S 2nd St
S 5th St
S 6th St
S 7th St
S 9th St
S 10th St
S 11th St
S 13th St
S 15th St
US 287 S 3rd St
80
287
I-80 W
I-80 E
313

Purpose, Objective, and Goals

- **Purpose**
  - Create a comprehensive and practical planning document that guides and promotes future development of the corridor and surrounding area.
- **Objective**
  - Develop a realistic preferred alignment for Bill Nye Avenue between 3rd Street and 15th Street.
- **Goals**
  - Promotes safety
  - Minimizes long term maintenance
  - Sensitive to current function and property owners
  - Serves all transportation users
  - Encourages economic development

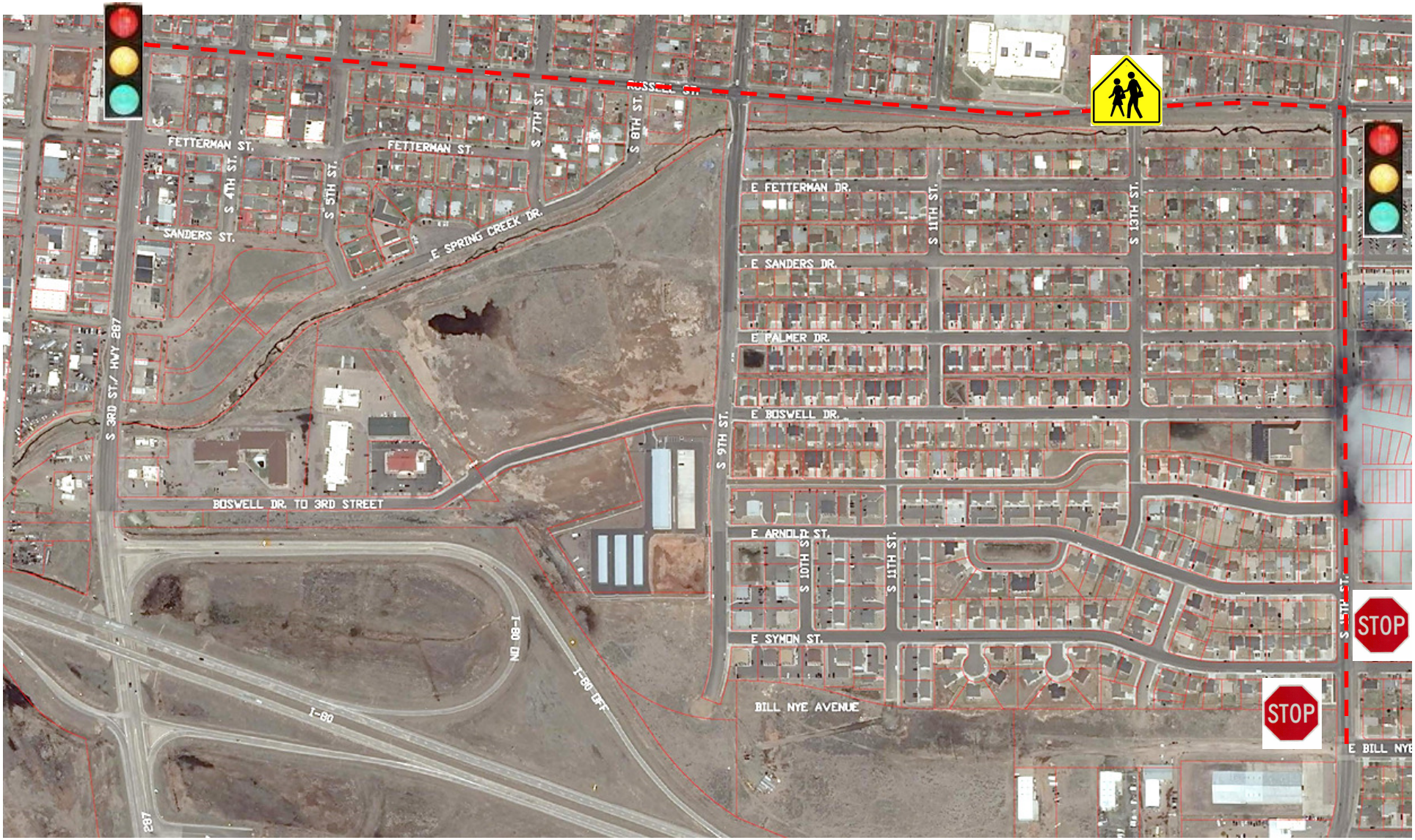
Project Schedule

Activity	Tentative Schedule
Notice to proceed and Kick-off Meeting	Begin Project, June 9, 2015
Adjacent Stakeholder Meeting(s)	July 2, 2015
Meeting w/ FHWA	July 9, 2015
Develop Preliminary Alternatives	July – August, 2015
Steering Committee Meetings	August 24, September 22, and October 19, 2015
First Public Meeting	**October 20, 2015**
Refine Alternatives	November, 2015
Complete Draft Plan	November – December, 2015
Submit Draft Plan City of Laramie	**January, 2016**
Revise Draft Plan	**February, 2016**
Presentation to Governing Body	**March, 2016**

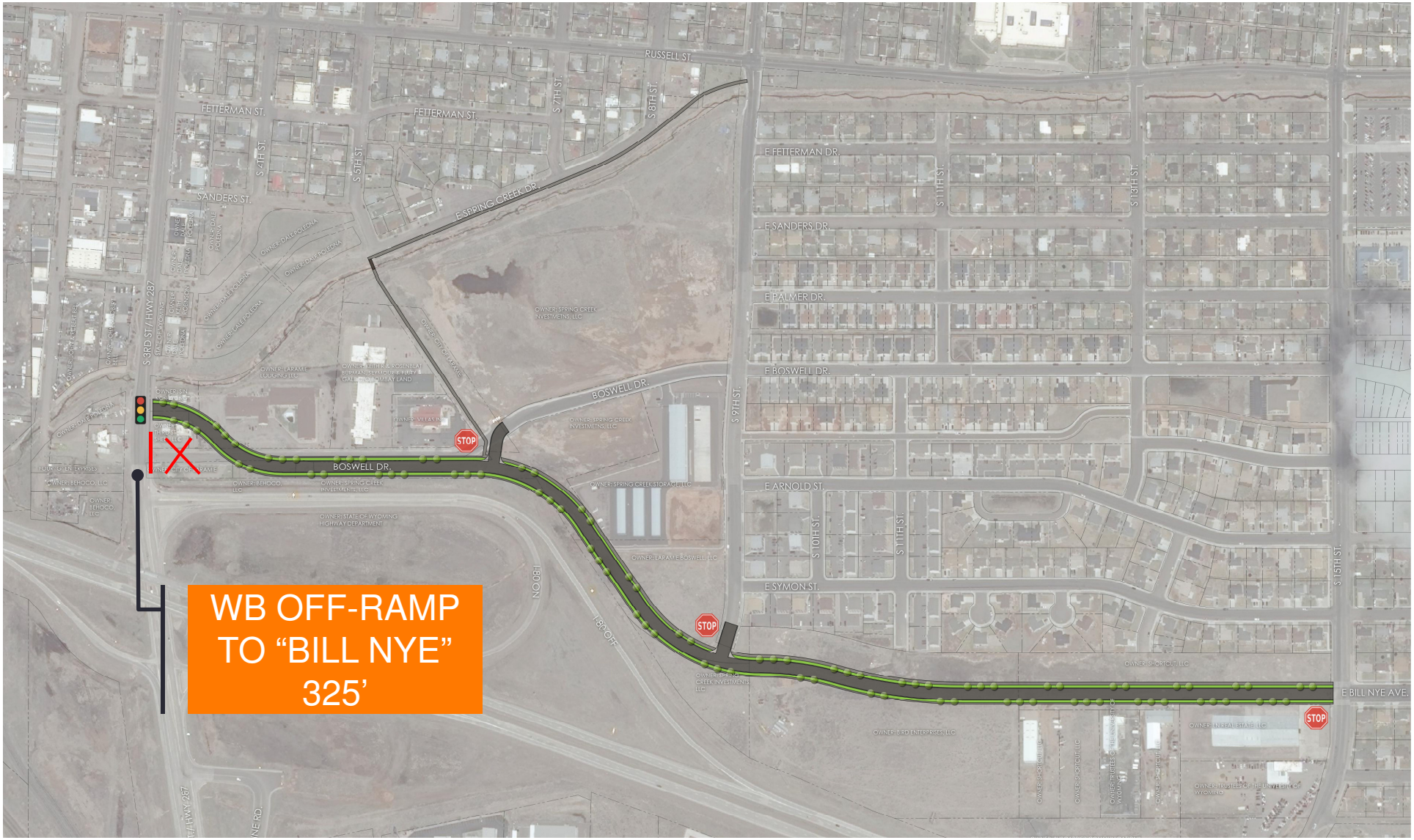
Identified Constraints

- **Purpose**
  - Create a comprehensive and practical planning document that guides and promotes future development of the corridor and surrounding area.
- **Objective**
  - Develop a realistic preferred alignment for Bill Nye Avenue between 3rd Street and 15th Street.
- **Goals**
  - Promotes safety
  - Minimizes long term maintenance
  - Sensitive to current function and property owners
  - Serves all transportation users
  - Encourages economic development

Do Nothing – Utilize 15th Street



Revised Bill Nye Realignment

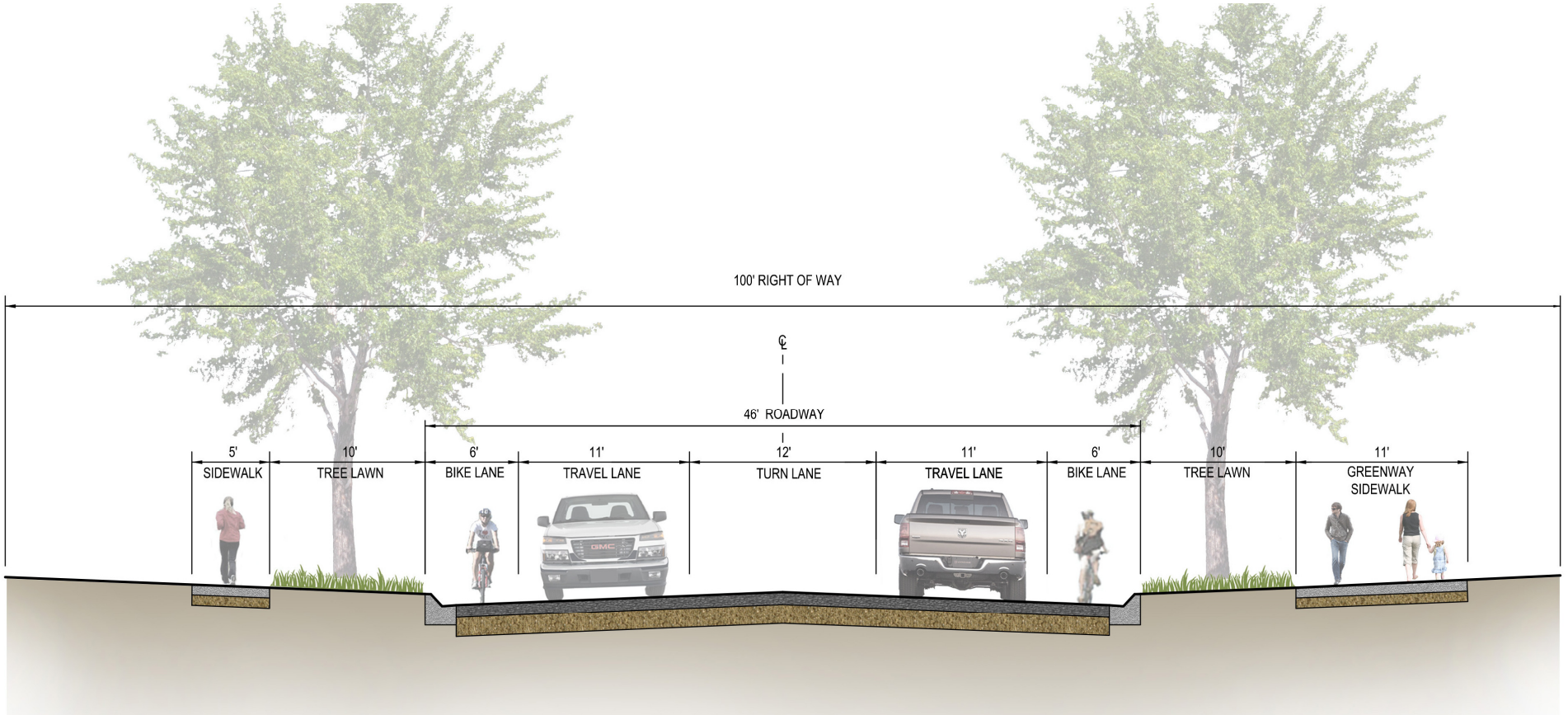


E. Palmer Drive w/ Cul-de-sac Boswell

RAB at 3rd/ Boswell/ I-80 WB Ramps

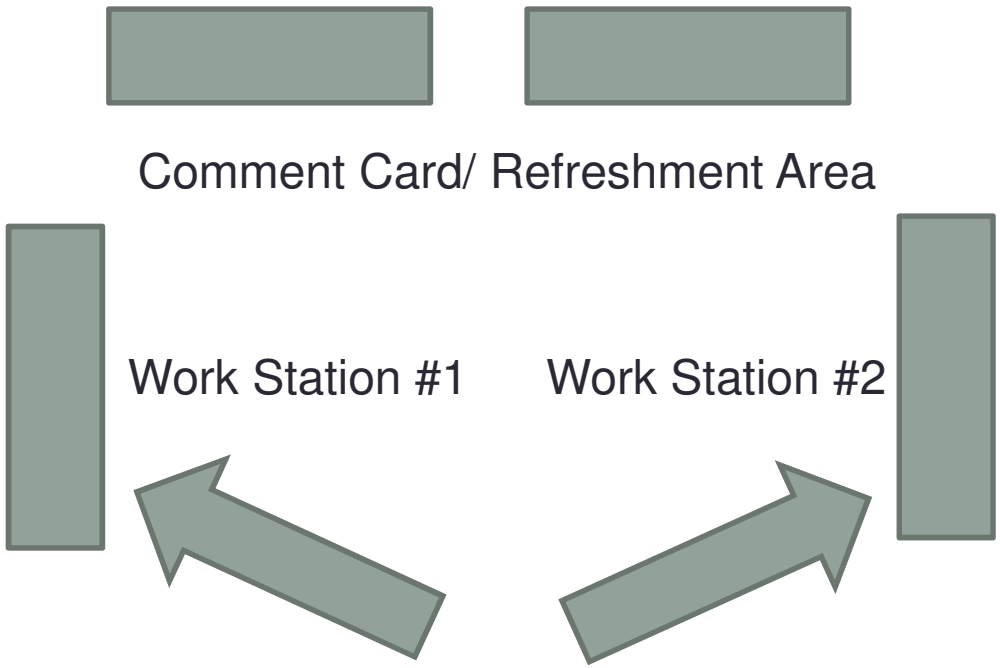
RAB at 3rd/ Boswell/ I-80 WB Ramps

Conceptual Typical Section



Work Station Areas

- Two Identical Work Stations
  - **Tables**
    - Aerial photo with street views
- Comment Card/ Refreshment Area



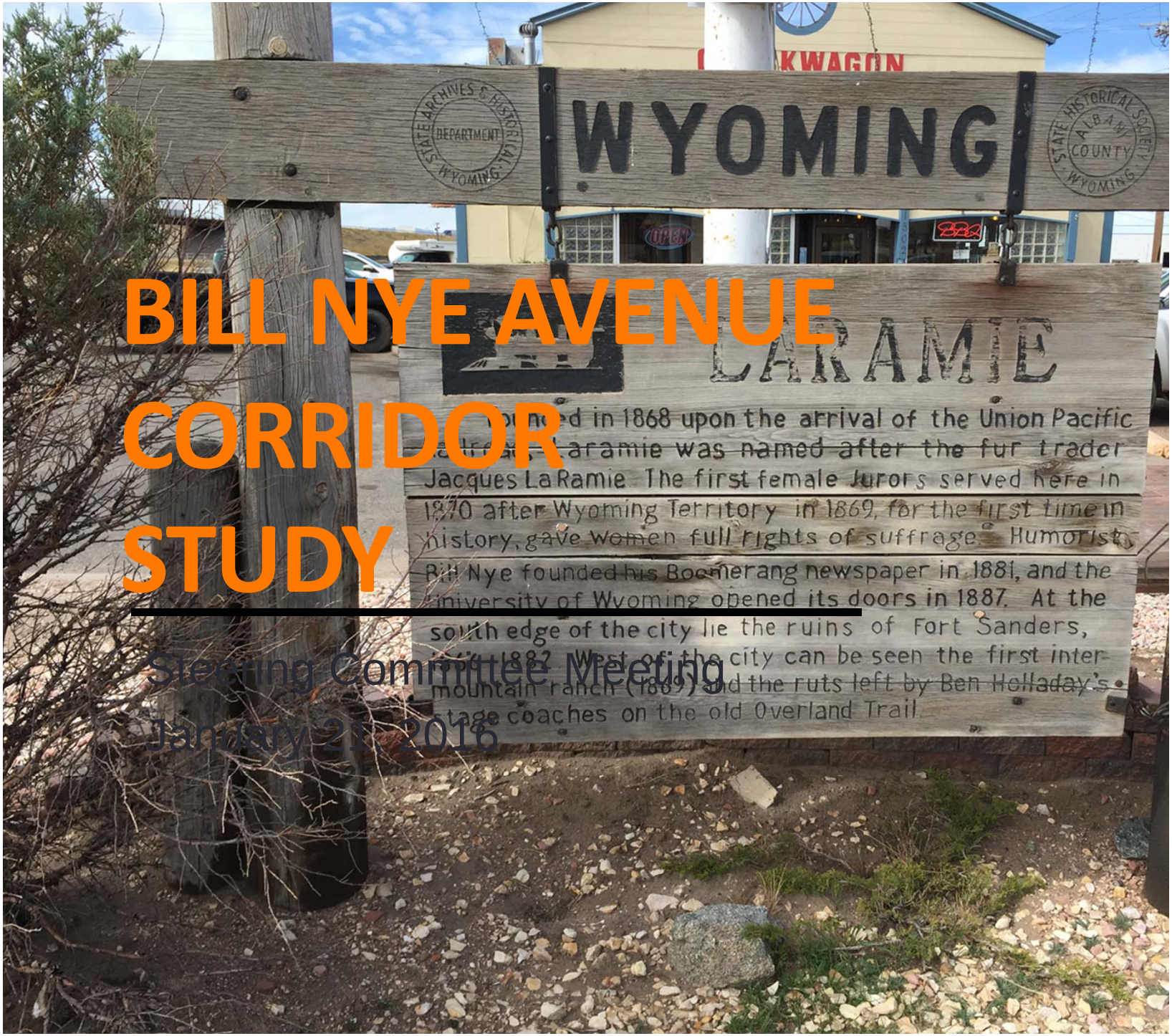
BILL NYE AVENUE CORRIDOR STUDY KICK OFF MEETING

January 21, 2015 @ 2:00 P.M.

• LIST OF ATTENDEES •

ENGINEERING
PLANNING
SURVEYING
PC

NAME	COMPANY	EMAIL	PHONE/ CELL
Tom Cobb	AVI	cobb@avipc.com	307.637.6017
Brad Emmons	AVI	Emmons@avip.com	307.637.6017
Randy Hunt	City of Laramie	rhunt@ cityoflaramie.org	307-721-5288
Charles Bloom	" "	cbloom@ " " "	721-5232
MARK WINGATE	WYDOT	mark.wingate@wyo.gov	307-777-4180
Eric Jaap	COL	ejaap@cityoflaramie.org	307-721-5345
EARL SMITH	COL	ESMITH@CITYOFLARAMIE.ORG	307-721-5241
Brad Emmons			



BILL NYE AVENUE CORRIDOR STUDY

Steering Committee Meeting

January 21, 2016

LARAMIE

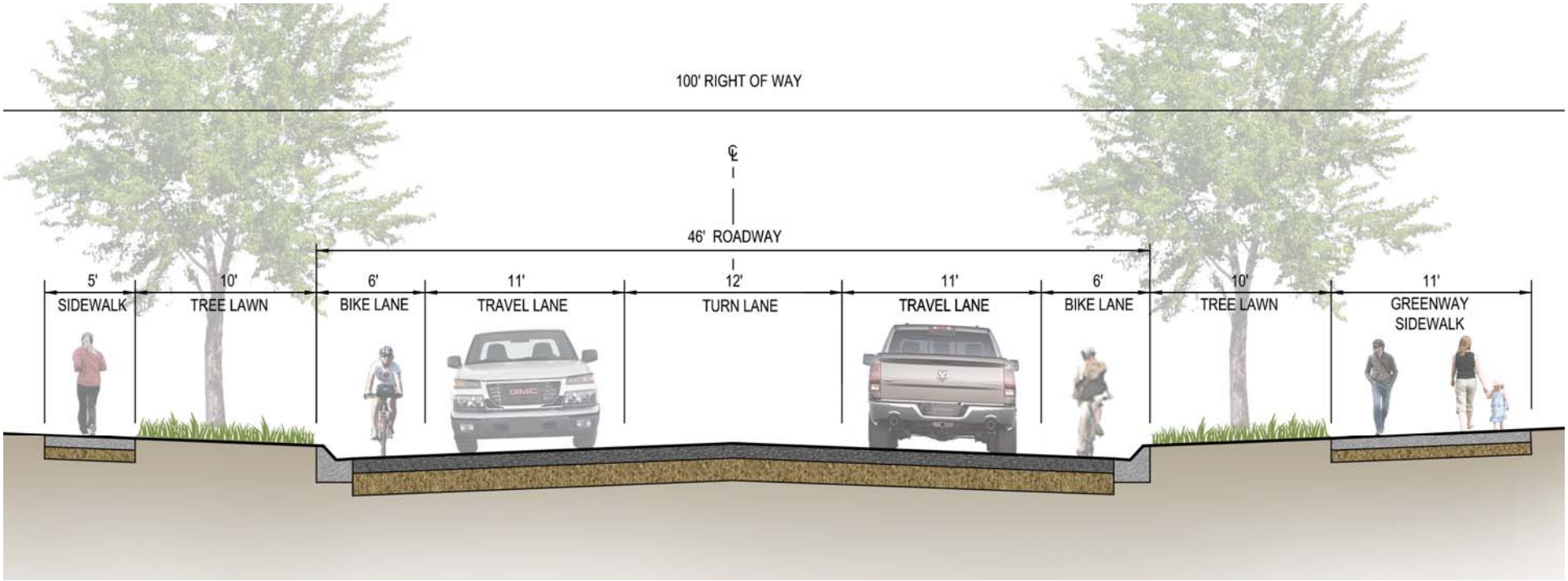
STS

ENGINEERING
PLANNING
SURVEYING
PC

Agenda

- Presentation Exhibits
- What we heard Public Meeting No. 1
- Discussion on recommendations
  - Conceptual Typical Section
  - Alignment Alternatives
- Where do we go from here?
- Other
  - Council Work Session Needs
  - Action Items?

Conceptual Typical Section



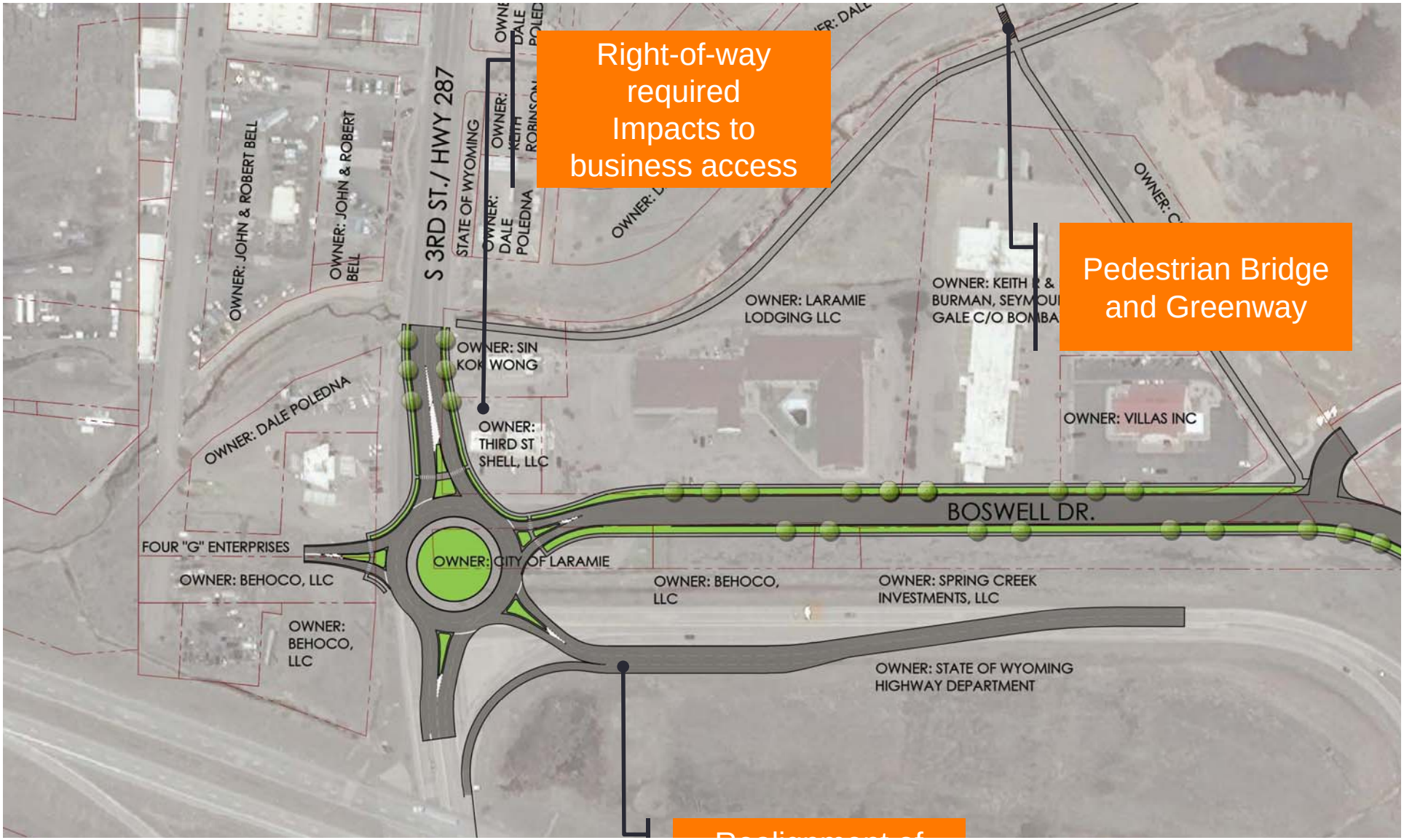
Do Nothing – Utilize 15th Street

Revised Bill Nye Realignment

E. Palmer Drive w/ Cul-de-sac Boswell

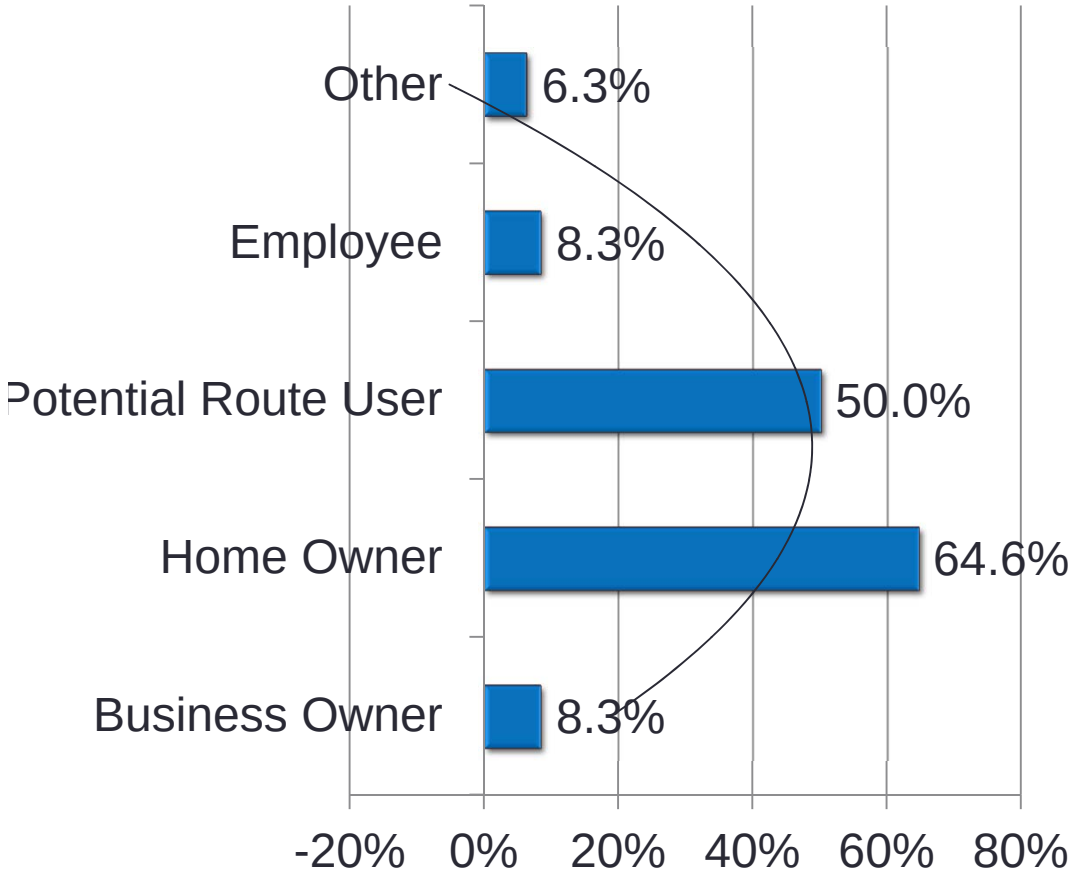
RAB at 3rd/ Boswell/ I-80 WB Ramps

RAB at 3rd/ Boswell/ I-80 WB Ramps



Public Meeting One: Summary

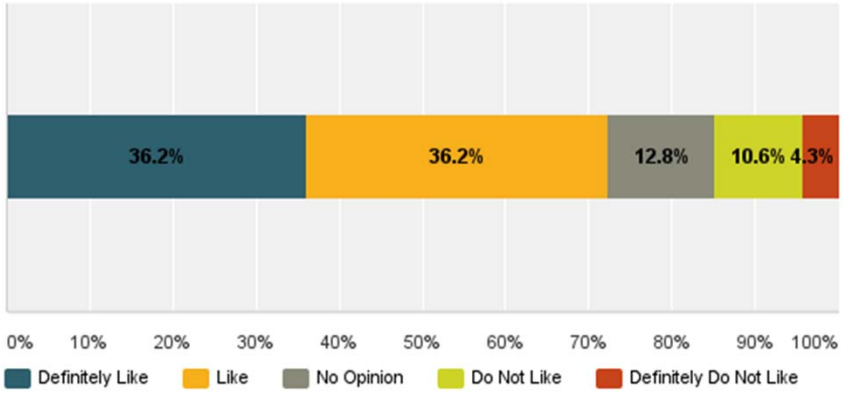
- Conducted October 21, 2015
- Approximately 25 participants
- 48 Comment Card Responses (192.0%)
- Who Attended?

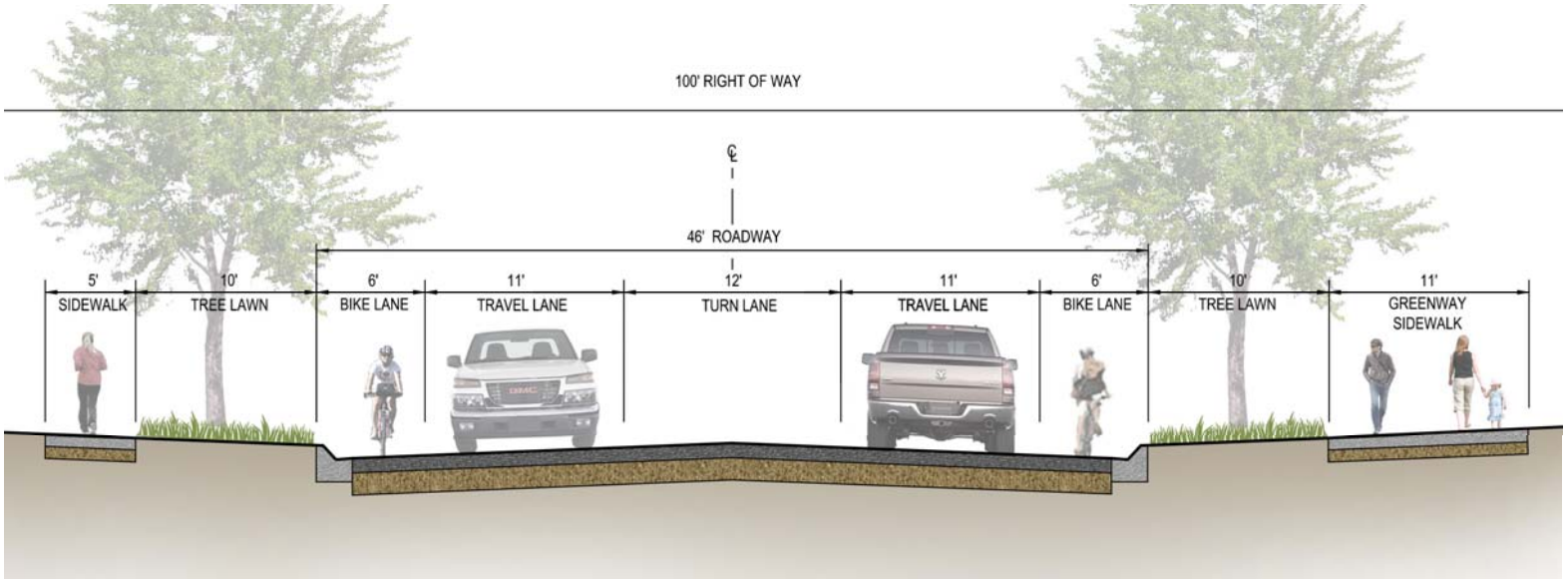


What we heard?

Q3 Please rate the Bill Nye Avenue Conceptual Typical Section shown above.

Answered: 47 Skipped: 1





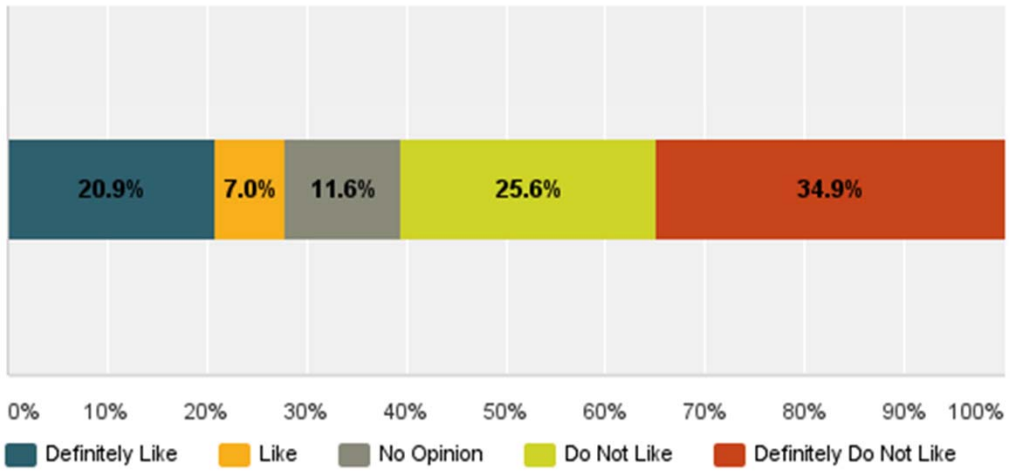
Do Nothing – Utilize 15th Street

Spring Creek Elementary Pedestrian ing at 13th Street

sidential nborhood

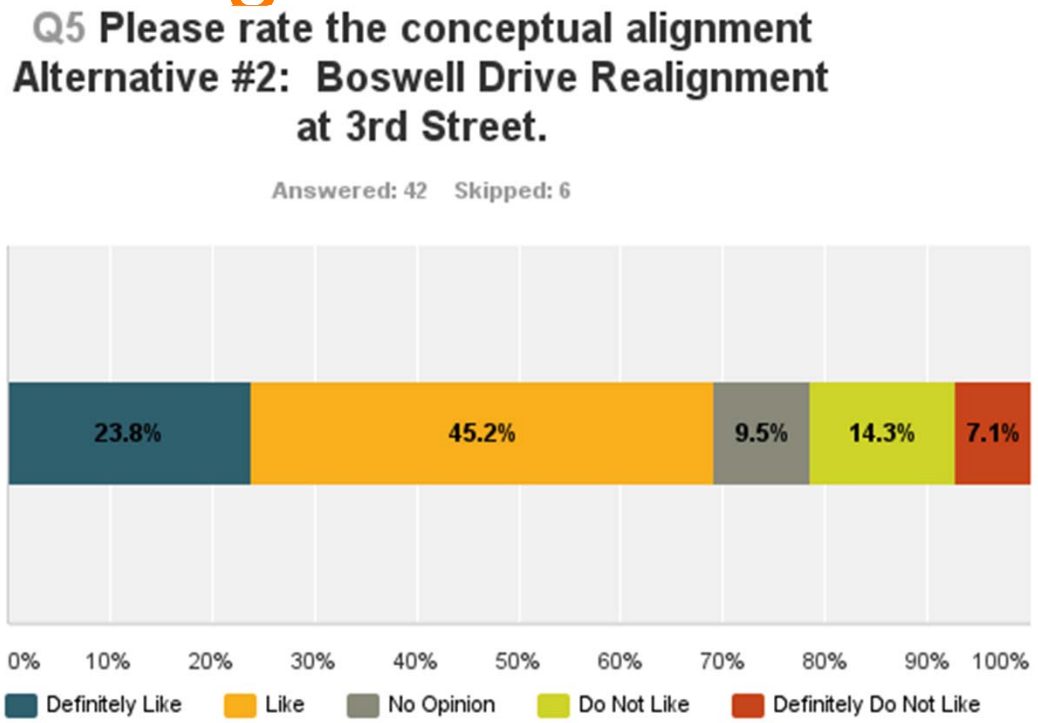
Q4 Please rate the conceptual alignment Alternative #1: "Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Road shown above.

Answered: 43 Skipped: 5



Revised Boswell Realignment

Right-of-way required Impacts to business



WB Off-Ramp to Bill Nye 325’

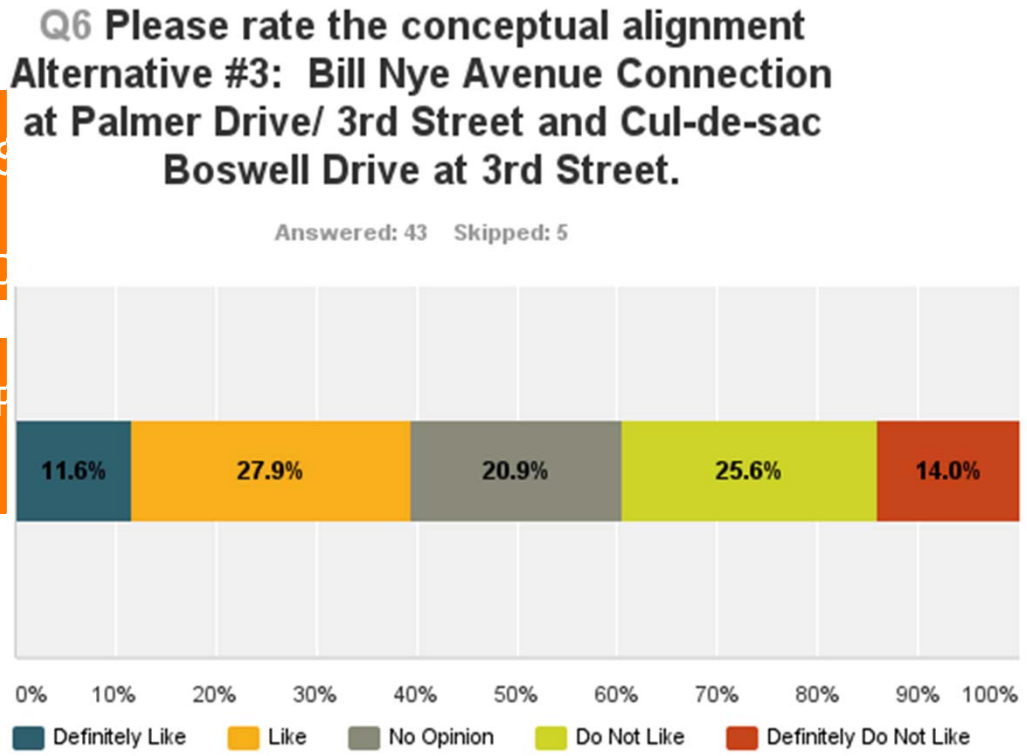
Right-of-way Required

E. Palmer Drive w/ Cul-de-sac Boswell

Right-of-way required

Cul-de-sac Bowell Drive at 3rd Street

Right-of-way required



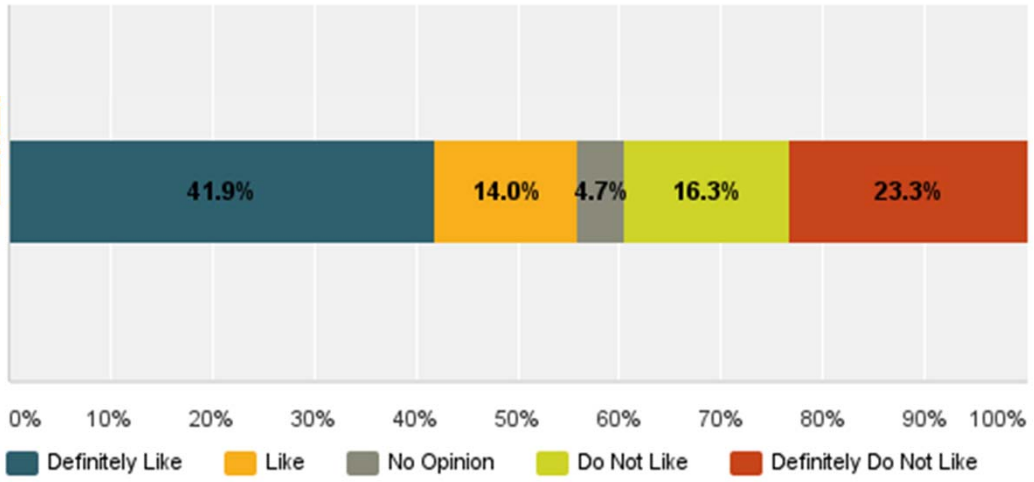
RAB at 3rd/ Boswell/ I-80 WB Ramps

Right-of-way required
Impacts to business access

Pe
a

Q7 Please rate the conceptual alignment Alternative #4: Roundabout at 3rd Street, Boswell Drive, and Westbound I-80 Off and On-ramps.

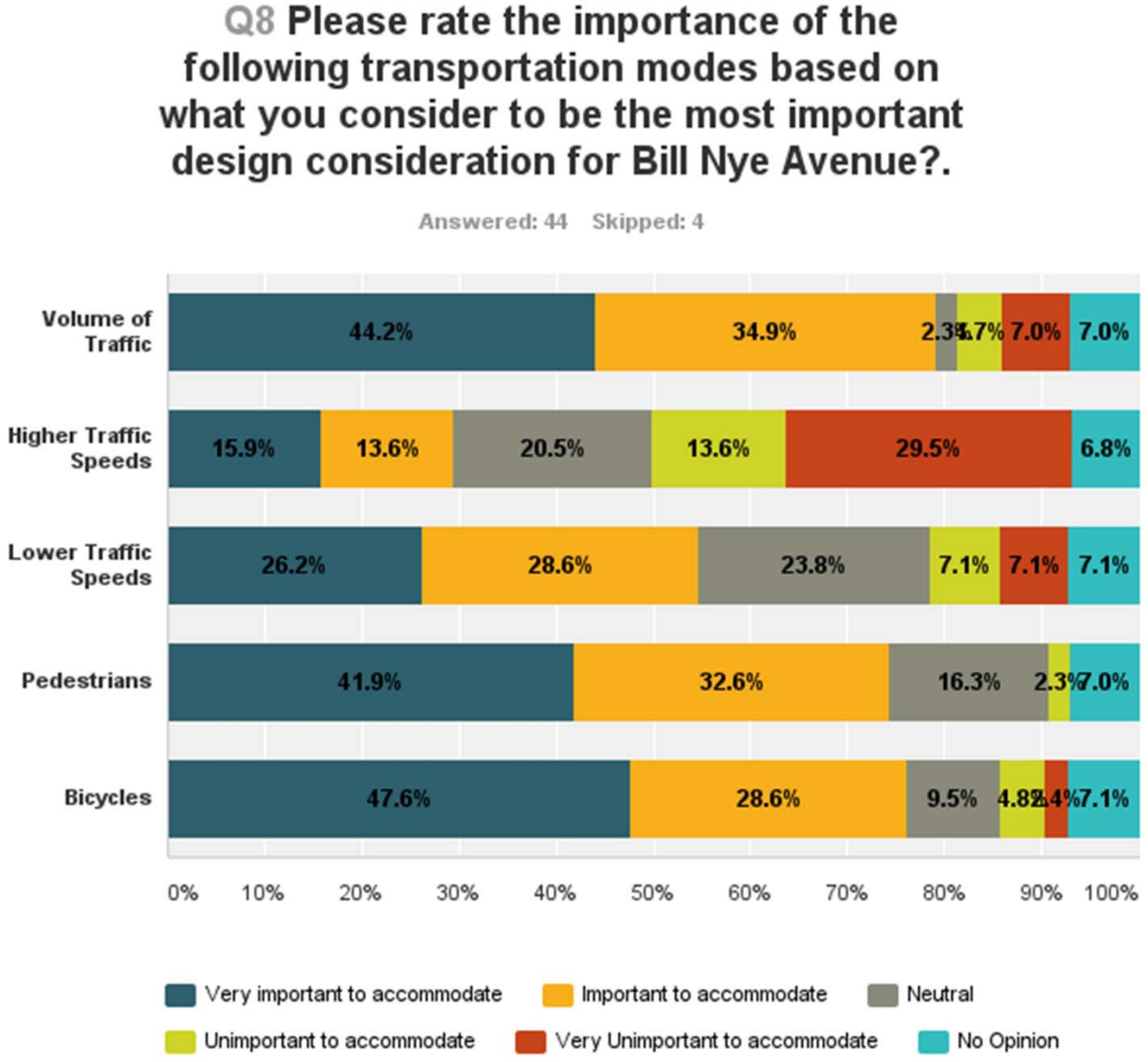
Answered: 43 Skipped: 5



Realignment of WB Off / On-ramps

Right-of-way required

What we heard?



What we heard?

- ***Do you have additional ideas, information, or other comments that you would like to provide at this time?***

  - “Please incorporate good lighting, beautification, PEDXING Stripes and warning signals at major intersections and include signage to direct travelers downtown as well as 16th street @ both South Street and Swanson Road. How about a bike lane on the west side of 16th and leave parking on the east side?”

What we heard?

- ***Do you have additional ideas, information, or other comments that you would like to provide at this time.***

  - “The current route for "Turner Drive" may work in 2 dimensions, but not in 3D. The Final Plat of Boulder Addition rubber stamped by all but one member is riddled with very serious errors which can get bulldozer drivers killed when they hit unmarked high pressure gas lines on the west side of the Turner Tract. Frankly, I'm very disappointed in the quality of work that the Urban Streets Advisory Committee has turned out since 1992 when they "rubber stamped" an atrocious, unbuildable "kinked" route for BNA which took out all the front yards on Whitman Street. The 1981 route for BNA was much better and still is. In 1999 two "interested parties" made the eastern extension of Hillside Drive disappear, despite the fact that it would--without requiring any grading--seamlessly go from Corthell Road to Boulder Drive, give Corthell Hill back its 2nd outlet, and give the poor LHS students a real way to get back home at the end of the school day. “

What we heard?

- ***Do you have additional ideas, information, or other comments that you would like to provide at this time.***

  - “It's important to find a solution so businesses will know the long-term plan for this location. “

  - “I am concerned about the safe of speed on such a long roadway-perhaps speed bumps @ pedestrian intersects? bicycles are very seasonal in Laramie. not sure how many bikes would just this roadway as far as it is from UW & downtown. It is very hard to walked on this gypsum-retains water, slippery - not sure the diagonal strip along Corona Village would be used. if sidewalk along Spring Creek is green belt, then ok-otherwise, there is already a sidewalk on the N side of Spring Creek from 5th to 9th.”

What we heard?

- ***Do you have additional ideas, information, or other comments that you would like to provide at this time.***

  - “As the community grows to the South, the traffic will continue to increase for those desiring to head to the North end of town (Turner Tract, HS, etc.) I highly recommend moving the I-80 entrance to go West, eliminating one of the major traffic confusion points. “

  - “I am not for options # 1 or 4. # 2 i liked the best.”

  - I do go out and run that area sometimes, and when the weather is warmer, i do bike and have a bicycle trailer to carry my child in, so i look at the routes in terms of what i can do riding, running/walking and driving and #2 i would feel better with. "

What we heard?

- ***Do you have additional ideas, information, or other comments that you would like to provide at this time.***

  - “A mixture of the roundabout and #3 would be best suited for the area.”
  - “I am not for options # 1 or 4. # 2 i liked the best.”
  - “This corridor should function as an arterial (access management). Separating vehicle and bicycle traffic should be considered.”
  - "I really like the round about.”

Where do we go from here?

Activity	Tentative Schedule
Council Work Secession	February 9, 2016; 6:00 p.m.
Draft Corridor Plan	February – March, 2016
Submit Draft Plan for Review	March 7, 2016
Final Draft	April, 2016?
Presentation to Governing Body	April, 2016?

Other Items

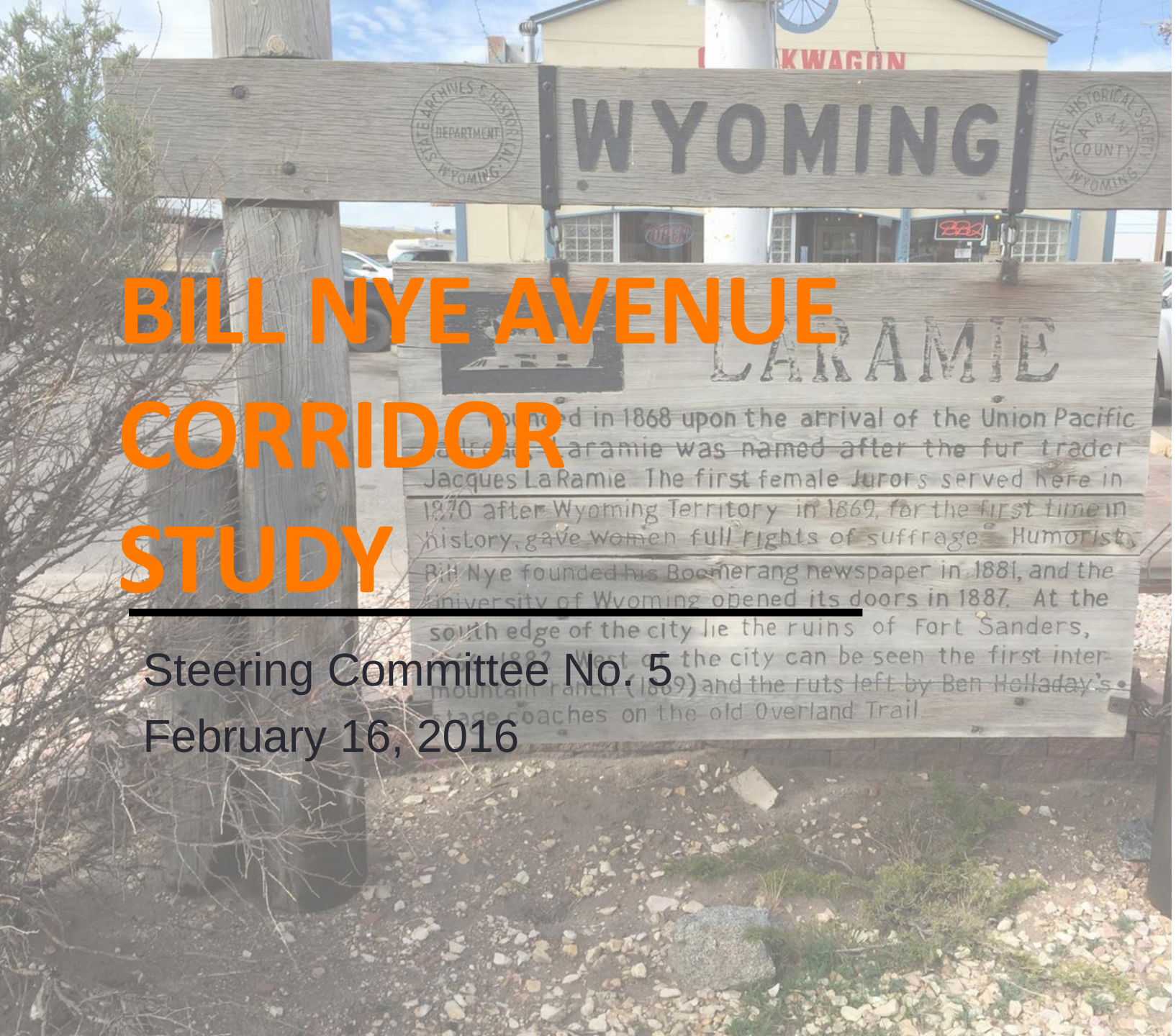
- Council Work Secession February 9, 2016
- Action Items

BILL NYE AVENUE CORRIDOR STUDY KICK OFF MEETING

February 16, 2016 @ 10:00 A.M.

•LIST OF ATTENDEES •

NAME	COMPANY	EMAIL	PHONE/ CELL
Tom Cobb	AVI	cobb@avipc.com	307.637.6017
Brad Emmons	AVI	Emmons@avip.com	307.637.6017
Joe Henderson	STS	joe@sustainabletrafficsolutions.com	303.589.6875
EARL SMITH	LARAMIE	ESMITH@CITYOFLARAMIE.ORG	307-721-5241
Eric Jaap	COL	ejaap@cityoflaramie.org	721-5345
Randy Hunt	COL	rhunt@cityoflaramie.org	721-5288
Kevin McCoy	WYDOT	Kevin.McCoy@wyo.gov	777-4178
Charles Bloom	COL	cbloom....	721.5232
PHIL PRATT	FHWA	philip.pratt@dot.gov	771-2951



BILL NYE AVENUE CORRIDOR STUDY

Steering Committee No. 5

February 16, 2016

LARAMIE

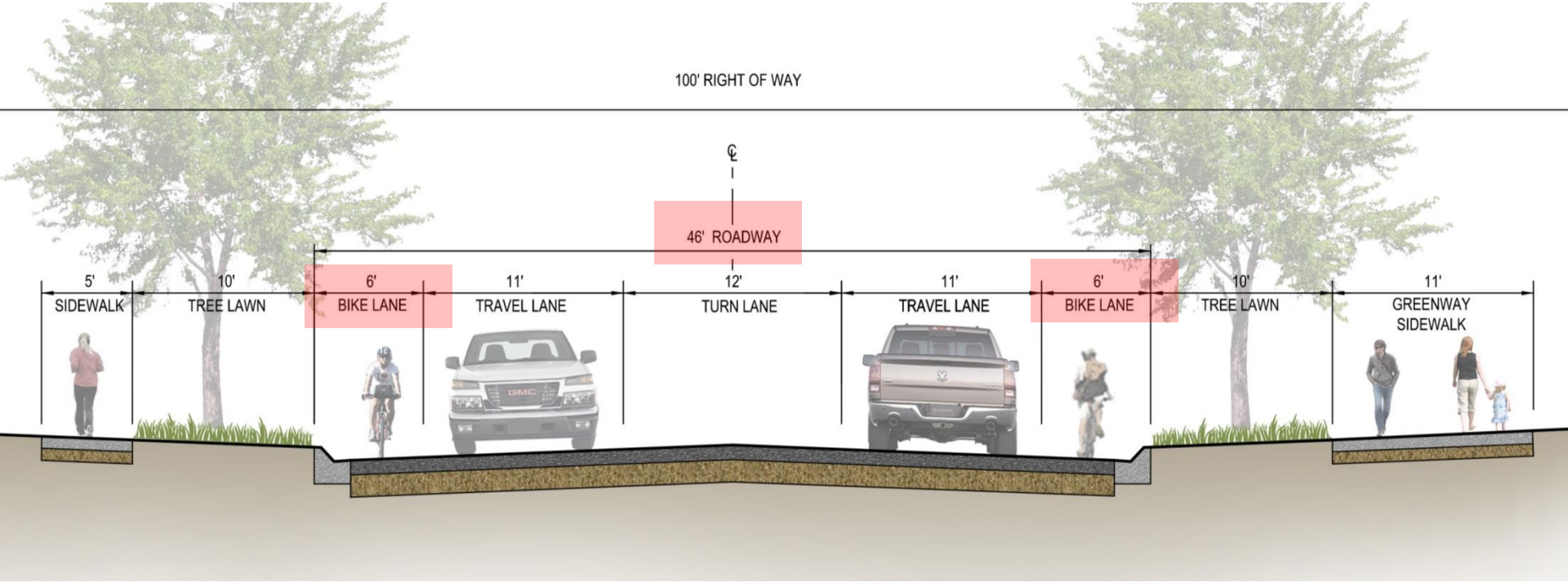
STS

ENGINEERING
PLANNING
SURVEYING
PC

Agenda

- Proposed Roadway Typical Section
- Proposed Conceptual Alternatives
- Briefly Review What we heard?
- Right-of-way Acquisition
- Level of Service Analysis
- Engineer’s Opinion of Costs
- Alternatives Analysis
- Where do we go from here?

Proposed Conceptual Typical Section



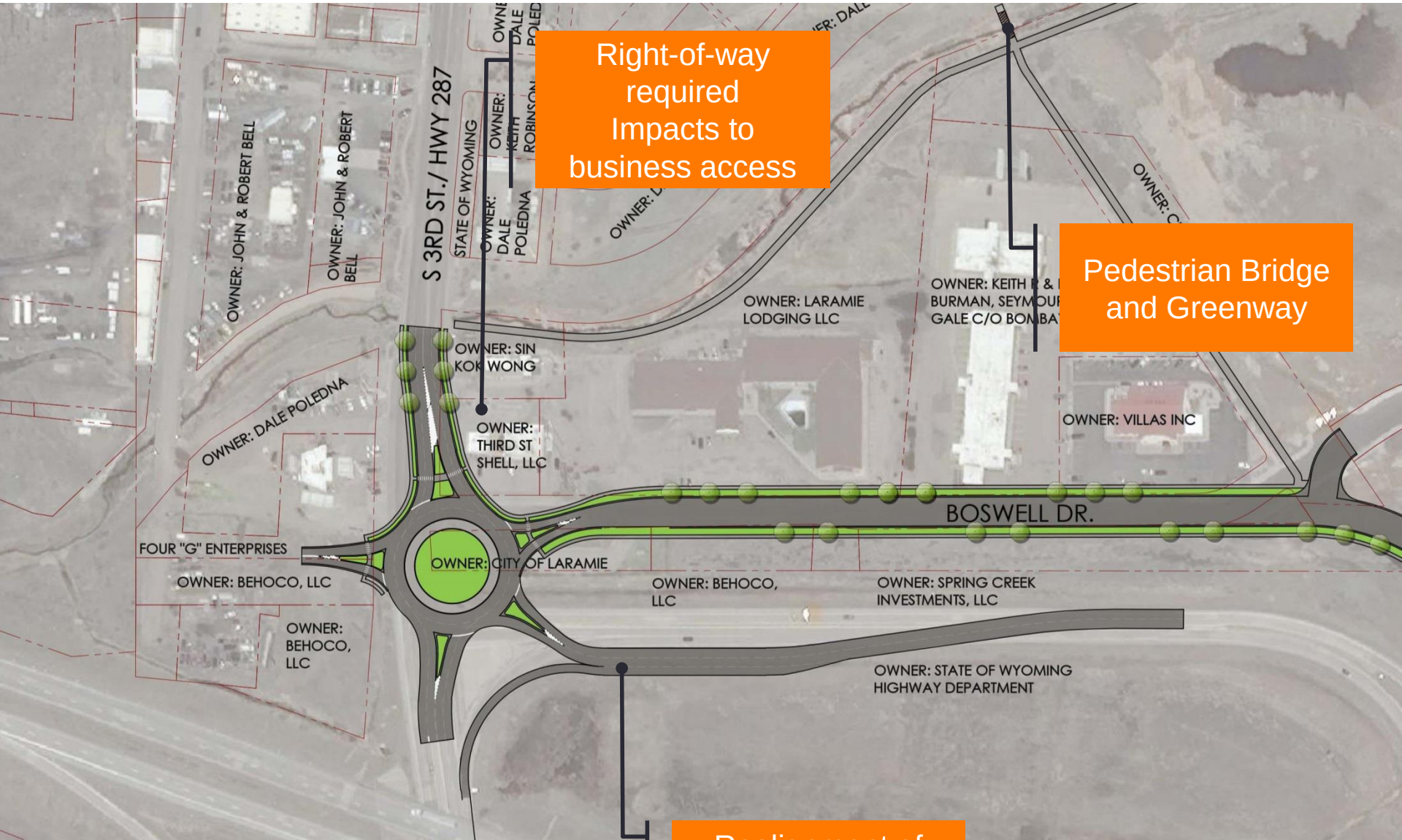
Do Nothing – Utilize 15th Street

Revised Bill Nye Realignment

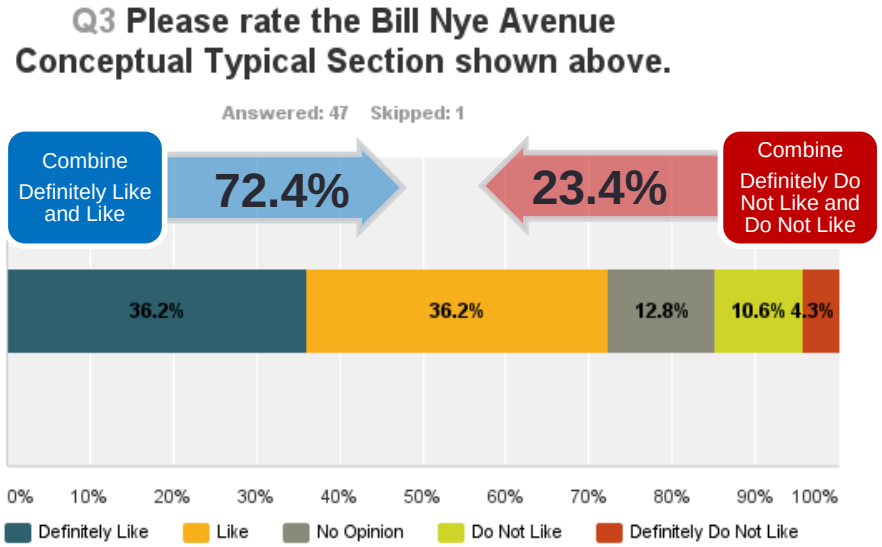
E. Palmer Drive w/ Cul-de-sac Boswell

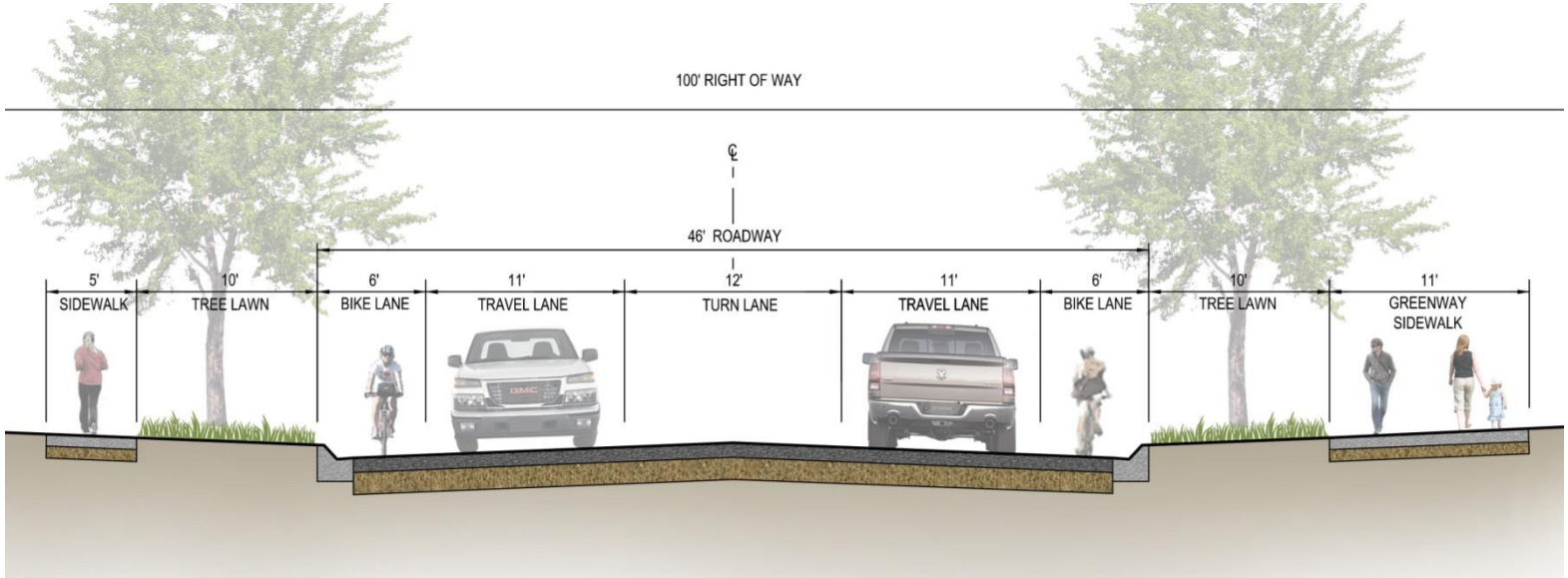
RAB at 3rd/ Boswell/ I-80 WB Ramps

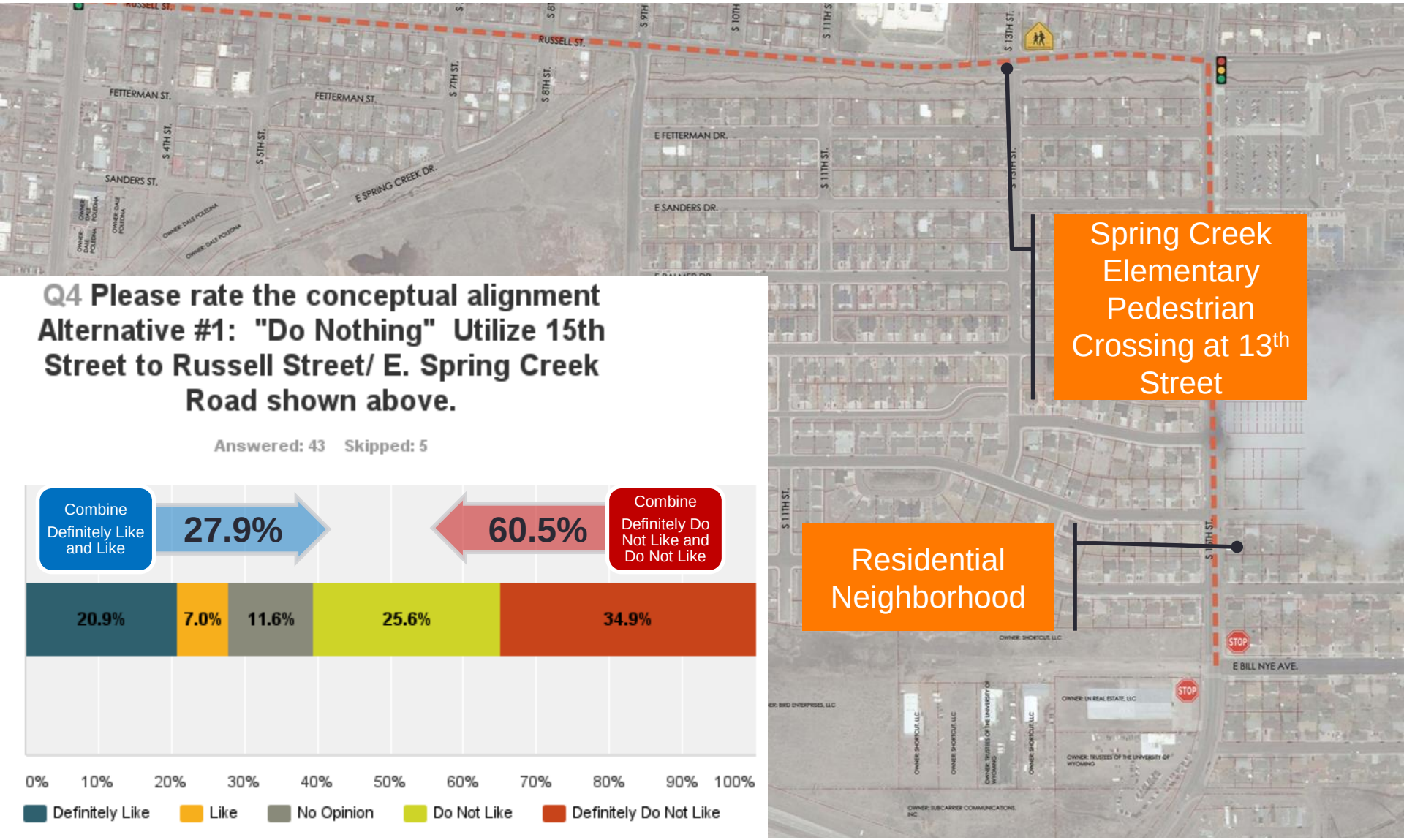
RAB at 3rd/ Boswell/ I-80 WB Ramps



What we heard?





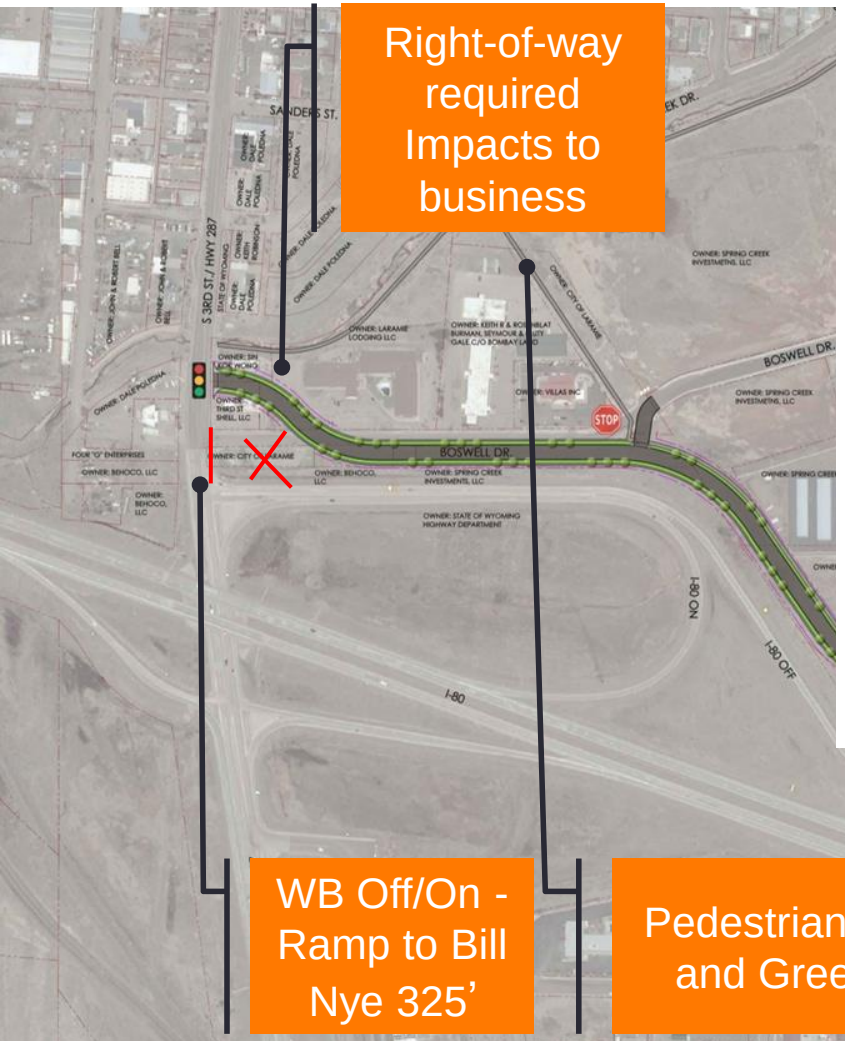


Q4 Please rate the conceptual alignment Alternative #1: "Do Nothing" Utilize 15th Street to Russell Street/ E. Spring Creek Road shown above.

Answered: 43 Skipped: 5

Do Nothing – Utilize 15th Street

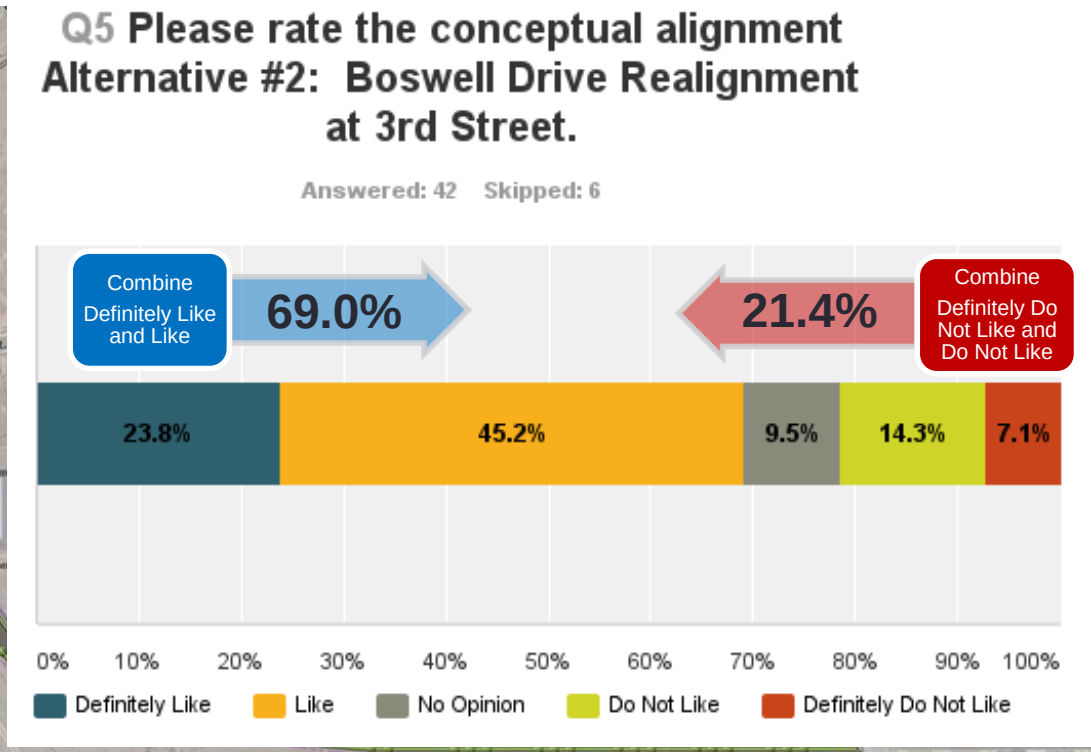
Revised Boswell Realignment

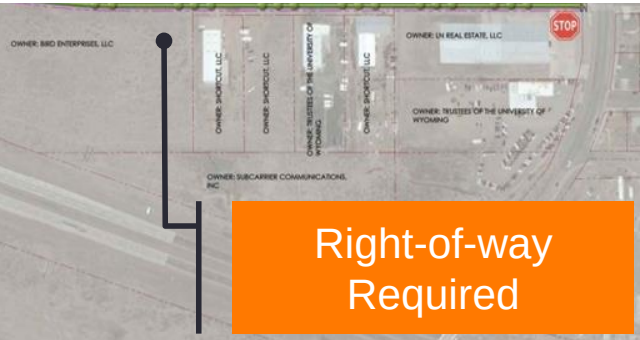


Right-of-way required Impacts to business

WB Off/On - Ramp to Bill Nye 325’

Pedestrian Bridge and Greenway





Right-of-way Required

E. Palmer Drive w/ Cul-de-sac Boswell

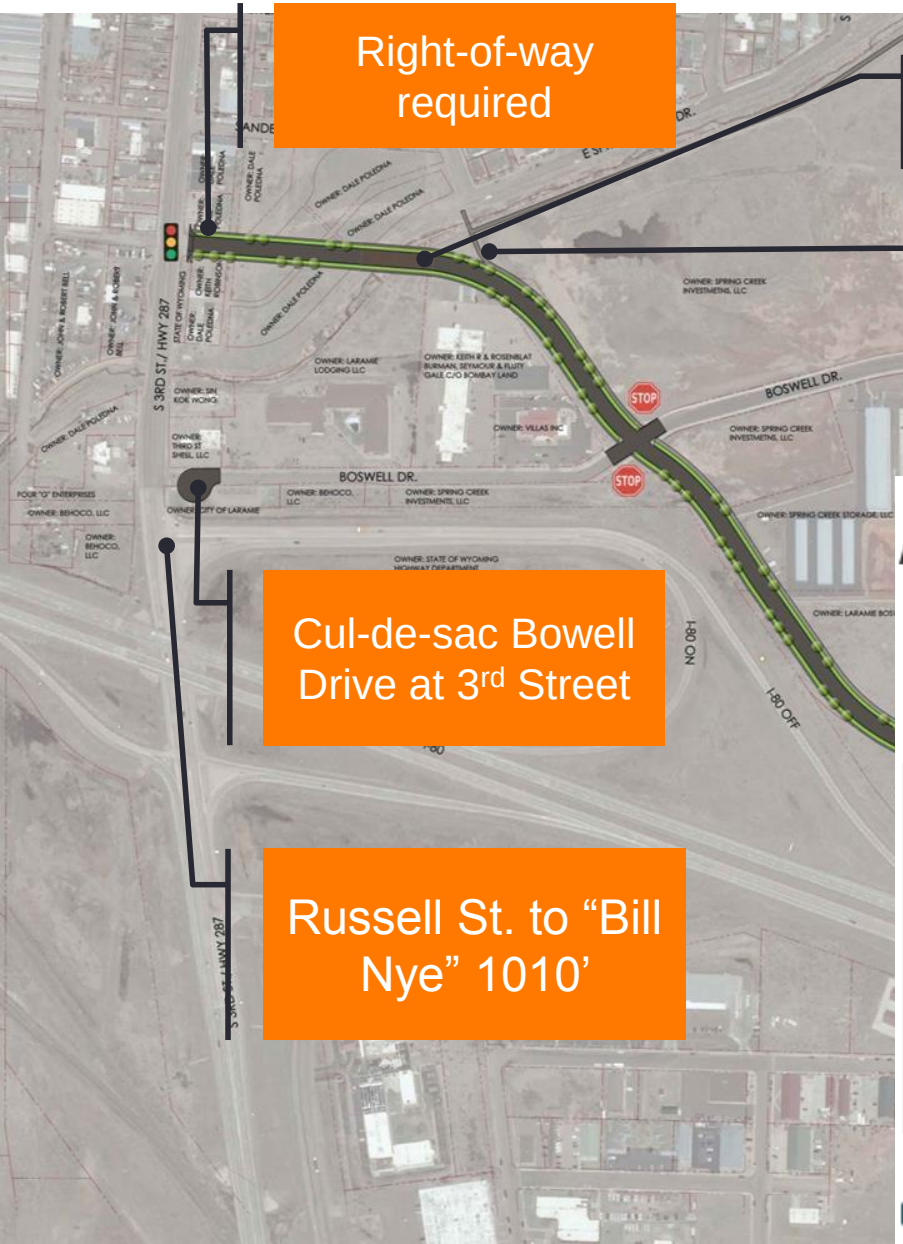
Right-of-way required

Bridge or Box Culvert Crossing at Spring Creek

Pedestrian Bridge and Greenway

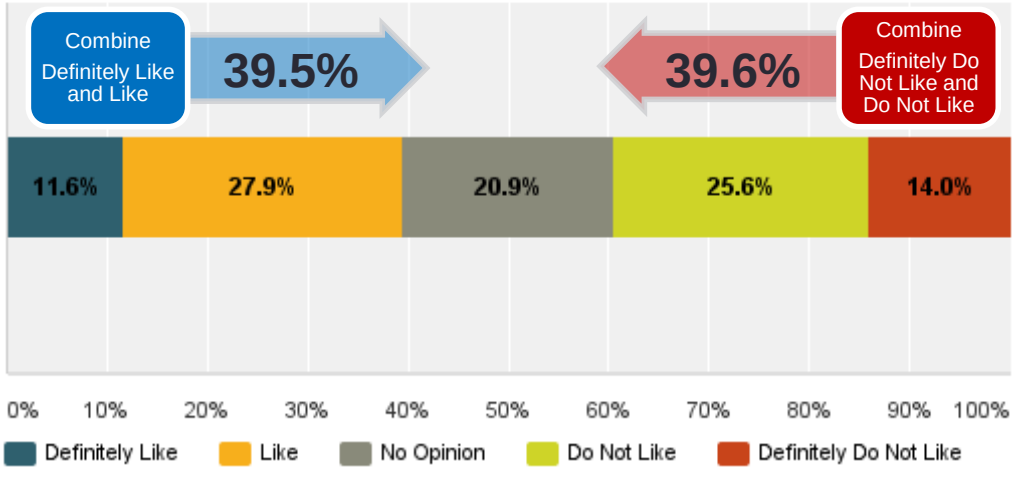
Cul-de-sac Bowell Drive at 3rd Street

Russell St. to “Bill Nye” 1010’

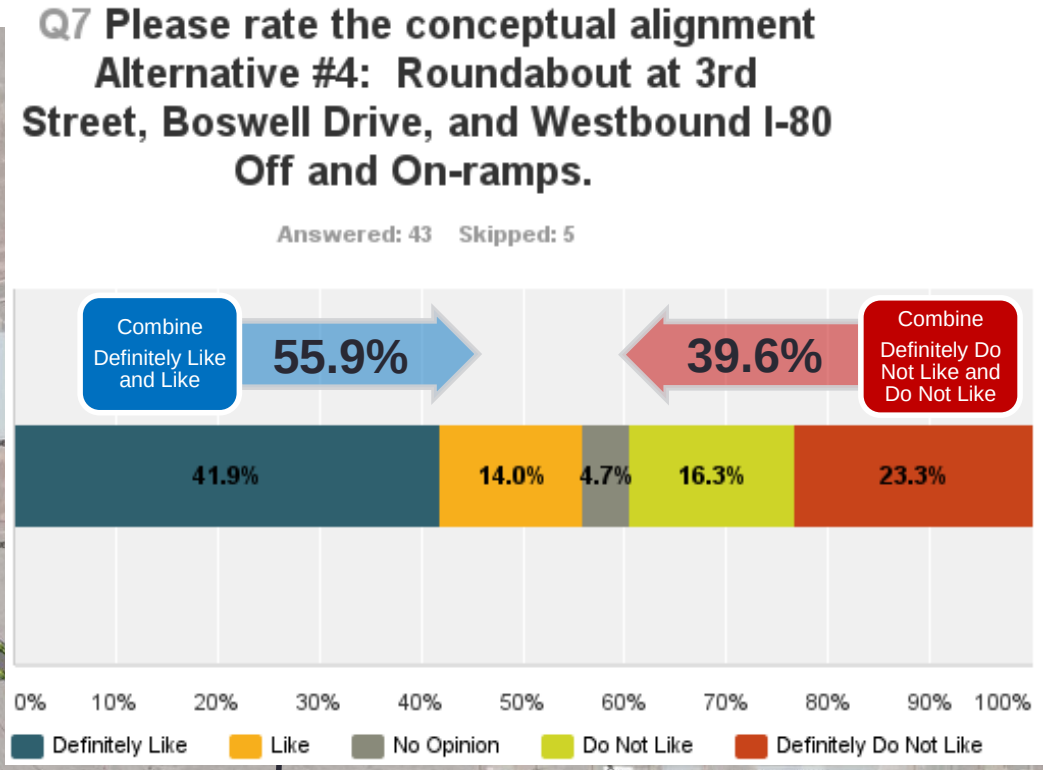


Q6 Please rate the conceptual alignment Alternative #3: Bill Nye Avenue Connection at Palmer Drive/ 3rd Street and Cul-de-sac Boswell Drive at 3rd Street.

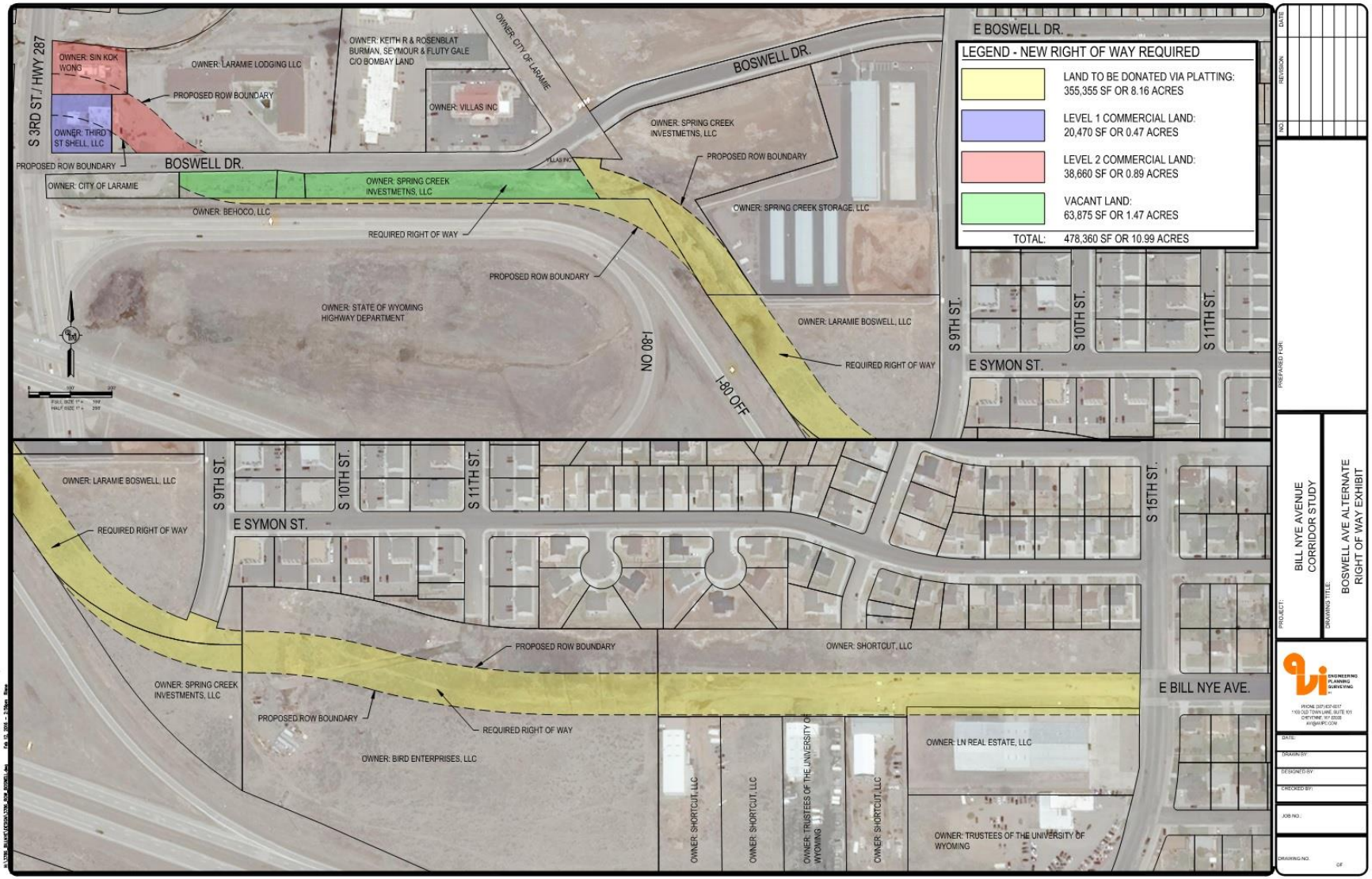
Answered: 43 Skipped: 5



RAB at 3rd/ Boswell/ I-80 WB Ramps

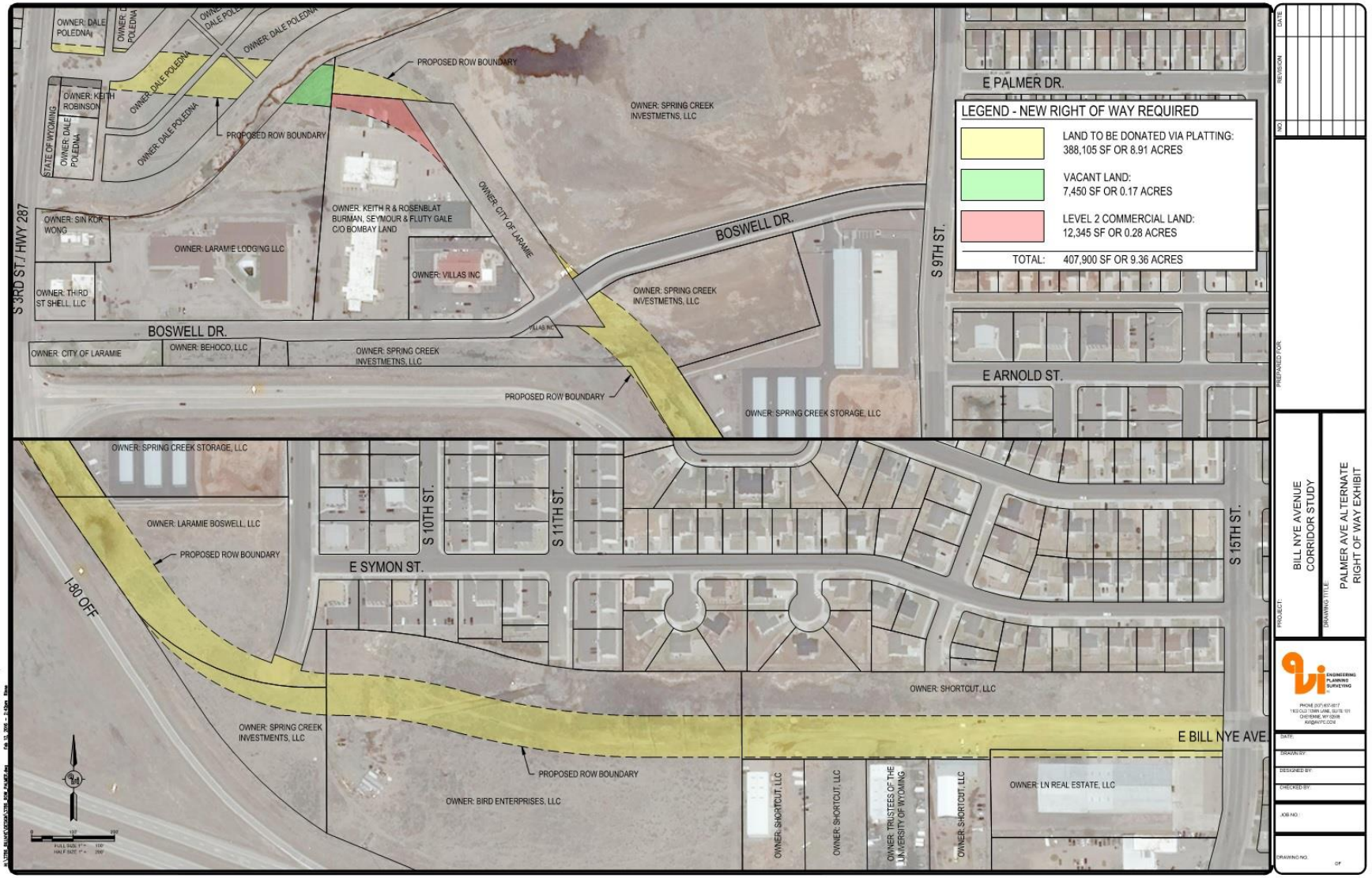


Alternative 2: Right-of-way Acquisition

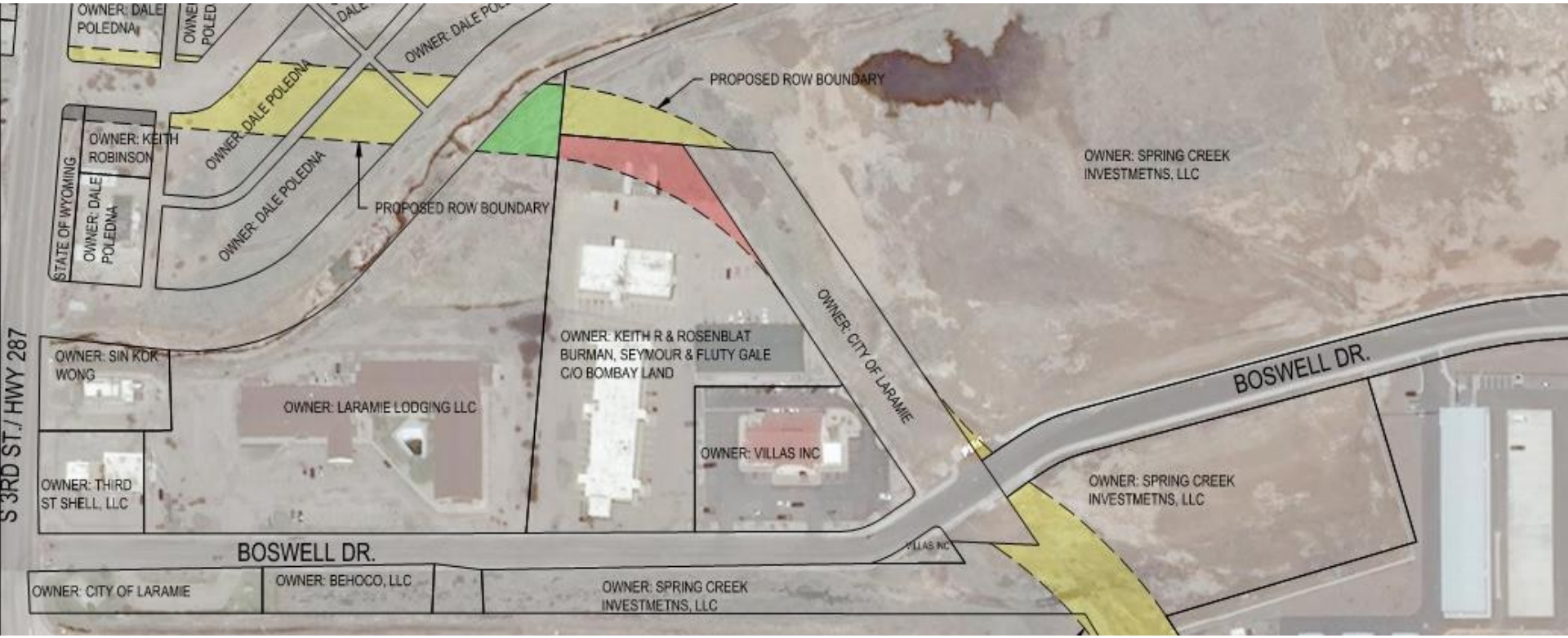


Alternative 2: Right-of-way Detail

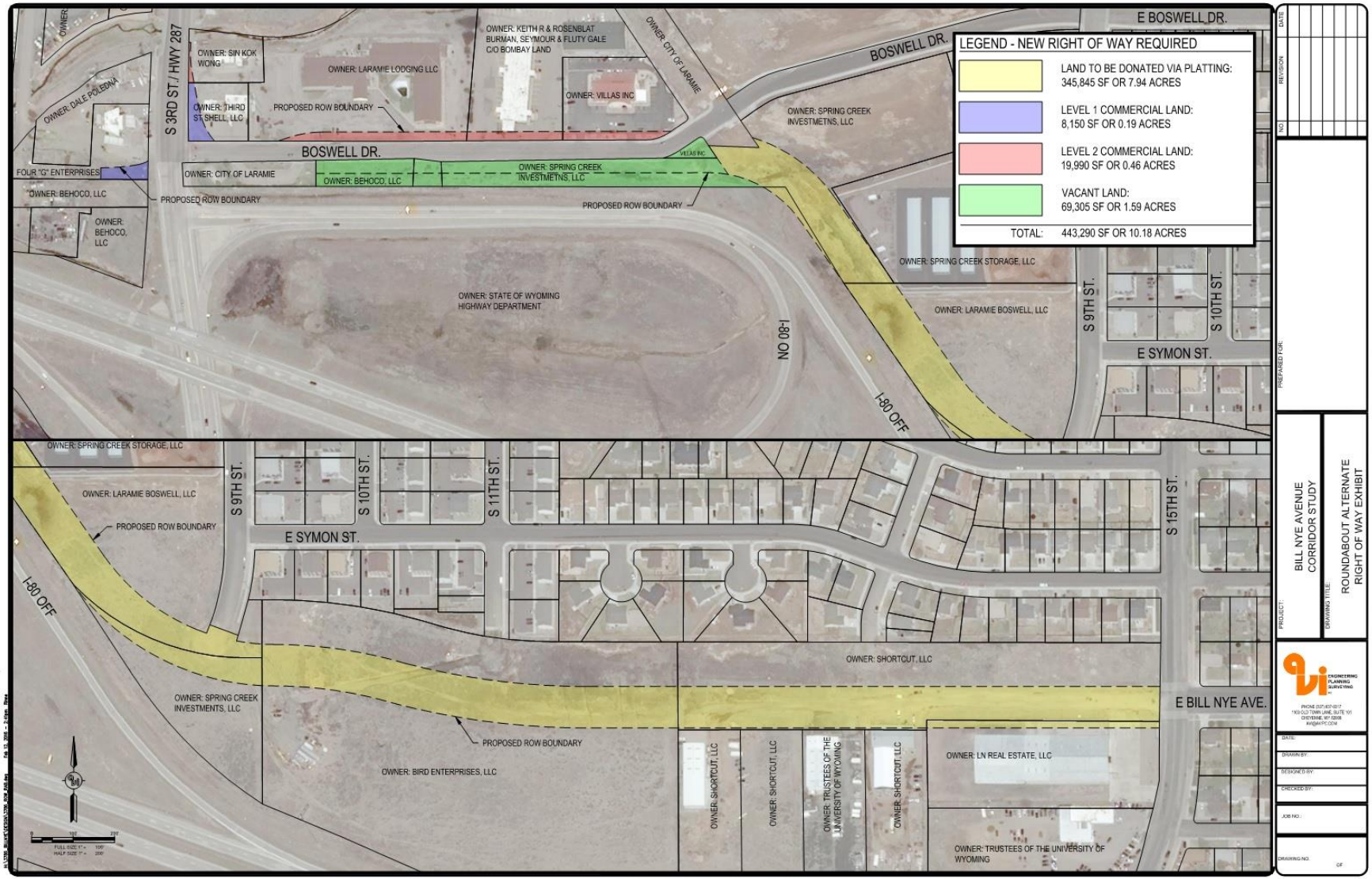
Alternative 3: Right-of-way Acquisition?



Alternative 3: Right-of-way Acquisition?



Alternative 4: Right-of-way Acquisition



Alternative 4: Right-of-way Detail

Level of Service Analysis

Year 2035 Intersection Operational Summary

Option	Intersection LOS											
	3rd / Russell		3rd / Sanders		3rd / Palmer Street		3rd / Boswell		3rd / I-80 Ramps		3rd / I-80 Ramps	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Move 3rd / Boswell North	A	A	C	D	---	---	A	A	D	F	AM	A
	Signalized		Stop Controlled		---		Signalized		Stop Controlled		Signalized	
Bill Nye Intersects 3rd Street at Palmer Street	A	B	C	D	A	A	---	---	D	F	A	A
	Signalized		Stop Controlled		Signalized		---		Stop Controlled		Signalized	
Roundabout at 3rd Street / Boswell Drive / I-80 Ramps	B	B	C	D	---	---	B	C	---	---	---	---
					---		Roundabout		---		---	
No Nothing	B	B	C	D	---	---	B	A	D	F	A	A
	Signalized		Stop Controlled		---		Signalized		Stop Controlled		Signalized	

Engineers Opinion of Cost (Present Worth)

Description of Area	Construction Cost (1)	Right-of-way Cost (2)	Engineering Design (3)	Total	For Estimate
Alternative 1: **Do Nothing**	$ 283,376.10	$ -	$ 24,641.40	$ 308,017.50	**$ 310,000**
Alternative 2: **Revised Bill Nye Avenue**	$ 4,375,468.25	$ 1,589,020.00	$ 190,237.75	$ 6,154,726.00	**$ 6,160,000**
Alternative 3: **East Palmer Drive**	$ 6,059,914.65	$ 148,140.00	$ 263,474.55	$ 6,471,529.20	**$ 6,480,000**
Alternative 4: **RAB 3rd Street**	$ 4,916,573.15	$ 798,820.00	$ 427,528.10	$ 6,142,921.25	**$ 6,150,000**

Footnotes:

(1) The Cost Estimates were developed using data from the Colorado Department of Transportation (CDOT) *2014 & 2015 Cost Data Book* compiled by the Engineering Estimates and Marketing Analysis Unit; *2014 & 2015 Weighted Average Bid Prices*, complied by WYDOT; and Typical Costs from historical AVI project experience database.

(2) Right-of-way costs are based on listed values of adjacent similar property gathered by City of Laramie Planning Division and AVI, pc (i.e. South 3rd Street, Undeveloped, Commercial Level 1 and Level 2)

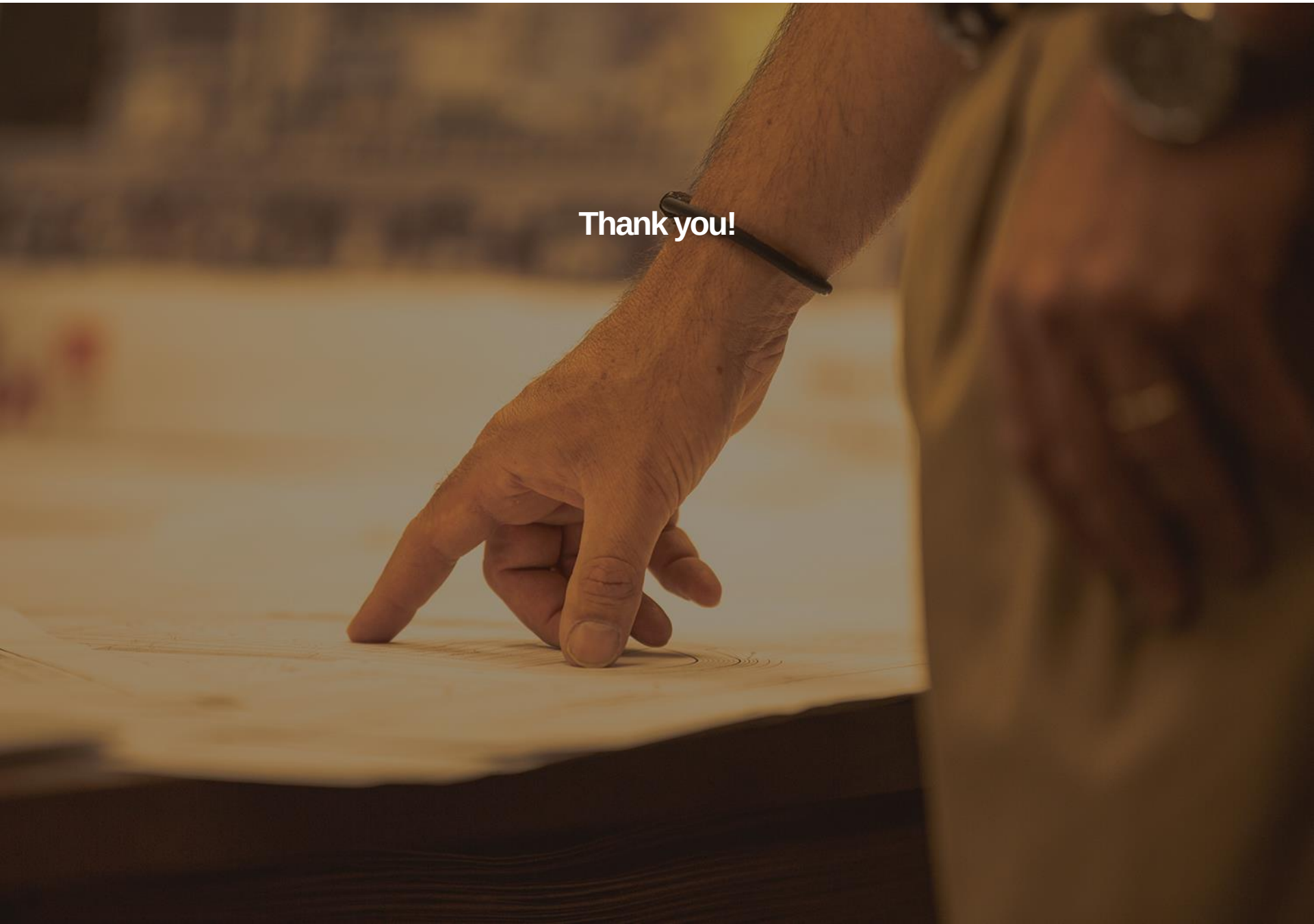
(3) Engineer Design estimated at 5% (2 and 3) and 10% (4) of total construction cost.

Alternatives Analysis

Criteria	Alternative 1 Do Nothing	Alternative 2 Boswell Realignment	Alternative 3 E. Palmer Extension	Alternative 4 RAB at 3rd Street
Construction Cost	1	4	5	4
Constructability	1	5	5	4
Construction Phasablilty	1	4	4	2
Maintenance	1	3	3	4
Public Consensus	5	2	4	3
Business Negative Impact	2	5	1	3
Neighborhood Negative Impacts	5	2	2	1
Level of Service 2035	5*	5*	1	1
Meets Goals and Objectives	5	4	2	1
Average	**3.1**	**3.8**	**3.0**	**2.6**

Where do we go from here?

Activity	Tentative Schedule*
Council Work Session	February 9, 2016
Draft Corridor Plan	February – March, 2016
Steering Committee	February 16, 2016
Submit Draft Plan for Review	March 18, 2016
Final Draft	April 1, 2016
Presentation to Governing Body	April, 2016


Thank you!

APPENDIX D

Cost Estimates

ENGINEERING
PLANNING
SURVEYING
PC

ENGINEERING
PLANNING
SURVEYING
PC

Project #: **2-3786.15 Project Estimate**
Project Name: **Bill Nye Avenue Corridor Study**
Calculated By: JDW, FTR, TDC
Date: Thursday, February 11, 2016

				ESTIMATED COSTS	
Alternative 1: Do Nothing					
Item No.	**Item**	**Total**	**Unit**	**Unit Price**	**Total**
1020.01	BONDS AND INSURANCE	1	LS	$ 3,100.00	$ 3,100.00
1020.02	CONTRACTOR TESTING	1	LS	$ 10,000.00	$ 10,000.00
1020.03	POTHOLING UTILITIES (NON-DESTRUCTIVE)	1	LS	$ 2,000.00	$ 2,000.00
1030.01	MOBILIZATION	1	LS	$ 51,600.00	$ 51,600.00
1050.01	TRAFFIC CONTROL	1	LS	$ 15,000.00	$ 15,000.00
1563.01	STORMWATER MANAGEMENT & EROSION CONTROL	1	LS	$ 5,000.00	$ 5,000.00
2050.01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (PAVEMENT, CONCRETE, VEGETATION)	1	LS	$ 10,000.00	$ 10,000.00
2210.01	UNCLASSIFIED EXCAVATION	500	CY	$ 10.00	$ 5,000.00
2231.01	CRUSHED BASE - 6"	400	SY	$ 9.00	$ 3,600.00
2231.02	CRUSHED BASE - 4"	13,856	SY	$ 7.50	$ 103,920.00
2512.01	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'A' - 2"	400	SY	$ 12.00	$ 4,800.00
2512.02	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'D' - 2"	400	SY	$ 13.00	$ 5,200.00
2900.01	LANDSCAPING (RESTORE AND RECLAIM)	0.5	AC	$ 4,000.00	$ 2,000.00
3340.02	CURB AND GUTTER	327	LF	$ 22.00	$ 7,194.00
3340.03	CONCRETE CURB FILLET	2	EA	$ 4,000.00	$ 8,000.00
3340.05	CONCRETE SIDEWALK - 4"	180	SY	$ 50.00	$ 9,000.00
4000.01	PAVEMENT MARKINGS	500	LF	$ 2.00	$ 1,000.00
7000.01	RC BOX CULVERT EXTENSION	811	SF	$ 50.00	$ 40,550.00
7000.02	RC BOX CULVERT HEADWALL	2	EA	$ 5,000.00	$ 10,000.00
7000.03	TRAFFIC SIGNAL SYSTEM (INTERSECTION) COMPLETE IN PLACE	1	EA	$ 273,000.00	$ 273,000.00
7000.04	TRAFFIC SIGNAL SYSTEM (MODIFICATION)	1	EA	$ 50,000.00	$ 50,000.00
				SUB-TOTAL	**$ 246,414.00**
	CONTINGENCY (15%)	1	LS	$ 36,962.10	$ 36,962.10
				SUB-TOTAL CONSTRUCTION	**$ 283,376.10**
	ENGINEERING DESIGN (10%)	1	LS	$ 24,641.40	$ 24,641.40
				SUB-TOTAL ENGINEERING	**$ 24,641.40**
	RIGHT OF WAY ACQUISITION (VACANT)		FT	$ 8.00	$ -
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 1)		FT	$ 30.00	$ -
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 2)		FT	$ 12.00	$ -
				SUB-TOTAL RIGHT-OF-WAY	**$ -**
				TOTAL	**$ 308,017.50**
				FOR ESTIMATE	**$ 310,000**

Footnotes:

(1) The Cost Estimates were developed using data from the Colorado Department of Transportation (CDOT) *2014 & 2015 Cost Data* Book compiled by the Engineering Estimates and Marketing Analysis Unit; 2014 & 2015 Weighted Average Bid Prices, complied by WYDOT; and Typical Costs from historical AVI project experience database.

(2) Right-of-way costs are based on listed values of adjacent similar property gathered by City of Laramie Planning Division and AVI, pc (i.e. South 3rd Street, Undeveloped, Commercial Level 1 and Level 2)

(3) Please note totals and unit prices are calcualted based on present worth or present value dollars. Adjustements should be made for years beyond the present year to better estimate required capital dollars for future improvements plan(s).

(4) Curb and gutter quanity includes Curb and Gutter (Special) in the Roundabout Islands median

(5) Landscaping quanitiy includes the area between the curb and gutter and adjacent sidewalk.

(6) Estimated values of Contract Bond and Insurance and Mobilization were estimated at 0.6% and 10% of total construction cost, respectively.

ENGINEERING
PLANNING
SURVEYING
PC

Project #: **2-3786.15 Project Estimate**
Project Name: **Bill Nye Avenue Corridor Study**
Calculated By: JDW, FTR, TDC
Date: Thursday, February 11, 2016

				ESTIMATED COSTS	
Alternative 2: Bill Nye Realignment					
Item No.	**Item**	**Total**	**Unit**	**Unit Price**	**Total**
1020.01	BONDS AND INSURANCE	1	LS	$ 25,000.00	$ 25,000.00
1020.02	CONTRACTOR TESTING	1	LS	$ 30,000.00	$ 30,000.00
1020.03	POTHOLING UTILITIES (NON-DESTRUCTIVE)	1	LS	$ 5,000.00	$ 5,000.00
1030.01	MOBILIZATION	1	LS	$ 416,200.00	$ 416,200.00
1050.01	TRAFFIC CONTROL	1	LS	$ 10,000.00	$ 10,000.00
1563.01	STORMWATER MANAGEMENT & EROSION CONTROL	1	LS	$ 10,000.00	$ 10,000.00
2050.01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (PAVEMENT, CONCRETE, VEGETATION)	1	LS	$ 30,000.00	$ 30,000.00
2210.01	UNCLASSIFIED EXCAVATION	20,000	CY	$ 4.00	$ 80,000.00
2231.01	CRUSHED BASE - 6"	24,448	SY	$ 9.00	$ 220,032.00
2231.02	CRUSHED BASE - 4"	13,856	SY	$ 7.50	$ 103,920.00
2231.03	STRUCTURAL STABILZATION GRADING #57 - 12"	24,448	SY	$ 18.00	$ 440,064.00
2512.01	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'A' - 2"	24,448	SY	$ 12.00	$ 293,376.00
2512.02	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'D' - 2"	24,448	SY	$ 13.00	$ 317,824.00
2665.01	WATER MAIN/ EXTENSION/ MODIFICATION	5,000	LF	$ 70.00	$ 350,000.00
2700.01	SANITARY SEWER MODIFICATION AND ADJUSTMENT	3,500	LS	$ 60.00	$ 210,000.00
2725.01	STORM SEWER	3,500	LS	$ 80.00	$ 280,000.00
2895.01	GEOTEXTILE MATERIAL STABLIZATION	24,448	SY	$ 3.50	$ 85,568.00
2900.01	LANDSCAPING (RESTORE AND RECLAIM)	1.9	AC	$ 1,500.00	$ 2,850.00
3340.02	CURB AND GUTTER	9,753	LF	$ 22.00	$ 214,566.00
3340.03	CONCRETE CURB FILLET	8	EA	$ 4,000.00	$ 32,000.00
3340.04	CONCRETE VALLEY PAN - 8"	233	SY	$ 75.00	$ 17,475.00
3340.05	CONCRETE SIDEWALK - 4"	11,689	SY	$ 50.00	$ 584,450.00
3340.06	CONCRETE APPROACH - 8"	1	LS	$ 1,500.00	$ 1,500.00
4000.01	PAVEMENT MARKINGS	9,505	LF	$ 2.00	$ 19,010.00
6000.01	PEDESTRIAN BRIDGE (60 X 12)	720	SF	$ 36.00	$ 25,920.00
7000.01	ROADWAY/ MULTI-USE PATH LIGHTING	1	LS	$ 252,373.40	$ 252,373.00
7000.02	TRAFFIC SIGNAL SYSTEM (INTERSECTION) COMPLETE IN PLACE	2	EA	$ 273,000.00	$ 546,000.00
				SUB-TOTAL	**$ 3,804,755.00**
	CONTINGENCY (15%)	1	LS	$ 570,713.25	$ 570,713.25
				SUB-TOTAL CONSTRUCTION	**$ 4,375,468.25**
	ENGINEERING DESIGN (5%)	1	LS	$ 190,237.75	$ 190,237.75
				SUB-TOTAL ENGINEERING	**$ 190,237.75**
	RIGHT OF WAY ACQUISTION (VACANT)	63,875	FT	$ 8.00	$ 511,000.00
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 1)	20,470	FT	$ 30.00	$ 614,100.00
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 2)	38,660	FT	$ 12.00	$ 463,920.00
				SUB-TOTAL RIGHT-OF-WAY	**$ 1,589,020.00**
				TOTAL	**$ 6,154,726.00**
				FOR ESTIMATE	**$ 6,160,000**

Footnotes:

(1) The Cost Estimates were developed using data from the Colorado Department of Transportation (CDOT) *2014 & 2015 Cost Data* Book compiled by the Engineering Estimates and Marketing Analysis Unit; 2014 & 2015 Weighted Average Bid Prices, complied by WYDOT; and Typical Costs from historical AVI project experience database.

(2) Right-of-way costs are based on listed values of adjacent similar property gathered by City of Laramie Planning Division and AVI, pc (i.e. South 3rd Street, Undeveloped, Commercial Level 1 and Level 2)

(3) Please note totals and unit prices are calcualted based on present worth or present value dollars. Adjustements should be made for years beyond the present year to better estimate required capital dollars for future improvements plan(s).

(4) Curb and gutter quanity includes Curb and Gutter (Special) in the Roundabout Islands median

(5) Landscaping quanitiy includes the area between the curb and gutter and adjacent sidewalk.

(6) Estimated values of Contract Bond and Insurance and Mobilization were estimated at 0.6% and 10% of total construction cost, respectively.

ENGINEERING
PLANNING
SURVEYING
PC

Project #: **2-3786.15** **Project Estimate**
Project Name: **Bill Nye Avenue Corridor Study**
Calculated By: JDW, FTR, TDC
Date: Thursday, February 11, 2016

				Engineers Estimate	
Alternative 3: E. Palmer Drive					
Item No.	**Item**	**Total**	**Unit**	**Unit Price**	**Total**
1020.01	BONDS AND INSURANCE	1	LS	$ 28,600.00	$ 28,600.00
1020.02	CONTRACTOR TESTING	1	LS	$ 30,000.00	$ 30,000.00
1020.03	POTHOLING UTILITIES (NON-DESTRUCTIVE)	1	LS	$ 5,000.00	$ 5,000.00
1030.01	MOBILIZATION	1	LS	$ 476,500.00	$ 476,500.00
1050.01	TRAFFIC CONTROL	1	LS	$ 10,000.00	$ 10,000.00
1563.01	STORMWATER MANAGEMENT & EROSION CONTROL	1	LS	$ 10,000.00	$ 10,000.00
2050.01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (PAVEMENT, CONCRETE, VEGETATION)	1	LS	$ 20,000.00	$ 20,000.00
2210.01	UNCLASSIFIED EXCAVATION	20,000	CY	$ 4.00	$ 80,000.00
2231.01	CRUSHED BASE - 6"	26,159	SY	$ 9.00	$ 235,427.00
2231.02	CRUSHED BASE - 4"	12,598	SY	$ 7.50	$ 94,488.00
2231.03	STRUCTURAL STABILZATION GRADING #57 - 12"	26,159	SY	$ 18.00	$ 470,862.00
2512.01	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'A' - 2"	26,159	SY	$ 12.00	$ 313,903.00
2512.02	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'D' - 2"	26,159	SY	$ 13.00	$ 340,061.00
2665.01	WATER MAIN/ EXTENSION/ MODIFICATION	5,000	LF	$ 70.00	$ 350,000.00
2700.01	SANITARY SEWER MODIFICATION AND ADJUSTMENT	3,500	LF	$ 60.00	$ 210,000.00
2725.01	STORM SEWER	3,500	LF	$ 80.00	$ 280,000.00
2895.01	GEOTEXTILE MATERIAL STABLIZATION	26,159	SY	$ 3.50	$ 91,557.00
2900.01	LANDSCAPING (RESTORE AND RECLAIM)	2.2	AC	$ 1,500.00	$ 3,300.00
3340.02	CURB AND GUTTER	10,291	LF	$ 22.00	$ 226,393.00
3340.03	CONCRETE CURB FILLET	10	EA	$ 4,000.00	$ 40,000.00
3340.04	CONCRETE VALLEY PAN - 8"	285	SY	$ 75.00	$ 21,348.00
3340.05	CONCRETE SIDEWALK - 4"	10,312	SY	$ 50.00	$ 515,579.00
3340.06	CONCRETE APPROACH - 8"	1	LS	$ 1,500.00	$ 1,500.00
4000.01	PAVEMENT MARKINGS	9,907	LF	$ 2.00	$ 19,813.00
4005.01	DRY UTILITY RELOCATION	1	LS	$ -	$ -
6000.01	SPRING CREEK BRIDGE CROSSING (180 X 66)	11,880	SF	$ 48.00	$ 570,240.00
6000.02	PEDESTRIAN BRIDGE (60 X 12)	720	SF	$ 36.00	$ 25,920.00
7000.01	ROADWAY/ MULTI-USE PATH LIGHTING	1	LS	$ 253,000.00	$ 253,000.00
7000.02	TRAFFIC SIGNAL SYSTEM (INTERSECTION) COMPLETE IN PLACE	2	EA	$ 273,000.00	$ 546,000.00
				SUB-TOTAL	**$ 5,269,491.00**
	CONTINGENCY (15%)	1	LS	$ 790,423.65	$ 790,423.65
				SUB-TOTAL CONSTRUCTION	**$ 6,059,914.65**
	ENGINEERING DESIGN (5%)	1	LS	$ 263,474.55	$ 263,474.55
				SUB-TOTAL ENGINEERING	**$ 263,474.55**
	RIGHT OF WAY ACQUISTION (VACANT)		FT	$ 8.00	$ -
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 1)		FT	$ 30.00	$ -
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 2)	12,345	FT	$ 12.00	$ 148,140.00
				SUB-TOTAL RIGHT-OF-WAY	**$ 148,140.00**
				TOTAL	**$ 6,471,529.20**
				FOR ESTIMATE	**$ 6,480,000**

Footnotes:

(1) The Cost Estimates were developed using data from the Colorado Department of Transportation (CDOT) *2014 & 2015 Cost Data* Book compiled by the Engineering Estimates and Marketing Analysis Unit; 2014 & 2015 Weighted Average Bid Prices, complied by WYDOT; and Typical Costs from historical AVI project experience database.

(2) Right-of-way costs are based on listed values of adjacent similar property gathered by City of Laramie Planning Division and AVI, pc (i.e. South 3rd Street, Undeveloped, Commercial Level 1 and Level 2)

(3) Please note totals and unit prices are calcualted based on present worth or present value dollars. Adjustements should be made for years beyond the present year to better estimate required capital dollars for future improvements plan(s).

(4) Curb and gutter quanity includes Curb and Gutter (Special) in the Roundabout Islands median

(5) Landscaping quanitiy includes the area between the curb and gutter and adjacent sidewalk.

(6) Estimated values of Contract Bond and Insurance and Mobilization were estimated at 0.6% and 10% of total construction cost, respectively.

ENGINEERING
PLANNING
SURVEYING
PC

Project #: **2-3786.15 Project Estimate**
Project Name: **Bill Nye Avenue Corridor Study**
Calculated By: JDW, FTR, TDC
Date: Wednesday, February 10, 2016

				Engineers Estimate	
Alternative 4: Roundabout at 3rd Street/ Boswell/ I-80 Westbound Ramps					
Item No.	**Item**	**Total**	**Unit**	**Unit Price**	**Total**
1020.01	BONDS AND INSURANCE	1	LS	$ 21,900.00	$ 21,900.00
1020.02	CONTRACTOR TESTING	1	LS	$ 30,000.00	$ 30,000.00
1020.03	POTHOLING UTILITIES (NON-DESTRUCTIVE)	1	LS	$ 5,000.00	$ 5,000.00
1030.01	MOBILIZATION	1	LS	$ 363,800.00	$ 363,800.00
1050.01	TRAFFIC CONTROL	1	LS	$ 10,000.00	$ 10,000.00
1563.01	STORMWATER MANAGEMENT & EROSION CONTROL	1	LS	$ 10,000.00	$ 10,000.00
2050.01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (PAVEMENT, CONCRETE, VEGETATION)	1	LS	$ 20,000.00	$ 20,000.00
2210.01	UNCLASSIFIED EXCAVATION	20,000	CY	$ 4.00	$ 80,000.00
2231.01	CRUSHED BASE - 6"	23,130	SY	$ 9.00	$ 208,170.00
2231.02	CRUSHED BASE - 4"	24,093	SY	$ 7.50	$ 180,698.00
2231.03	STRUCTURAL STABILZATION GRADING #57 - 12"	23,130	SY	$ 18.00	$ 416,340.00
2512.01	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'A' - 2"	23,130	SY	$ 12.00	$ 277,560.00
2512.02	PLANT MIX BITUMINOUS PAVEMENT (TYPE II) GRADING 'D' - 2"	23,130	SY	$ 13.00	$ 300,690.00
2665.01	WATER MAIN/ EXTENSION/ MODIFICATION	5,000	LF	$ 70.00	$ 350,000.00
2700.01	SANITARY SEWER MODIFICATION AND ADJUSTMENT	3,500	LS	$ 60.00	$ 210,000.00
2725.01	STORM SEWER	3,500	LS	$ 80.00	$ 280,000.00
2895.01	GEOTEXTILE MATERIAL STABLIZATION	24,448	SY	$ 3.50	$ 85,568.00
2900.01	LANDSCAPING (RESTORE AND RECLAIM)	2.4	AC	$ 1,500.00	$ 3,600.00
2900.02	LANDSCAPE AND STREETSCAPE ENHANCMENTS	1.0	LS	$ 100,000.00	$ 100,000.00
3340.02	CURB AND GUTTER	11,926	LF	$ 22.00	$ 262,372.00
3340.03	CONCRETE CURB FILLET	6	EA	$ 4,000.00	$ 24,000.00
3340.04	CONCRETE VALLEY PAN - 8"	180	SY	$ 75.00	$ 13,500.00
3340.05	CONCRETE SIDEWALK - 4"	12,514	SY	$ 50.00	$ 625,700.00
3340.06	CONCRETE APPROACH - 8"	1	LS	$ 1,500.00	$ 1,500.00
4000.01	PAVEMENT MARKINGS	11,430	LF	$ 2.00	$ 22,860.00
5000.01	MEDIAN BARRIER 42 IN	910	LF	$ 103.00	$ 93,730.00
6000.01	PEDESTRIAN BRIDGE (60 X 12)	720	SF	$ 36.00	$ 25,920.00
7000.01	ROADWAY/ MULTI-USE PATH LIGHTING	1	LS	$ 252,373.40	$ 252,373.00
					$ 4,275,281.00
	CONTINGENCY (15%)	1	LS	$ 641,292.15	$ 641,292.15
				SUB-TOTAL CONSTRUCTION	$ 4,916,573.15
	ENGINEERING DESIGN (10%)	1	LS	$ 427,528.10	$ 427,528.10
				SUB-TOTAL ENGINEERING	$ 427,528.10
	RIGHT OF WAY ACQUISTION (VACANT)	39,305	FT	$ 8.00	$ 314,440.00
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 1)	8,150	FT	$ 30.00	$ 244,500.00
	RIGHT OF WAY ACQUISITION (COMMERCIAL LEVEL 2)	19,990	FT	$ 12.00	$ 239,880.00
				SUB-TOTAL RIGHT-OF-WAY	$ 798,820.00
				TOTAL	$ 6,142,921.25
				FOR ESTIMATE	$ 6,150,000

Footnotes:

(1) The Cost Estimates were developed using data from the Colorado Department of Transportation (CDOT) *2014 & 2015 Cost Data* Book compiled by the Engineering Estimates and Marketing Analysis Unit; 2014 & 2015 Weighted Average Bid Prices, complied by WYDOT; and Typical Costs from historical AVI project experience database.

(2) Right-of-way costs are based on listed values of adjacent similar property gathered by City of Laramie Planning Division and AVI, pc (i.e. South 3rd Street, Undeveloped, Commercial Level 1 and Level 2)

(3) Please note totals and unit prices are calcualted based on present worth or present value dollars. Adjustements should be made for years beyond the present year to better estimate required capital dollars for future improvements plan(s).

(4) Curb and gutter quanity includes Curb and Gutter (Special) in the Roundabout Islands median

(5) Landscaping quanitiy includes the area between the curb and gutter and adjacent sidewalk.

(6) Estimated values of Contract Bond and Insurance and Mobilization were estimated at 0.6% and 10% of total construction cost, respectively.

APPENDIX E

Traffic Analysis

ENGINEERING
PLANNING
SURVEYING
PC

1.0 Traffic Volume Scenarios

Traffic volume scenarios were developed for each of the alternatives, based on existing traffic counts at key intersections on the 3rd Street corridor and projected volumes for the undeveloped areas on the Bill Nye Avenue corridor.

Peak hour turning movement count data were collected on Tuesday May 12, 2015 at Sanders Street, Boswell Drive, and the I-80 Ramps. WYDOT provided peak hour count data for Russel Street that were collected on Thursday September 27, 2012. The existing volumes are summarized in Figure 1 and the counts are contained in Appendix A.

The projected traffic volumes for the analysis were developed through a three step process. First, the existing traffic volumes along the 3rd Street corridor were inflated by 1% annually to Year 2035 levels. These volumes are referred to as the background traffic volumes. Second, projected volumes for undeveloped areas along the corridor and areas that are expected to redevelop were estimated using trip generation rates from Trip Generation, 9th Edition[1]. The projected volumes and assumptions used to develop the volumes are contained in Table 1. The planning areas referenced in Table 1 were defined based on the City's Future Land Use Map (see Figure 2). Third, the projected volumes were distributed based on future traffic patterns. Finally, the background traffic volumes and the projected traffic volumes were combined to create the total traffic volumes. The volume scenarios for the four alternatives are contained in Figures 3 through 6.

The differences between the volume scenarios is based on the access to 3rd Street from the planning areas shown in Figure 2. The Do Nothing alternative assumes that Bill Nye Avenue is not constructed and the existing streets including Sanders Street and Boswell Drive will provide access to the planning areas east of 3rd Street. As a result, most of the traffic from the planning areas will utilize the existing streets in the Do Nothing alternative. The impact to the existing streets can be seen if the Do Nothing alternative volumes at Russell Street are compared with the volumes for the other alternatives. Volumes on Russell Street and the turning movements from 3rd Street onto Russell Street are expected to be higher in the Do Nothing Alternative. In addition, volumes in the Do Nothing Alternative will be higher on 9th Street, 15th Street, Spring Creek Drive, Corthell Road, and Grand Avenue.

2.0 Traffic Signal Warrant Studies

STS evaluated the peak hour warrant for all four traffic volume scenarios. The following warrants were evaluated based on criteria

[1] Trip Generation, 9th Edition: An ITE Informational Report. Institute of Transportation Engineers. 2012.

contained in the Manual on Uniform Traffic Control Devices (MUTCD)[2]:

- Boswell Drive in the Do Nothing Alternative;
- Bill Nye Avenue in Alternatives 1 and 2; and
- I-80 Ramps in all of the alternatives.

The signal warrant studies are contained in Appendix B.

Results of the signal warrant analysis include:

- **Boswell Drive in the Do Nothing Alternative.** A traffic signal is not expected to be warranted at 3rd Street / Boswell Drive in the Do Nothing Alternative.
- **Bill Nye Avenue in Alternatives 1 and 2.** A traffic signal is expected to be warranted at this intersection by the Year 2030 assuming a straight line increase in traffic volumes.
- **I-80 Ramps.** A traffic signal is expected to be warranted at this intersection by the Year 2035 assuming a straight line increase in traffic volumes.

3.0 Review of Crash Data

Crash data were provided by WYDOT for each of the key intersections along the corridor for the time period beginning on January 1, 2010 and ending on August 31, 2015. The number of crashes ranged from a total of seven at Russell Street to two at Sanders Street (see Table 2). Crash rates range from 0.10 crashes per million entering vehicles at the Sanders Street intersection to 0.28 at the Russell Street intersection. Given the low number of crashes and crash rates, STS concludes that there are no crash problems on the corridor. The crash data are contained in Appendix C.

4.0 Intersection Analysis

To evaluate the performance of the intersections on the corridor, the Level of Service (LOS) was calculated using Synchro software. This software package utilizes criteria described in the Highway Capacity Manual[3]. LOS is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. Acceptable intersection operation in urban areas is typically considered LOS D or better.

Assumptions used in the analysis include:

- **Saturation Flow Rate.** The saturation flow rate was assumed to be 1,600 passenger cars / hour / lane. This rate has been verified by STS and WYDOT in both Casper and Cheyenne. It reflects the driving habits of motorists in those two

---

2 Manual on Uniform Traffic Control Devices. Federal Highway Administration. 2009.

3 Highway Capacity Manual. Transportation Research Board. National Research Council. 2010.

communities and is likely reflective of the driving habits of Laramie residents.

- **Peak Hour Factor.** The peak hour factor for the analysis was assumed to be 0.85 for the existing traffic volumes and 0.92 for the future traffic volume scenarios.
- **Truck Percentage.** The percentage of trucks was assumed to be 2%.
- **Signal Timing.** The signal timing for Russell Street was obtained from WYDOT.

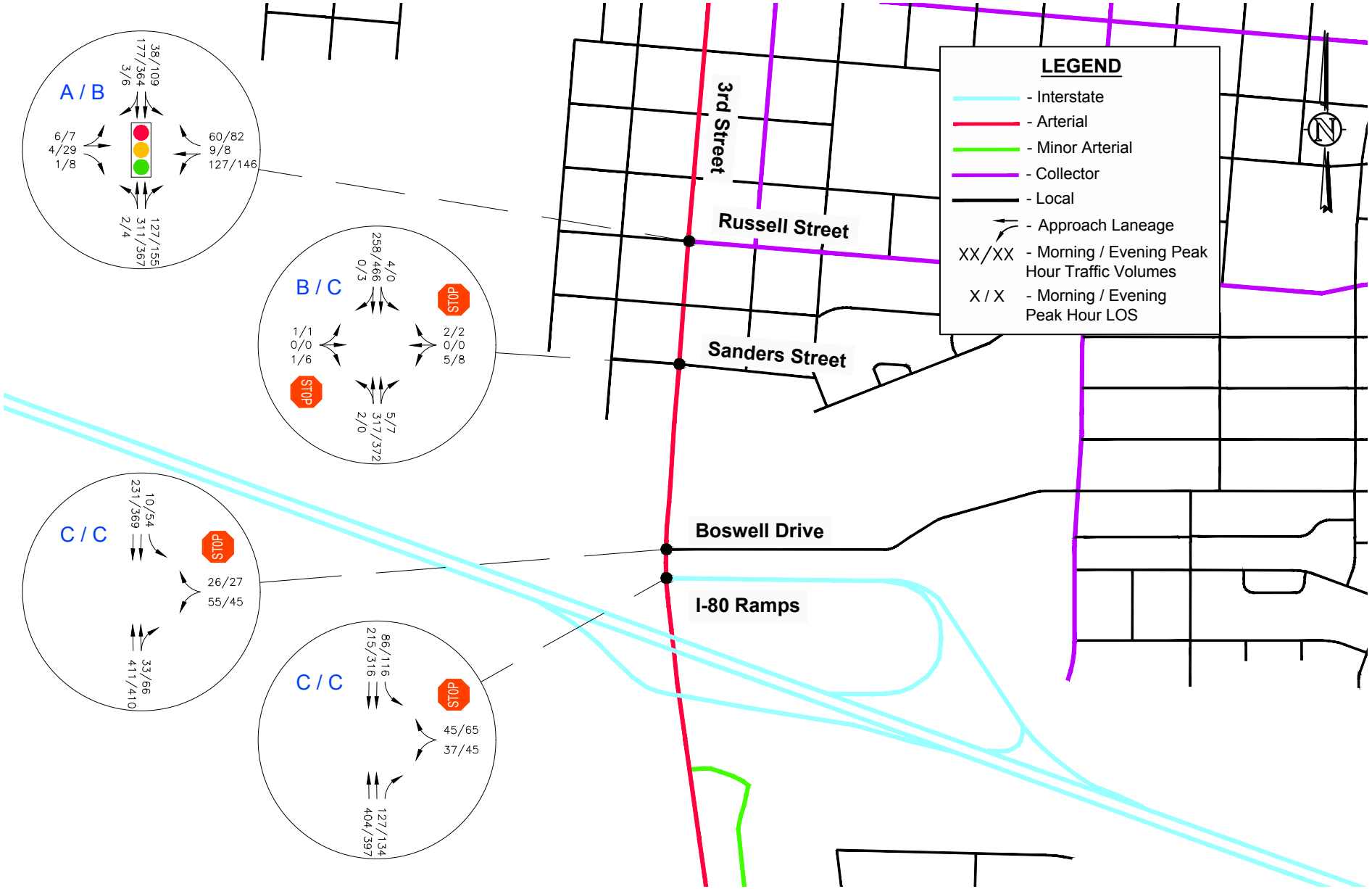
The level of service analysis results are summarized in Table 3, contained in Appendix D, and are described below.

- **Existing Traffic Volumes.** All four of the intersections are operating at acceptable levels of service during both peak hours.
- **Year 2035 Do Nothing Alternative.** The signalized intersections at Russell Street and the I-80 Ramps are expected to operate at LOS A and LOS B. However, the stop controlled intersections at Sanders Street and Boswell Drive are expected to operate at LOS D during the morning peak hour and LOS F during the evening peak hour. The level of service for stop controlled intersections is based on the lowest letter grade for a side street movement. On an arterial street, it isn't unusual for the side street approaches at a stop controlled intersection to perform poorly.
- **Year 2035 Alternatives 1, and 2.** The signalized intersections at Russell Street, Bill Nye Avenue, and the I-80 Ramps are expected to operate at LOS A and LOS B. The stop controlled intersection at Sanders Street is expected to operate at LOS C during the morning peak hour and LOS E during the evening peak hour. The difference in the operation at Sanders Street as compared to the Do Nothing Alternative is the presence of the signal at Bill Nye Avenue in Alternatives 1 and 2. This signal combined with the signal at Russell Street will create gaps in 3rd Street traffic that the side street traffic at Sanders Street can turn into.
- **Year 2035 Alternative 3.** Like Alternatives 1 and 2, Russell Street is expected to operate at LOS A and LOS B, and Sanders Street is expected to operate at LOS C and E. The roundabout at Bill Nye Avenue and the I-80 Ramps is expected to operate at LOS B and C.

5.0 Recommendations

The following long term recommendations are made based on the analysis performed for this project.

- **Left Turn Lane on 3rd Street.** The City and WYDOT should create a left turn lane on 3rd Street at Russell Street and Sanders Street.
- **Sanders Street and Palmer Street.** The City should improve the approaches to 3rd Street at Sanders Street and Palmer Street to allow for two lanes on each approach.



Bill Nye Avenue Corridor Study
EXISTING TRAFFIC VOLUMES

Scale	1" = 750'	Date	March 8, 2016	Drawn by	JBH	Job #	AVI, p.c.	Figure	1

Grand Avenue

3rd Street

9th Street

15th Street

Russell Street

Spring Creek Drive

Corthell Road

Boulder Drive

Bill Nye Avenue

Bill Nye Avenue

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

LEGEND

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local
- Planning Area
- H - Planning Area Designation

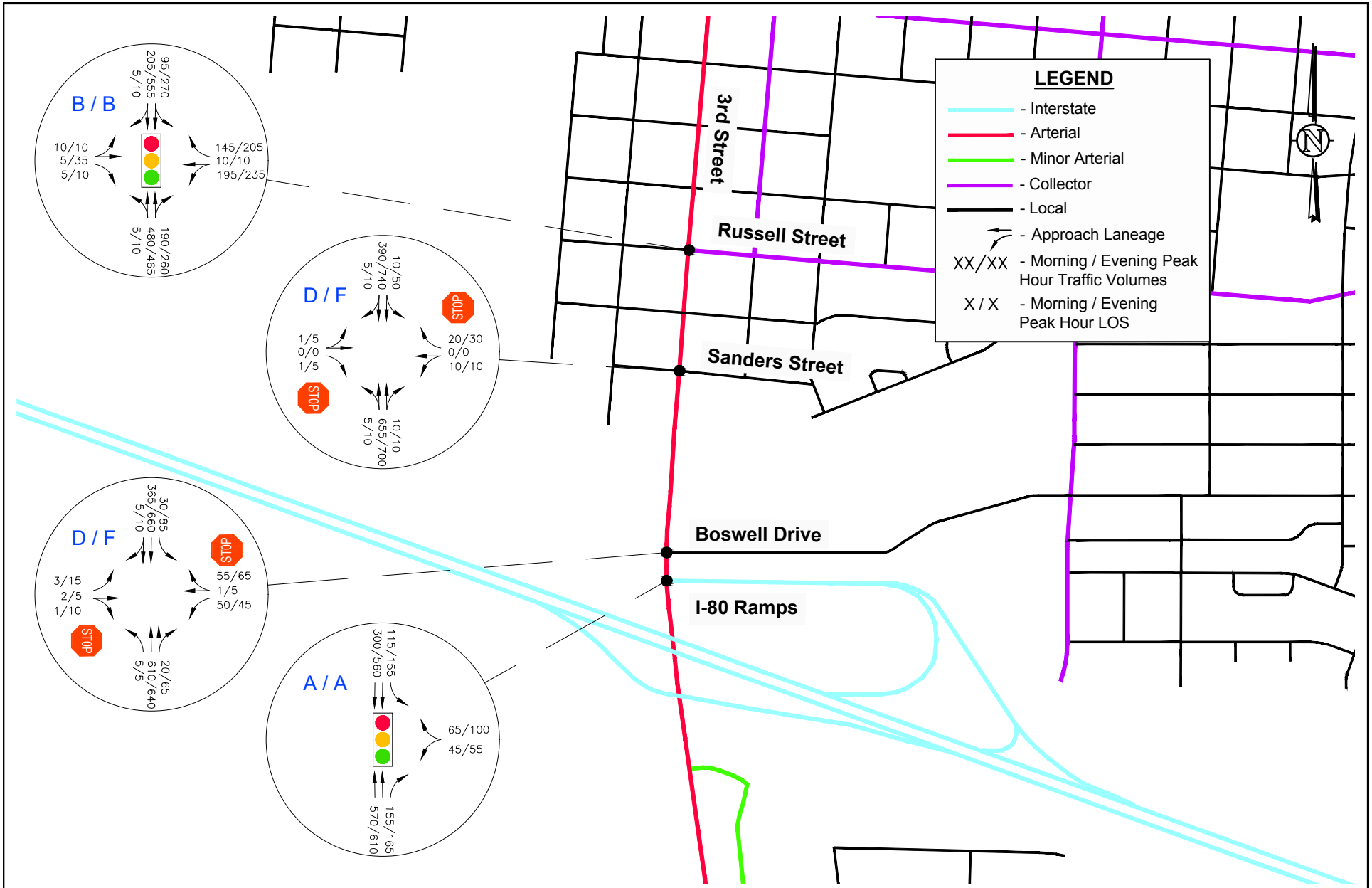
Bill Nye Corridor Study

DEVELOPMENT AREAS ALONG THE BILL NYE CORRIDOR

Scale	Date	Job #	Figure
1" = 1,250'	March 8, 2016	AVI, p.c.	2

Drawn by: JBH

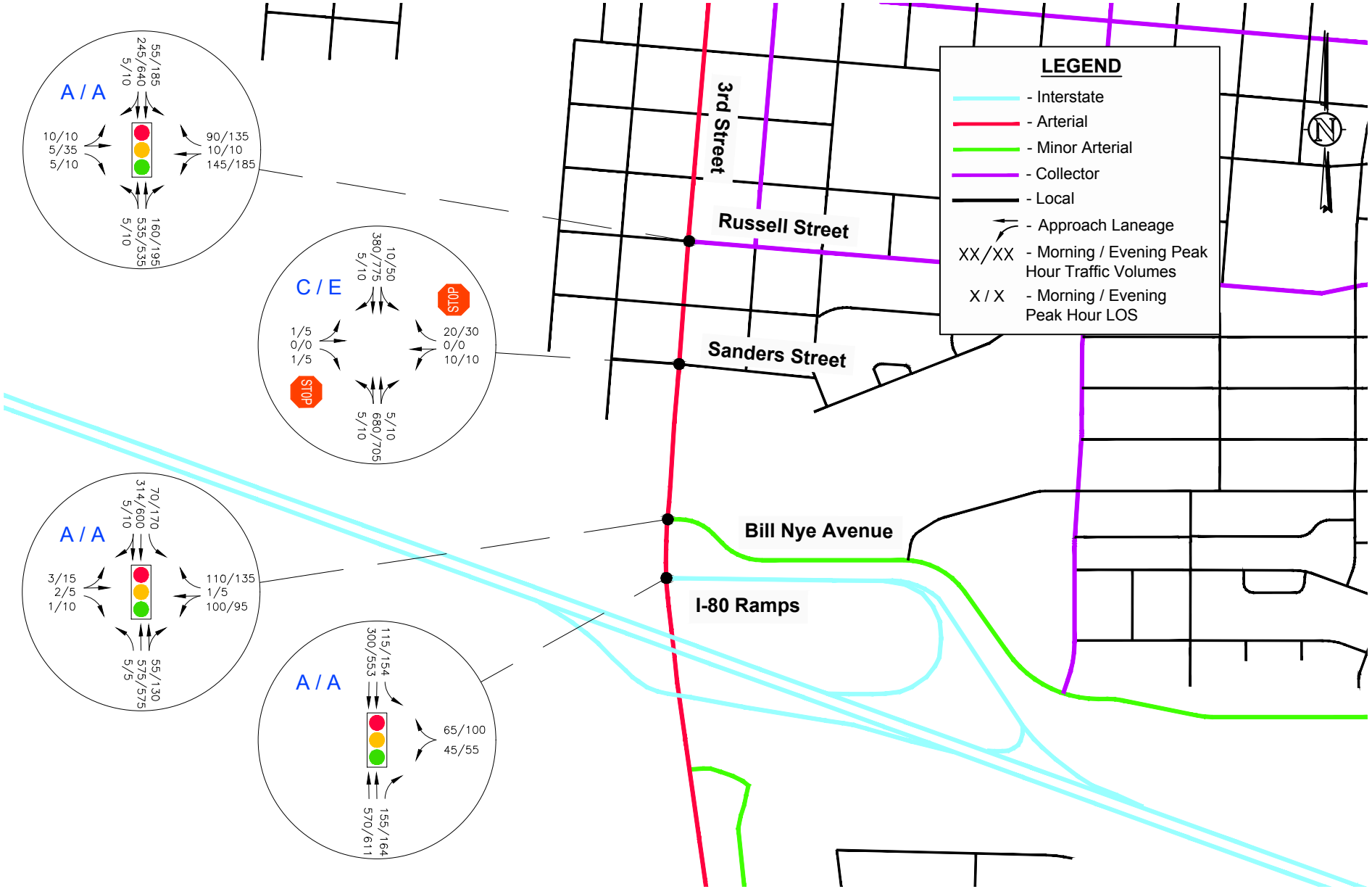
STS



STS

Bill Nye Avenue Corridor Study
YEAR 2035 DO NOTHING ALTERNATIVE

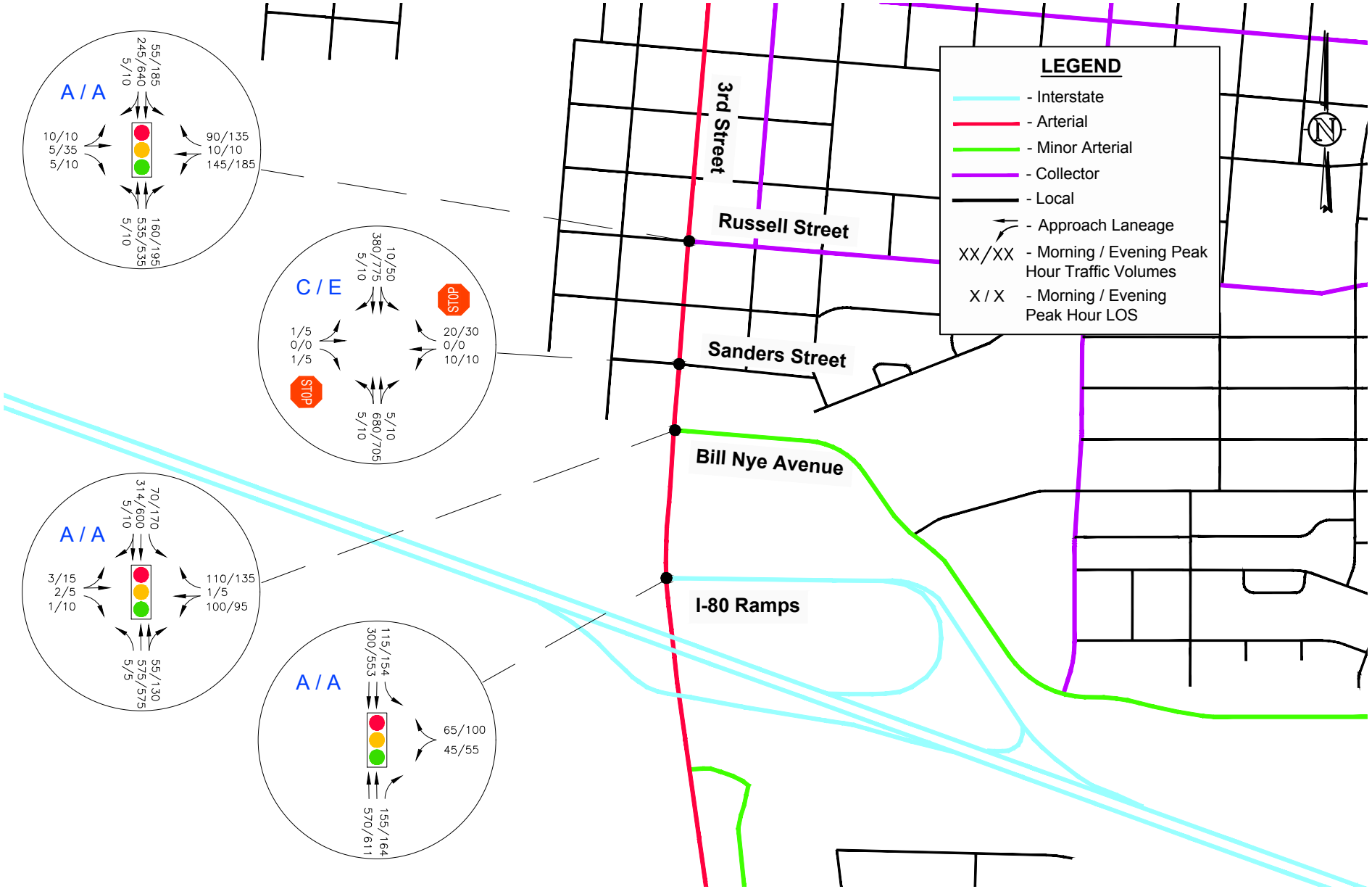
Scale	1" = 750'	Date	March 8, 2016	Drawn by	JBH	Job #	AVI, p.c.	Figure	3



STS

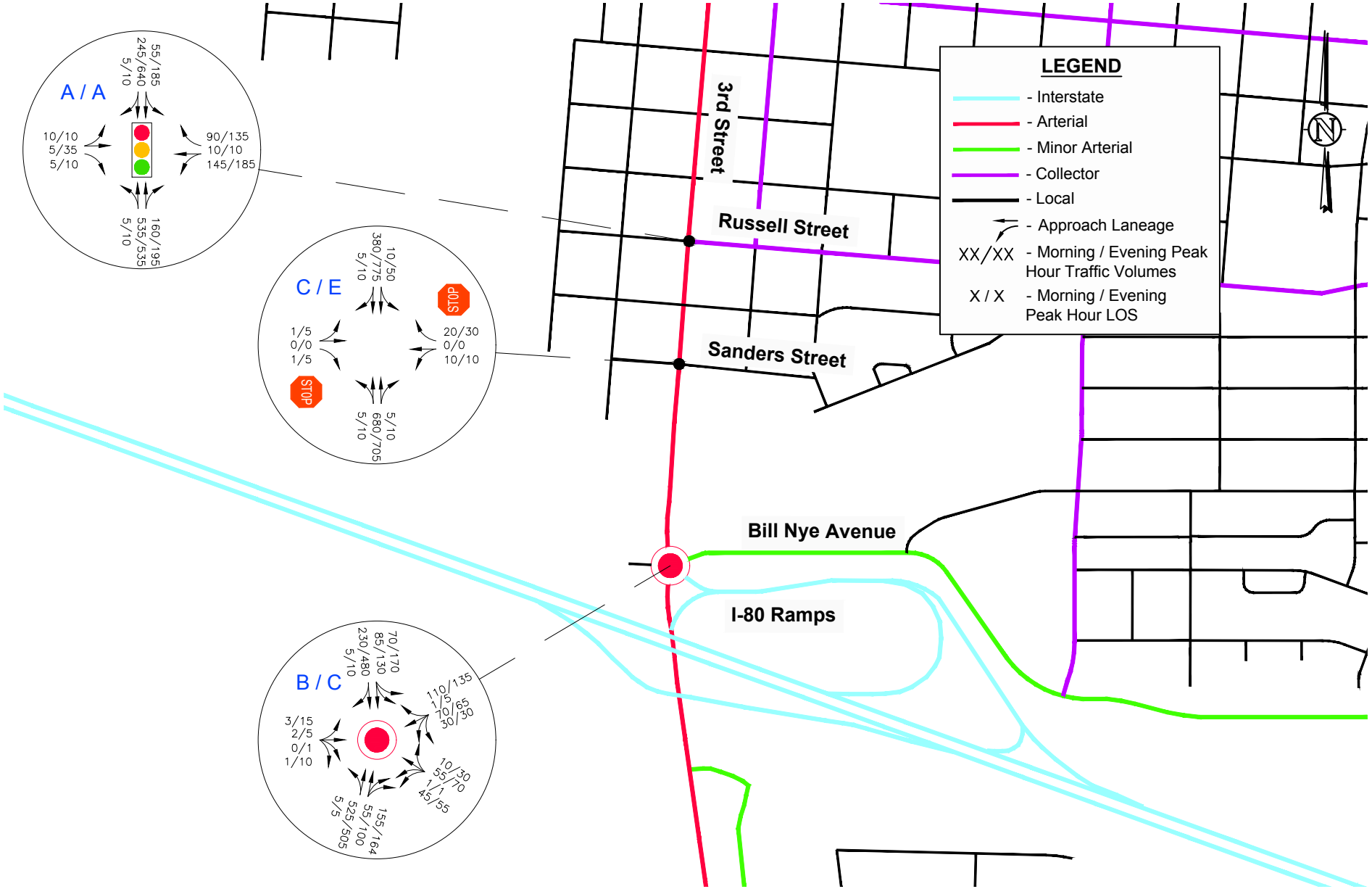
Bill Nye Avenue Corridor Study
YEAR 2035 ALTERNATIVE 1

Scale	1" = 750'	Date	March 8, 2016	Drawn by	JBH	Job #	AVI, p.c.	Figure	4



Bill Nye Avenue Corridor Study
YEAR 2035 ALTERNATIVE 2

Scale	1" = 750'	Date	March 8, 2016	Drawn by	JBH	Job #	AVI, p.c.	Figure	5



STS

Bill Nye Avenue Corridor Study
YEAR 2035 ALTERNATIVE 3

Scale	1" = 750'	Date	March 8, 2016	Drawn by	JBH	Job #	AVI, p.c.	Figure	6

Table 1. Planning Area Development Assumptions

Planning Area	City Land Use	Size (Acres)	Redevelopment Factor	20 Year Development Level [1]	ITE Land Use					Average Daily Trips				Morning Peak Hour Trips				Evening Peak Hour Trips			
					Description	ITE Code	Unit	% of Total	Size	Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
A	AUC Redevelopment	2.8	0.50	90%	Specialty Retail Center	826	1,000 ft^2	100%	11	44.32	483	242	242	0.45	5	2	3	1.49	16	7	9
B	AUC Redevelopment	29.5	0.90	30%	Specialty Retail Center	826	1,000 ft^2	100%	69	44.32	3,079	1,539	1,539	0.45	31	15	16	1.49	104	46	58
C	AUC	5.9	1.00	90%	Specialty Retail Center	826	1,000 ft^2	100%	47	44.32	2,065	1,032	1,032	0.45	21	10	11	1.49	69	31	39
D	AUR	11.5	1.00	80%	Apartment	220	DU	100%	83	6.65	554	277	277	0.51	42	8	34	1.49	124	81	43
E	AUR	8.4	1.00	80%	Apartment	220	DU	100%	61	6.65	404	202	202	0.51	31	6	25	1.49	90	59	32
F	AUC	7.4	1.00	100%	Specialty Retail Center	826	1,000 ft^2	100%	64	44.32	2,841	1,421	1,421	0.45	29	14	15	1.49	96	42	53
G	AUC	25.2	1.00	30%	Specialty Retail Center	826	1,000 ft^2	100%	66	44.32	2,924	1,462	1,462	0.45	29	14	15	1.49	98	43	55
H	SC	23.9	1.00	20%	Specialty Retail Center	826	1,000 ft^2	50%	21	44.32	922	461	461	0.45	9	4	5	1.49	31	14	17
					Office	710	1,000 ft^2	50%	21	11.03	229	115	115	1.56	32	29	4	1.49	31	5	26
I	SR	196.8	1.00	40%	Single Family Detached Housing	210	DU	100%	490	9.52	4,664	2,332	2,332	0.75	367	92	276	1	490	309	181
J	SR	208.9	1.00	50%	Single Family Detached Housing	210	DU	100%	650	9.52	6,188	3,094	3,094	0.75	488	122	366	1	650	410	241
K	Laramie High School	36.5	1.00	100%	High School	530	Students	100%	1,200	1.71	2,052	1,026	1,026	0.43	516	351	165	0.13	156	73	83
L	Elementary School	20.0	1.00	100%	Elementary School	520	Students	100%	500	1.29	645	323	323	0.45	225	124	101	0.15	75	37	38
M	SR	110.4	1.00	100%	Single Family Detached Housing	210	DU	100%	687	9.52	6,540	3,270	3,270	0.75	515	129	386	1	687	433	254
N	AUC	86.0	1.00	50%	Specialty Retail Center	826	1,000 ft^2	100%	375	44.32	16,610	8,305	8,305	0.45	168	80	87	1.49	558	246	313
O	SR	99.3	1.00	30%	Single Family Detached Housing	210	DU	100%	185	9.52	1,765	883	883	0.75	139	35	104	1	185	117	69

Note

1. Assumptions for the amount of development that is expected to occur in each planning area was provided by City staff.

Assumptions

Residential

Apartment - 1 Unit / 4,800 ft^2

Single Family Detached Housing - 1 Unit / 7,000 ft^2

Business

Specialty Retail Center and Office - 20% FAR

Specialty Retail Center - Morning peak hour rate is 30% of evening peak hour rate

Table 2. Crash Summary for Key Intersections

3rd Street / Russell Street	
Type	Number
Rear End	5
Approach Turn	1
Vehicle vs. Bicycle	1
Total	7
Rate	0.28
PDO	6
Injury	1

3rd Street / Sanders Street	
Type	Number
Sideswipe	2
Total	2
Rate	0.10
PDO	1
Injury	1

3rd Street / Boswell Drive	
Type	Number
Rear End	1
Sideswipe	1
Angle	1
Total	3
Rate	0.14
PDO	2
Injury	1

3rd Street / I-80 Ramps	
Type	Number
Rear End	3
Sideswipe	1
Angle	2
Total	6
Rate	0.23
PDO	6
Injury	0

Table 3. Intersection Operational Summary

Signalized Intersection	Existing				Do Nothing Alternative				Alternative 1				Alternative 2				Alternative 3			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3rd Street / Russell Street	**9.6**	**A**	**10.1**	**B**	**18.0**	**B**	**14.0**	**B**	**7.7**	**A**	**9.5**	**A**	**7.5**	**A**	**9.5**	**A**	**9.5**	**A**	**12.4**	**B**
Eastbound Left Turn	29.4	C	27.6	C	30.1	C	30.0	C	29.8	C	28.5	C	29.8	C	28.5	C	29.8	C	28.5	C
Eastbound Thru plus Right Turn	26	C	24.3	C	22.4	C	20.3	C	25.2	C	22.9	C	25.2	C	22.9	C	25.2	C	22.9	C
Westbound Left Turn	30.4	C	29.7	C	28.6	C	30.7	C	29.7	C	29.0	C	29.7	C	29.0	C	29.7	C	29.0	C
Westbound Thru plus Right Turn	29	C	26.4	C	29.1	C	32.3	C	29.0	C	26.6	C	29	C	26.6	C	29.0	C	26.6	C
Northbound Left Turn plus Thru plus Right Turn	3.4	A	5.1	A	16.8	B	2.2	A	1.5	A	1.5	A	1.1	A	1.5	A	4.7	A	6.8	A
Southbound Left Turn plus Thru plus Right Turn	2.9	A	6.1	A	13.3	B	17.2	B	3.4	A	8.6	A	3.4	A	8.6	A	3.6	A	13.9	B
3rd Street / Bill Nye Avenue	The intersection does not exist.				The intersection will not exist in this scenario.				**8.8**	**A**	**5.5**	**A**	**6.1**	**A**	**10.8**	**B**	This intersection is included in the roundabout.			
Eastbound Left Turn									32.2	C	32.1	C	32.2	C	32.1	C				
Eastbound Thru plus Right Turn									26.7	C	25.2	C	26.7	C	25.2	C				
Westbound Left Turn									29.8	C	28.0	C	29.8	C	28.0	C				
Westbound Thru plus Right Turn									34.4	C	32.3	C	34.4	C	32.3	C				
Northbound Left Turn									0.4	A	0.0	A	0.0	A	1.6	A				
Northbound Thru plus Right Turn									0.7	A	0.9	A	0.7	A	0.9	A				
Southbound Left Turn									9.0	A	1.7	A	0.3	A	14.6	B				
Southbound Thru plus Right Turn									9.2	A	1.1	A	3.0	A	12.9	B				
3rd Street / I-80 Ramps	The intersection is stop controlled.				**4.9**	**A**	**5.2**	**A**	**4.9**	**A**	**5.1**	**A**	**4.9**	**A**	**5.1**	**A**	This intersection is included in the roundabout.			
Westbound Left Turn					33.2	C	30.0	C	33.5	C	30.4	C	33.5	C	30.4	C				
Westbound Right Turn					39.7	D	37.7	D	40.1	D	38.1	D	40.1	D	38.2	D				
Northbound Thru					2.1	A	2.9	A	2.0	A	2.7	A	2.0	A	2.7	A				
Southbound Left Turn					0.9	A	1.6	A	0.7	A	1.2	A	0.7	A	1.2	A				
Southbound Thru					0.1	A	0.3	A	0.1	A	0.3	A	0.1	A	0.3	A				

Stop Controlled Intersections	Existing				Do Nothing Alternative				Alternative 1				Alternative 2				Alternative 3			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3rd Street / Sanders Street																				
Northbound Left Turn	7.9	A	0	A	8.3	A	9.8	A	8.2	A	9.7	A	8.2	A	9.7	A	8.2	A	9.7	A
Northbound Thru	---	---	---	---	0.0	A	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A
Eastbound Left Turn plus Thru plus Right Turn	11.1	B	11.1	B	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Eastbound Left Turn	---	---	---	---	20.9	C	54.9	F	19.2	C	47.6	E	19.2	C	47.6	E	19.2	C	47.6	E
Eastbound Thru plus Right Turn	---	---	---	---	9.7	A	11.5	B	9.5	A	11.3	B	9.5	A	11.3	B	9.5	A	11.3	B
Westbound Left Turn plus Thru plus Right Turn	12.5	B	15.4	C	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Westbound Left Turn	---	---	---	---	26.4	D	54.0	F	24.0	C	45.3	E	24.0	C	45.3	E	24.0	C	45.3	E
Westbound Thru plus Right Turn	---	---	---	---	11.2	B	11.6	B	11.0	B	11.2	B	11.0	B	11.2	B	11.0	B	11.2	B
Southbound Left Turn	8.1	A	0.0	A	9.4	A	9.9	A	9.2	A	9.6	A	9.2	A	9.6	A	9.2	A	9.6	A
Southbound Thru	0.0	A	0.0	A	0.1	A	0.6	A	0.1	A	0.5	A	0.1	A	0.5	A	0.1	A	0.5	A
3rd Street / Boswell Drive									This intersection is signalized in this scenario.				This intersection is signalized in this scenario.				This intersection is signalized in this scenario.			
Northbound Left Turn	---	---	---	---	8.2	A	9.4	A												
Eastbound Left Turn	---	---	---	---	22.4	C	65.1	F												
Eastbound Thru plus Right Turn	---	---	---	---	21.6	C	29.8	D												
Westbound Left Turn	16.1	C	21.3	C	34.4	D	105.1	F												
Westbound Right Turn	10.1	B	10.3	B	---	---	---	---												
Westbound Thru plus Right Turn	---	---	---	---	11.8	B	17	C												
Southbound Left Turn	8.5	A	8.8	A	9.4	A	10.2	B												
3rd Street / I-80 Ramps					This intersection is signalized in this scenario.				This intersection is signalized in this scenario.				This intersection is signalized in this scenario.				This intersection is signalized in this scenario.			
Westbound Left Turn plus Right Turn	15.4	C	18.3	C																
Southbound Left Turn	8.7	A	8.8	A																

Roundabout	Existing				Do Nothing Alternative				Alternative 1				Alternative 2				Alternative 3			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3rd Street / Bill Nye Avenue / I-80 Ramps	This intersection does not exist.				This intersection does not exist.				This intersection does not exist in this scenario.				This intersection does not exist in this scenario.				11.7	B	23.9	C
Eastbound Bill Nye Avenue																	5.9	A	10.2	B
Westbound Bill Nye Avenue																	13.3	B	14.9	B
Northbound 3rd Street																	13.2	B	18.3	C
Southbound 3rd Street																	9.1	A	33.2	D
I-80 Ramps																	9.8	A	14.4	B

Wyoming Department of Transportation

Traffic Program

Safety & Studies Section

Intersection: 3rd & Russell
Counted By: Miovision
Weather: Rainy/ Clear
Comments:

File Name : 3rd & Russell
Site Code : 00000000
Start Date : 9/27/2012
Page No : 1

Groups Printed- All Vehicles

	3rd Northbound					3rd Southbound					Russell Eastbound					Russell Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	41	9	0	50	4	45	0	0	49	0	1	0	0	1	10	0	11	0	21	121
07:15 AM	1	69	29	0	99	9	34	0	0	43	1	1	1	0	3	21	1	12	0	34	179
07:30 AM	0	84	29	0	113	11	30	2	0	43	0	0	0	0	0	22	4	16	0	42	198
07:45 AM	1	85	44	0	130	6	51	1	0	58	4	1	0	0	5	38	2	20	0	60	253
Total	2	279	111	0	392	30	160	3	0	193	5	3	1	0	9	91	7	59	0	157	751
08:00 AM	0	73	25	0	98	12	62	0	0	74	1	2	0	0	3	46	2	12	0	60	235
08:15 AM	0	65	15	0	80	13	41	1	0	55	1	1	0	0	2	20	1	12	0	33	170
08:30 AM	1	55	13	0	69	7	58	1	0	66	0	2	0	0	2	14	1	15	0	30	167
08:45 AM	2	65	20	0	87	6	52	3	0	61	1	5	2	0	8	18	3	11	0	32	188
Total	3	258	73	0	334	38	213	5	0	256	3	10	2	0	15	98	7	50	0	155	760
11:00 AM	0	58	21	0	79	11	57	0	0	68	2	6	3	0	11	14	1	9	0	24	182
11:15 AM	1	71	16	0	88	17	66	2	0	85	0	1	1	0	2	18	3	9	0	30	205
11:30 AM	0	61	29	0	90	11	76	4	0	91	2	1	2	0	5	25	3	13	0	41	227
11:45 AM	0	75	17	0	92	19	77	1	0	97	0	4	0	0	4	26	3	19	0	48	241
Total	1	265	83	0	349	58	276	7	0	341	4	12	6	0	22	83	10	50	0	143	855
12:00 PM	0	63	21	0	84	30	88	2	0	120	2	10	2	0	14	40	3	13	0	56	274
12:15 PM	0	60	21	0	81	11	93	2	0	106	0	1	1	0	2	26	3	18	0	47	236
12:30 PM	0	57	20	0	77	16	62	0	0	78	1	0	0	0	1	24	0	23	0	47	203
12:45 PM	1	83	23	0	107	20	72	2	0	94	3	1	1	0	5	20	4	24	0	48	254
Total	1	263	85	0	349	77	315	6	0	398	6	12	4	0	22	110	10	78	0	198	967
03:30 PM	1	91	15	0	107	17	81	2	0	100	2	5	2	0	9	25	6	17	0	48	264
03:45 PM	1	66	22	0	89	13	78	0	0	91	2	3	2	0	7	24	2	19	0	45	232
Total	2	157	37	0	196	30	159	2	0	191	4	8	4	0	16	49	8	36	0	93	496
04:00 PM	1	72	41	0	114	19	77	3	0	99	0	1	0	0	1	23	1	14	0	38	252
04:15 PM	0	73	33	0	106	27	67	4	0	98	1	1	1	0	3	28	3	16	0	47	254
04:30 PM	0	109	44	0	153	31	77	1	0	109	1	8	3	0	12	27	2	27	0	56	330
04:45 PM	1	82	37	0	120	20	86	2	0	108	3	6	3	0	12	32	4	28	0	64	304
Total	2	336	155	0	493	97	307	10	0	414	5	16	7	0	28	110	10	85	0	205	1140
05:00 PM	2	104	46	0	152	32	111	3	0	146	2	8	2	0	12	41	1	15	0	57	367
05:15 PM	1	72	28	0	101	26	90	0	0	116	1	7	0	0	8	46	1	12	0	59	284
Grand Total	14	1734	618	0	2366	388	1631	36	0	2055	30	76	26	0	132	628	54	385	0	1067	5620
Apprch %	0.6	73.3	26.1	0		18.9	79.4	1.8	0		22.7	57.6	19.7	0		58.9	5.1	36.1	0		
Total %	0.2	30.9	11	0	42.1	6.9	29	0.6	0	36.6	0.5	1.4	0.5	0	2.3	11.2	1	6.9	0	19	

Wyoming Department of Transportation

Traffic Program

Safety & Studies Section

Intersection: 3rd & Russell
Counted By: Miovision
Weather: Rainy/ Clear
Comments:

File Name : 3rd & Russell
Site Code : 00000000
Start Date : 9/27/2012
Page No : 2

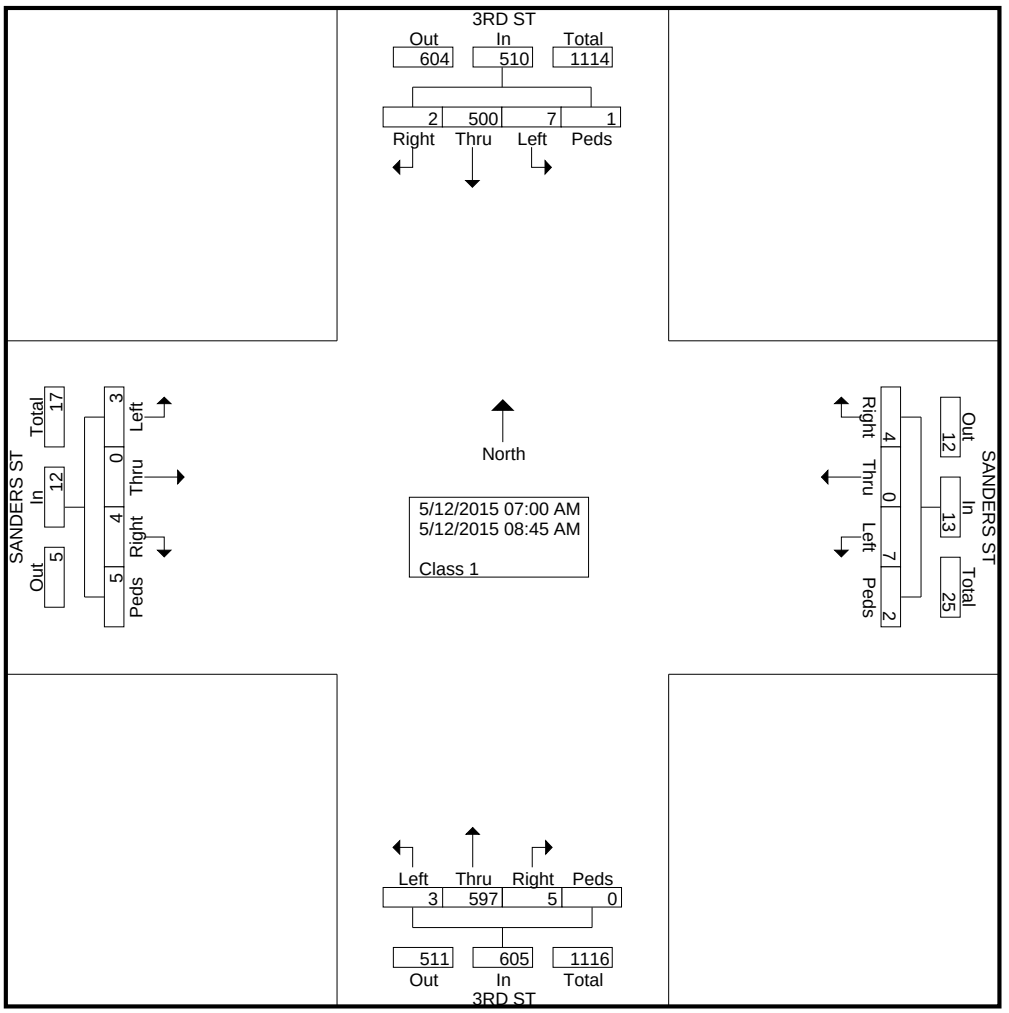
	3rd Northbound					3rd Southbound					Russell Eastbound					Russell Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**1**	69	29	0	99	9	34	0	0	43	1	1	**1**	0	3	21	1	12	0	34	179
07:30 AM	0	84	29	0	113	11	30	**2**	0	43	0	0	0	0	0	22	**4**	16	0	42	198
07:45 AM	1	**85**	**44**	0	**130**	6	51	1	0	58	**4**	1	0	0	**5**	38	2	**20**	0	**60**	**253**
08:00 AM	0	73	25	0	98	**12**	**62**	0	0	**74**	1	**2**	0	0	3	**46**	2	12	0	60	235
Total Volume	2	311	127	0	440	38	177	3	0	218	6	4	1	0	11	127	9	60	0	196	865
% App. Total	0.5	70.7	28.9	0		17.4	81.2	1.4	0		54.5	36.4	9.1	0		64.8	4.6	30.6	0		
PHF	.500	.915	.722	.000	.846	.792	.714	.375	.000	.736	.375	.500	.250	.000	.550	.690	.563	.750	.000	.817	.855
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	0	61	**29**					**4**			**2**		**2**				**3**				
11:45 AM	0	**75**	17	0	**92**	19	77	1	0	97	0	4	0	0	4	26	3	**19**	0	48	241
12:00 PM	0	63	21	0	84	**30**	88	2	0	**120**	2	**10**	2	0	**14**	**40**	3	13	0	**56**	**274**
12:15 PM	0	60	21	0	81	11	**93**	2	0	106	0	1	1	0	2	26	3	18	0	47	236
Total Volume	0	259	88	0	347	71	334	9	0	414	4	16	5	0	25	117	12	63	0	192	978
% App. Total	0	74.6	25.4	0		17.1	80.7	2.2	0		16	64	20	0		60.9	6.2	32.8	0		
PHF	.000	.863	.759	.000	.943	.592	.898	.563	.000	.863	.500	.400	.625	.000	.446	.731	1.00	.829	.000	.857	.892
Peak Hour Analysis From 02:00 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	**109**			**153**							**8**	**3**		**12**						
04:45 PM	1	82	37	0	120	20	86	2	0	108	**3**	6	3	0	12	32	**4**	**28**	0	**64**	304
05:00 PM	**2**	104	**46**	0	152	**32**	**111**	**3**	0	**146**	2	8	2	0	12	41	1	15	0	57	**367**
05:15 PM	1	72	28	0	101	26	90	0	0	116	1	7	0	0	8	**46**	1	12	0	59	284
Total Volume	4	367	155	0	526	109	364	6	0	479	7	29	8	0	44	146	8	82	0	236	1285
% App. Total	0.8	69.8	29.5	0		22.8	76	1.3	0		15.9	65.9	18.2	0		61.9	3.4	34.7	0		
PHF	.500	.842	.842	.000	.859	.852	.820	.500	.000	.820	.583	.906	.667	.000	.917	.793	.500	.732	.000	.922	.875

All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #3 3RD&SANDERSAM
Site Code : 1
Start Date : 5/12/2015
Page No : 1

Groups Printed- Class 1

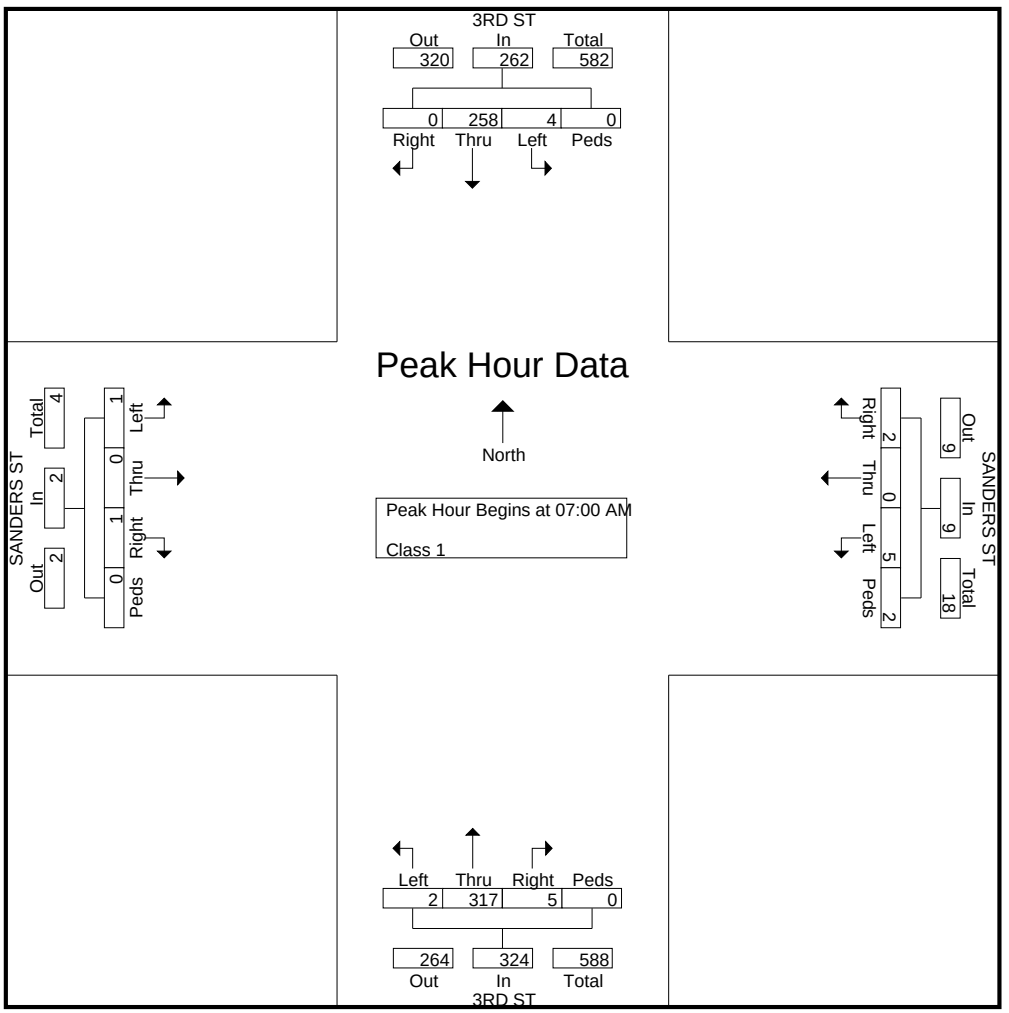
	3RD ST Southbound				SANDERS ST Westbound				3RD ST Northbound				SANDERS ST Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
07:00 AM	0	61	0	0	2	0	1	0	1	98	1	0	1	0	0	0	165
07:15 AM	0	65	1	0	0	0	0	0	2	72	0	0	0	0	1	0	141
07:30 AM	0	67	3	0	0	0	2	0	1	71	0	0	0	0	0	0	144
07:45 AM	0	65	0	0	0	0	2	2	1	76	1	0	0	0	0	0	147
Total	0	258	4	0	2	0	5	2	5	317	2	0	1	0	1	0	597
08:00 AM	1	61	0	0	1	0	2	0	0	59	0	0	1	0	1	0	126
08:15 AM	0	59	0	1	0	0	0	0	0	71	0	0	0	0	0	3	134
08:30 AM	0	59	0	0	1	0	0	0	0	79	0	0	1	0	0	2	142
08:45 AM	1	63	3	0	0	0	0	0	0	71	1	0	1	0	1	0	141
Total	2	242	3	1	2	0	2	0	0	280	1	0	3	0	2	5	543
Grand Total	2	500	7	1	4	0	7	2	5	597	3	0	4	0	3	5	1140
Apprch %	0.4	98	1.4	0.2	30.8	0	53.8	15.4	0.8	98.7	0.5	0	33.3	0	25	41.7	
Total %	0.2	43.9	0.6	0.1	0.4	0	0.6	0.2	0.4	52.4	0.3	0	0.4	0	0.3	0.4	



All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #3 3RD&SANDERSAM
Site Code : 1
Start Date : 5/12/2015
Page No : 2

	3RD ST Southbound					SANDERS ST Westbound					3RD ST Northbound					SANDERS ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	61	0	0	61	2	0	1	0	3	1	98	1	0	100	1	0	0	0	1	165
07:15 AM	0	65	1	0	66	0	0	0	0	0	2	72	0	0	74	0	0	1	0	1	141
07:30 AM	0	67	3	0	70	0	0	2	0	2	1	71	0	0	72	0	0	0	0	0	144
07:45 AM	0	65	0	0	65	0	0	2	2	4	1	76	1	0	78	0	0	0	0	0	147
Total Volume	0	258	4	0	262	2	0	5	2	9	5	317	2	0	324	1	0	1	0	2	597
% App. Total	0	98.5	1.5	0		22.2	0	55.6	22.2		1.5	97.8	0.6	0		50	0	50	0		
PHF	.000	.963	.333	.000	.936	.250	.000	.625	.250	.563	.625	.809	.500	.000	.810	.250	.000	.250	.000	.500	.905

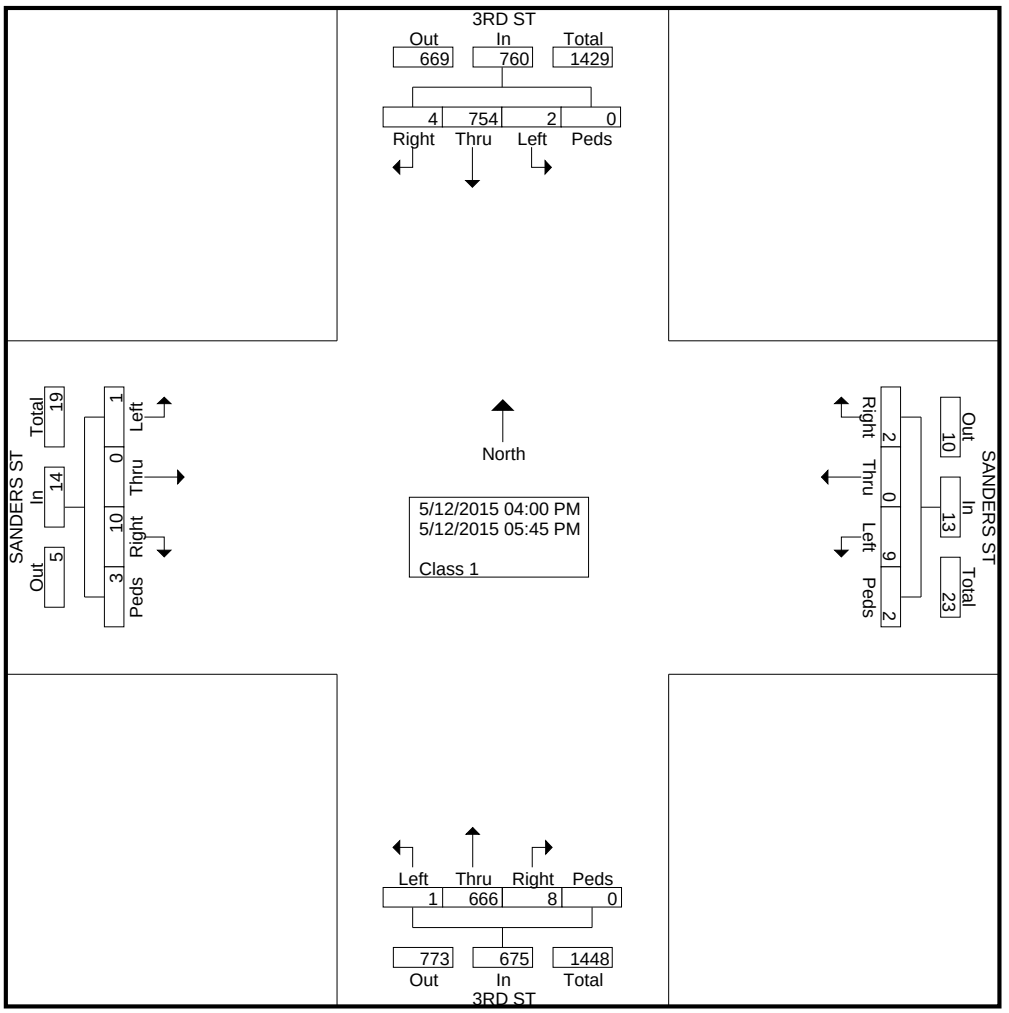


All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #3 3RD&SANDERSPM
Site Code : 1
Start Date : 5/12/2015
Page No : 1

Groups Printed- Class 1

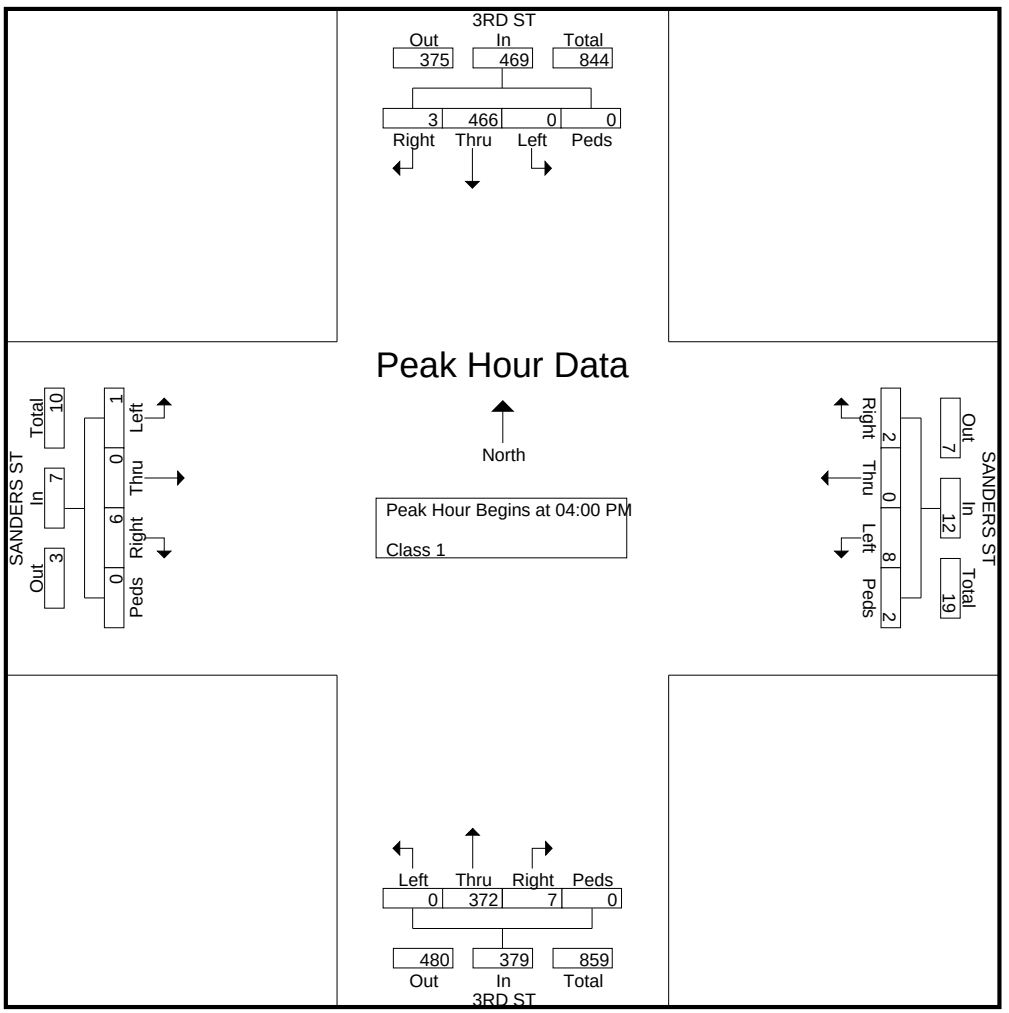
	3RD ST Southbound				SANDERS ST Westbound				3RD ST Northbound				SANDERS ST Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
04:00 PM	1	134	0	0	0	0	1	0	1	97	0	0	1	0	0	0	235
04:15 PM	0	128	0	0	1	0	2	0	1	110	0	0	1	0	1	0	244
04:30 PM	1	108	0	0	0	0	2	0	1	83	0	0	4	0	0	0	199
04:45 PM	1	96	0	0	1	0	3	2	4	82	0	0	0	0	0	0	189
Total	3	466	0	0	2	0	8	2	7	372	0	0	6	0	1	0	867
05:00 PM	0	76	1	0	0	0	0	0	0	87	0	0	2	0	0	0	166
05:15 PM	1	72	1	0	0	0	0	0	0	78	0	0	2	0	0	0	154
05:30 PM	0	72	0	0	0	0	0	0	0	61	0	0	0	0	0	0	133
05:45 PM	0	68	0	0	0	0	1	0	1	68	1	0	0	0	0	3	142
Total	1	288	2	0	0	0	1	0	1	294	1	0	4	0	0	3	595
Grand Total	4	754	2	0	2	0	9	2	8	666	1	0	10	0	1	3	1462
Apprch %	0.5	99.2	0.3	0	15.4	0	69.2	15.4	1.2	98.7	0.1	0	71.4	0	7.1	21.4	
Total %	0.3	51.6	0.1	0	0.1	0	0.6	0.1	0.5	45.6	0.1	0	0.7	0	0.1	0.2	



All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #3 3RD&SANDERSPM
Site Code : 1
Start Date : 5/12/2015
Page No : 2

	3RD ST Southbound					SANDERS ST Westbound					3RD ST Northbound					SANDERS ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	134	0	0	135	0	0	1	0	1	1	97	0	0	98	1	0	0	0	1	235
04:15 PM	0	128	0	0	128	1	0	2	0	3	1	110	0	0	111	1	0	1	0	2	244
04:30 PM	1	108	0	0	109	0	0	2	0	2	1	83	0	0	84	4	0	0	0	4	199
04:45 PM	1	96	0	0	97	1	0	3	2	6	4	82	0	0	86	0	0	0	0	0	189
Total Volume	3	466	0	0	469	2	0	8	2	12	7	372	0	0	379	6	0	1	0	7	867
% App. Total	0.6	99.4	0	0		16.7	0	66.7	16.7		1.8	98.2	0	0		85.7	0	14.3	0		
PHF	.750	.869	.000	.000	.869	.500	.000	.667	.250	.500	.438	.845	.000	.000	.854	.375	.000	.250	.000	.438	.888

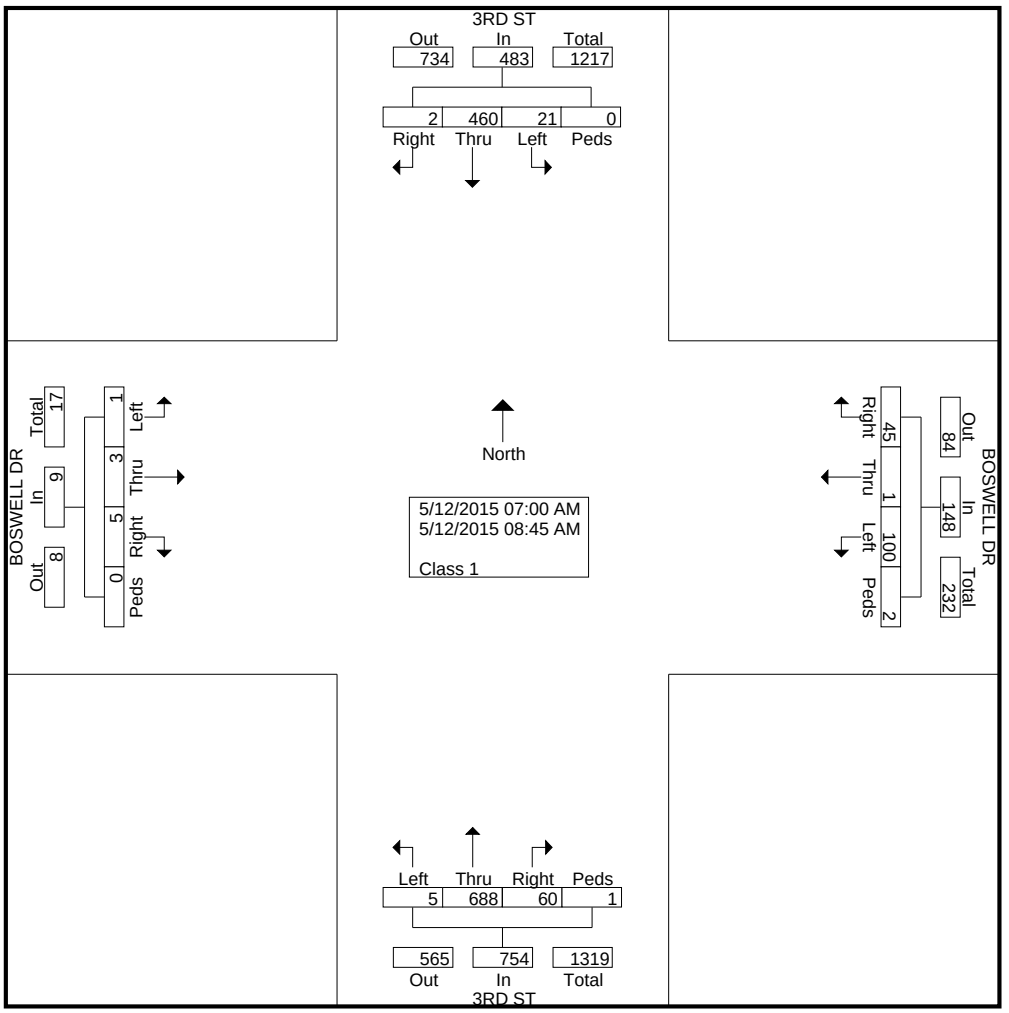


All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #2 3RD&BOSWELLAM
Site Code : 1
Start Date : 5/12/2015
Page No : 1

Groups Printed- Class 1

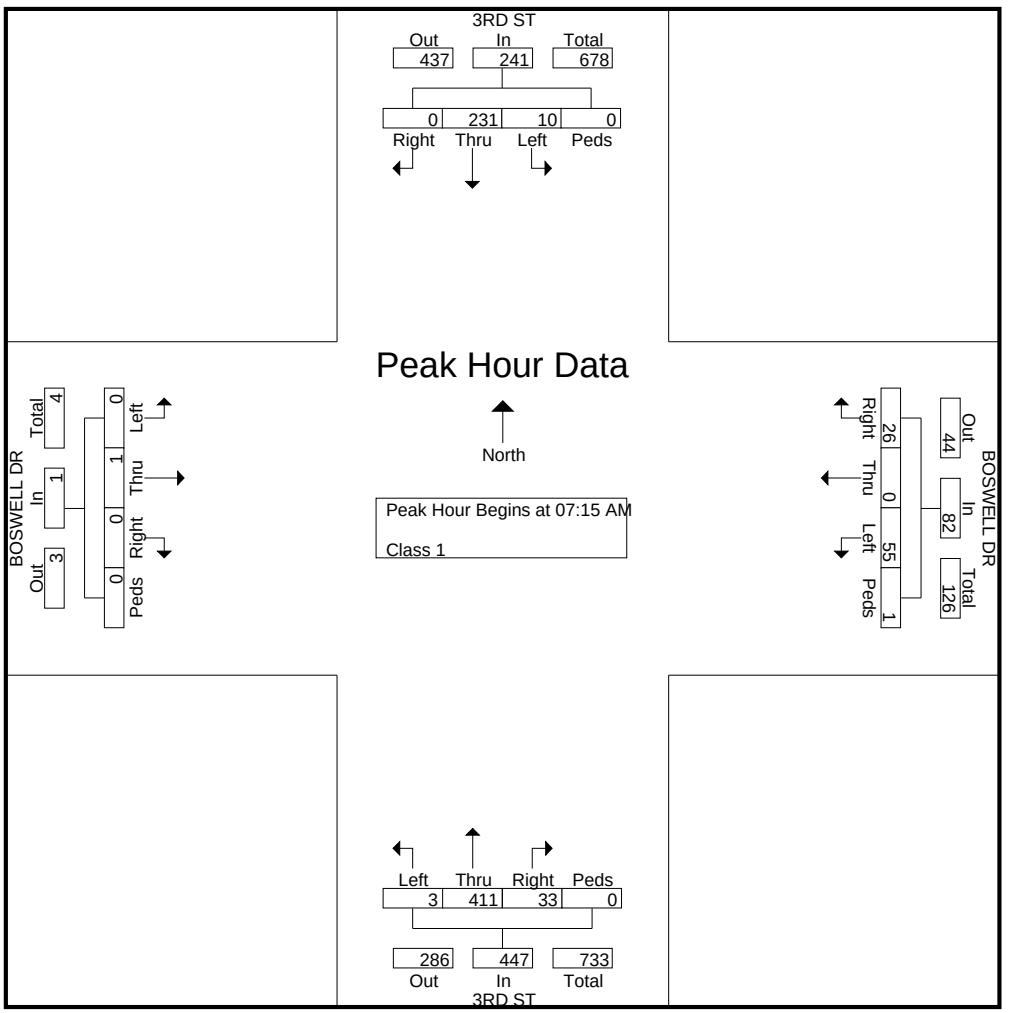
	3RD ST Southbound				BOSWELL DR Westbound				3RD ST Northbound				BOSWELL DR Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
07:00 AM	0	44	0	0	5	0	20	1	8	57	0	0	0	0	0	0	135
07:15 AM	0	44	4	0	8	0	17	1	8	81	0	0	0	0	0	0	163
07:30 AM	0	40	1	0	5	0	19	0	8	117	0	0	0	1	0	0	191
07:45 AM	0	82	4	0	7	0	9	0	5	114	3	0	0	0	0	0	224
Total	0	210	9	0	25	0	65	2	29	369	3	0	0	1	0	0	713
08:00 AM	0	65	1	0	6	0	10	0	12	99	0	0	0	0	0	0	193
08:15 AM	1	58	3	0	4	0	13	0	3	72	0	0	2	0	1	0	157
08:30 AM	0	72	3	0	4	1	5	0	7	68	1	0	0	1	0	0	162
08:45 AM	1	55	5	0	6	0	7	0	9	80	1	1	3	1	0	0	169
Total	2	250	12	0	20	1	35	0	31	319	2	1	5	2	1	0	681
Grand Total	2	460	21	0	45	1	100	2	60	688	5	1	5	3	1	0	1394
Apprch %	0.4	95.2	4.3	0	30.4	0.7	67.6	1.4	8	91.2	0.7	0.1	55.6	33.3	11.1	0	
Total %	0.1	33	1.5	0	3.2	0.1	7.2	0.1	4.3	49.4	0.4	0.1	0.4	0.2	0.1	0	



All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #2 3RD&BOSWELLAM
Site Code : 1
Start Date : 5/12/2015
Page No : 2

	3RD ST Southbound					BOSWELL DR Westbound					3RD ST Northbound					BOSWELL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	44	4	0	48	8	0	17	1	26	8	81	0	0	89	0	0	0	0	0	163
07:30 AM	0	40	1	0	41	5	0	19	0	24	8	117	0	0	125	0	1	0	0	1	191
07:45 AM	0	82	4	0	86	7	0	9	0	16	5	114	3	0	122	0	0	0	0	0	224
08:00 AM	0	65	1	0	66	6	0	10	0	16	12	99	0	0	111	0	0	0	0	0	193
Total Volume	0	231	10	0	241	26	0	55	1	82	33	411	3	0	447	0	1	0	0	1	771
% App. Total	0	95.9	4.1	0		31.7	0	67.1	1.2		7.4	91.9	0.7	0		0	100	0	0		
PHF	.000	.704	.625	.000	.701	.813	.000	.724	.250	.788	.688	.878	.250	.000	.894	.000	.250	.000	.000	.250	.860

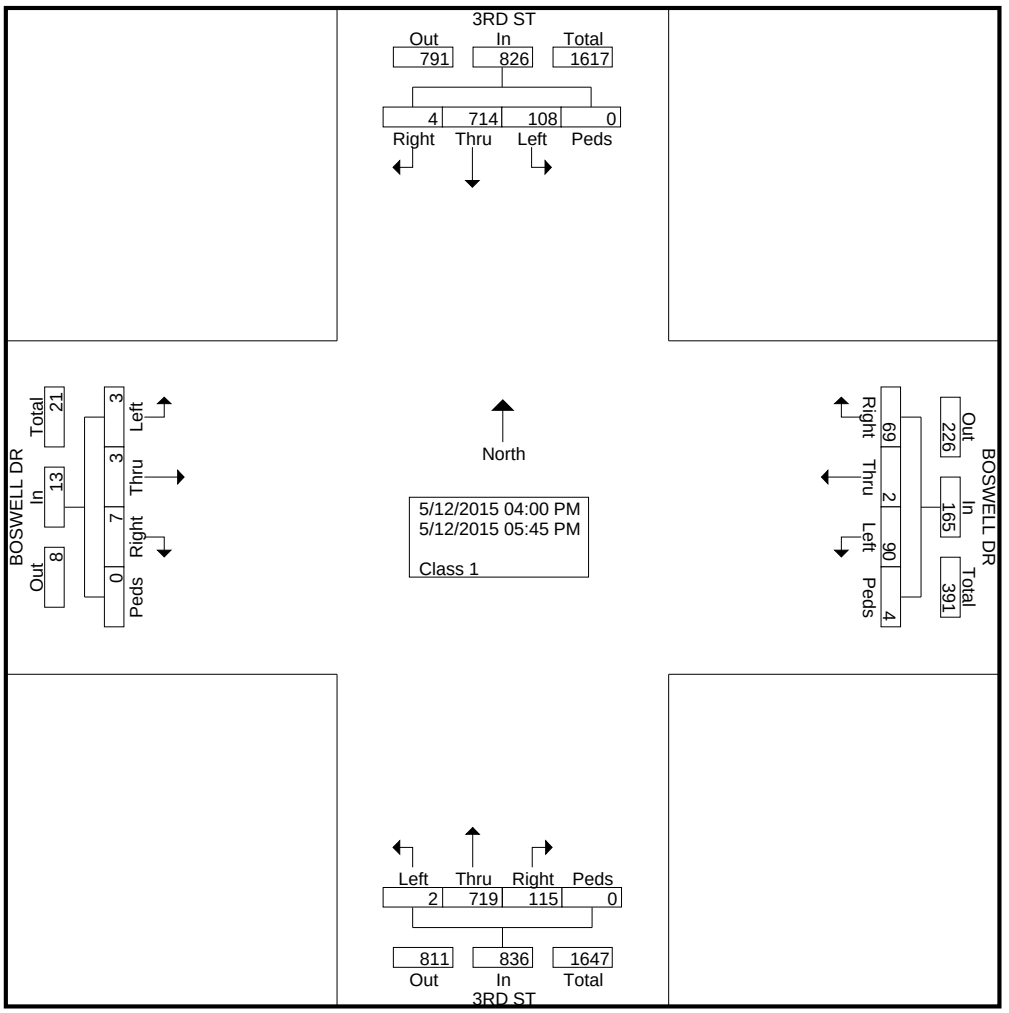


All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #2 3RD&BOSWELLPM
Site Code : 1
Start Date : 5/12/2015
Page No : 1

Groups Printed- Class 1

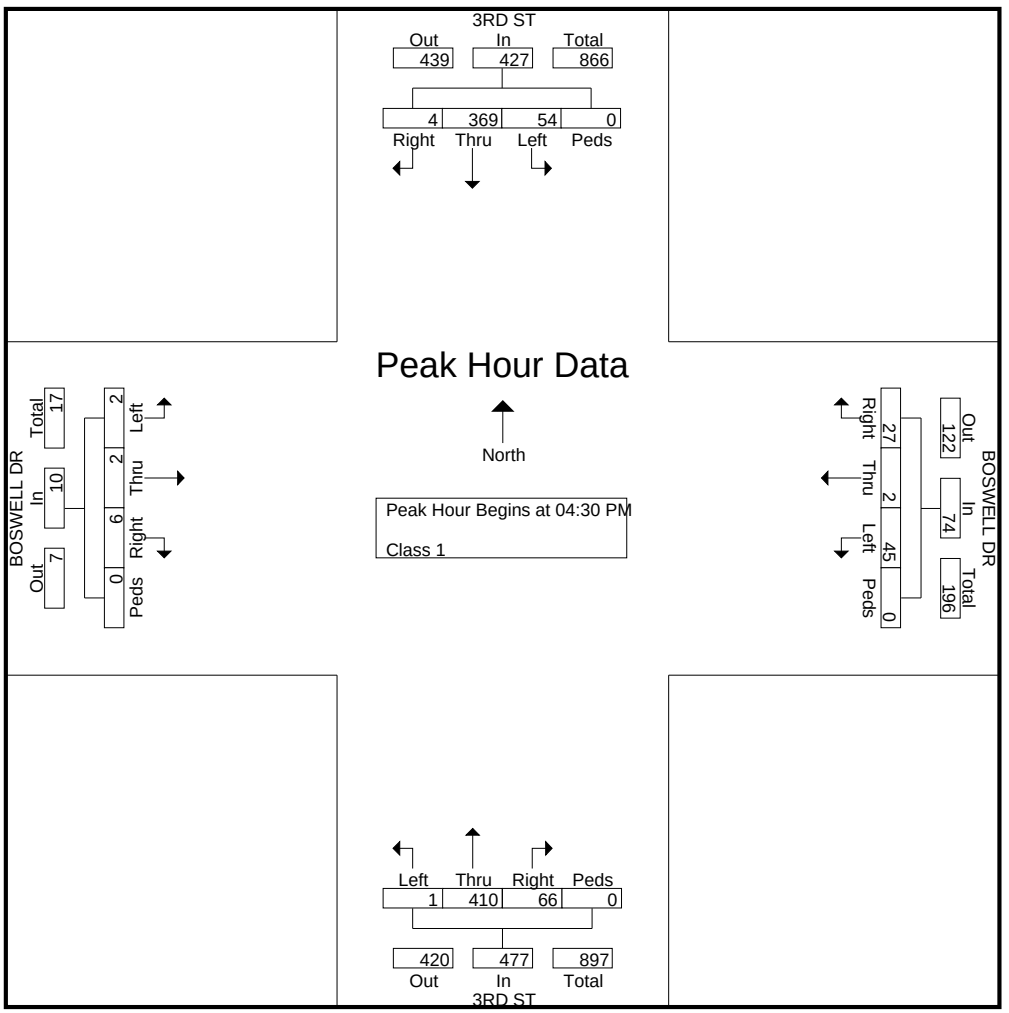
	3RD ST Southbound				BOSWELL DR Westbound				3RD ST Northbound				BOSWELL DR Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
04:00 PM	0	103	9	0	7	0	7	0	10	87	1	0	0	0	0	0	224
04:15 PM	0	76	7	0	6	0	16	0	19	77	0	0	1	0	0	0	202
04:30 PM	0	75	9	0	6	1	10	0	16	107	0	0	0	0	0	0	224
04:45 PM	3	92	16	0	6	1	13	0	13	104	1	0	3	1	0	0	253
Total	3	346	41	0	25	2	46	0	58	375	2	0	4	1	0	0	903
05:00 PM	0	104	14	0	8	0	9	0	24	84	0	0	1	0	1	0	245
05:15 PM	1	98	15	0	7	0	13	0	13	115	0	0	2	1	1	0	266
05:30 PM	0	82	20	0	18	0	12	4	11	67	0	0	0	0	0	0	214
05:45 PM	0	84	18	0	11	0	10	0	9	78	0	0	0	1	1	0	212
Total	1	368	67	0	44	0	44	4	57	344	0	0	3	2	3	0	937
Grand Total	4	714	108	0	69	2	90	4	115	719	2	0	7	3	3	0	1840
Apprch %	0.5	86.4	13.1	0	41.8	1.2	54.5	2.4	13.8	86	0.2	0	53.8	23.1	23.1	0	
Total %	0.2	38.8	5.9	0	3.8	0.1	4.9	0.2	6.2	39.1	0.1	0	0.4	0.2	0.2	0	



All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #2 3RD&BOSWELLPM
Site Code : 1
Start Date : 5/12/2015
Page No : 2

	3RD ST Southbound					BOSWELL DR Westbound					3RD ST Northbound					BOSWELL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	75	9	0	84	6	1	10	0	17	16	107	0	0	123	0	0	0	0	0	224
04:45 PM	3	92	16	0	111	6	1	13	0	20	13	104	1	0	118	3	1	0	0	4	253
05:00 PM	0	104	14	0	118	8	0	9	0	17	24	84	0	0	108	1	0	1	0	2	245
05:15 PM	1	98	15	0	114	7	0	13	0	20	13	115	0	0	128	2	1	1	0	4	266
Total Volume	4	369	54	0	427	27	2	45	0	74	66	410	1	0	477	6	2	2	0	10	988
% App. Total	0.9	86.4	12.6	0		36.5	2.7	60.8	0		13.8	86	0.2	0		60	20	20	0		
PHF	.333	.887	.844	.000	.905	.844	.500	.865	.000	.925	.688	.891	.250	.000	.932	.500	.500	.500	.000	.625	.929

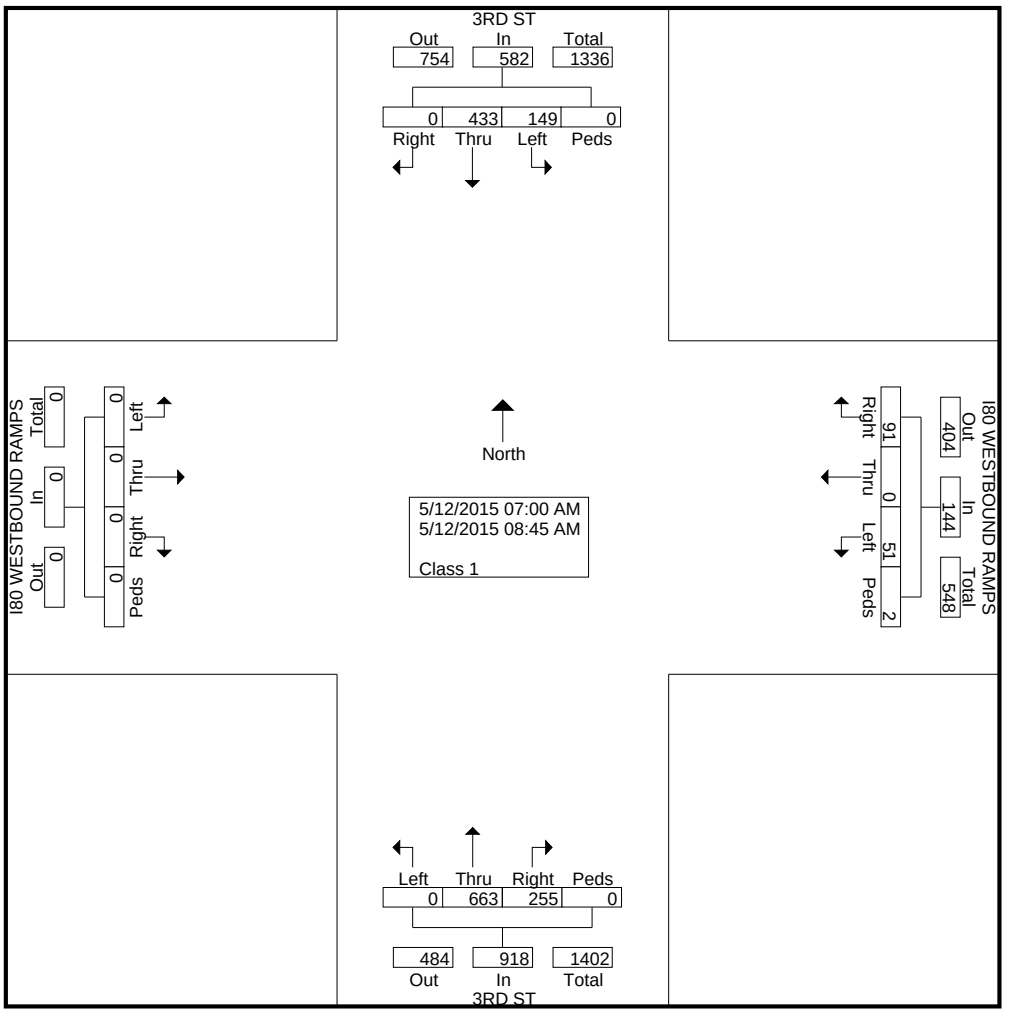


All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #1 3RD&I80WESTBOUNDRAMPSAM
Site Code : 1
Start Date : 5/12/2015
Page No : 1

Groups Printed- Class 1

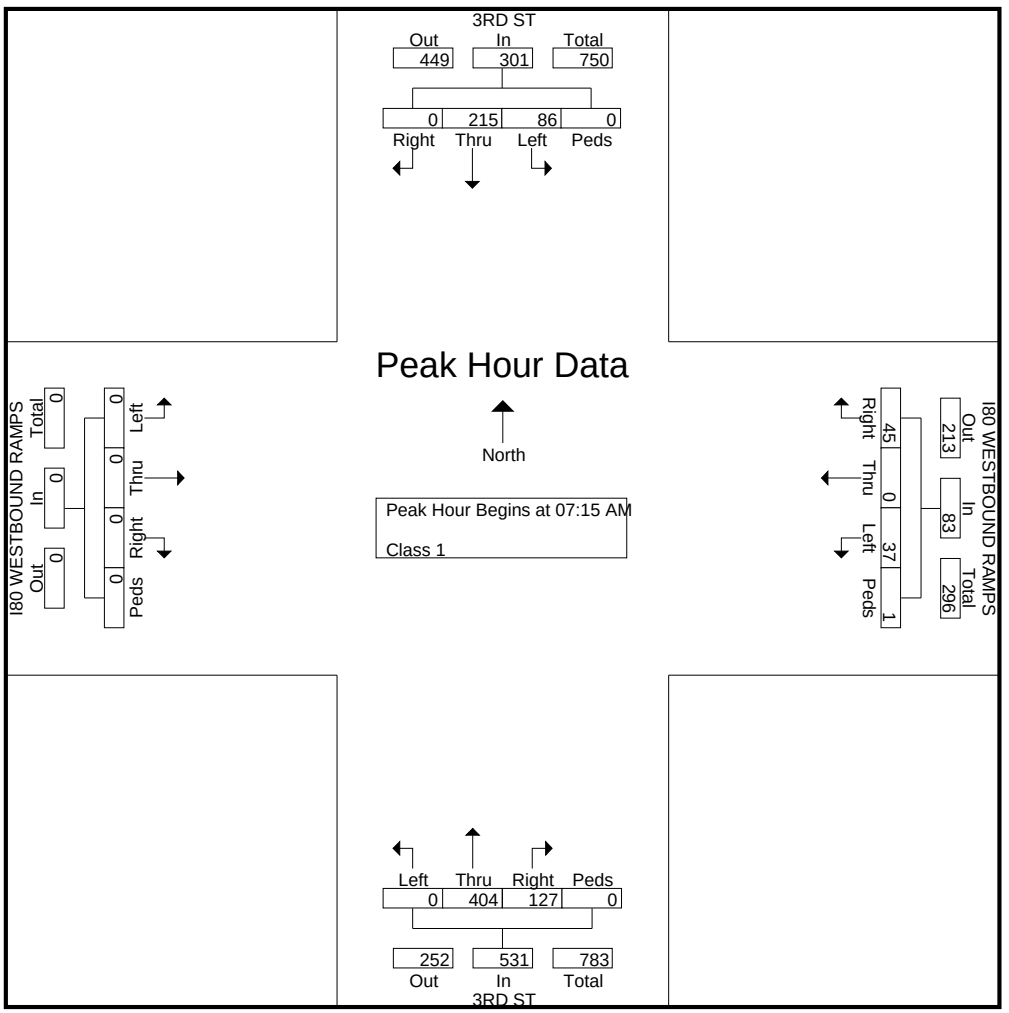
	3RD ST Southbound				I80 WESTBOUND RAMPS Westbound				3RD ST Northbound				I80 WESTBOUND RAMPS Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
07:00 AM	0	45	15	0	13	0	2	1	40	56	0	0	0	0	0	0	172
07:15 AM	0	44	19	0	11	0	5	1	36	84	0	0	0	0	0	0	200
07:30 AM	0	45	24	0	11	0	6	0	31	117	0	0	0	0	0	0	234
07:45 AM	0	68	21	0	16	0	13	0	36	102	0	0	0	0	0	0	256
Total	0	202	79	0	51	0	26	2	143	359	0	0	0	0	0	0	862
08:00 AM	0	58	22	0	7	0	13	0	24	101	0	0	0	0	0	0	225
08:15 AM	0	57	16	0	9	0	3	0	26	62	0	0	0	0	0	0	173
08:30 AM	0	60	19	0	12	0	6	0	24	65	0	0	0	0	0	0	186
08:45 AM	0	56	13	0	12	0	3	0	38	76	0	0	0	0	0	0	198
Total	0	231	70	0	40	0	25	0	112	304	0	0	0	0	0	0	782
Grand Total	0	433	149	0	91	0	51	2	255	663	0	0	0	0	0	0	1644
Apprch %	0	74.4	25.6	0	63.2	0	35.4	1.4	27.8	72.2	0	0	0	0	0	0	
Total %	0	26.3	9.1	0	5.5	0	3.1	0.1	15.5	40.3	0	0	0	0	0	0	



All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #1 3RD&I80WESTBOUNDRAMPSAM
Site Code : 1
Start Date : 5/12/2015
Page No : 2

	3RD ST Southbound					I80 WESTBOUND RAMPS Westbound					3RD ST Northbound					I80 WESTBOUND RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	44	19	0	63	11	0	5	1	17	36	84	0	0	120	0	0	0	0	0	200
07:30 AM	0	45	24	0	69	11	0	6	0	17	31	117	0	0	148	0	0	0	0	0	234
07:45 AM	0	68	21	0	89	16	0	13	0	29	36	102	0	0	138	0	0	0	0	0	256
08:00 AM	0	58	22	0	80	7	0	13	0	20	24	101	0	0	125	0	0	0	0	0	225
Total Volume	0	215	86	0	301	45	0	37	1	83	127	404	0	0	531	0	0	0	0	0	915
% App. Total	0	71.4	28.6	0		54.2	0	44.6	1.2		23.9	76.1	0	0		0	0	0	0		
PHF	.000	.790	.896	.000	.846	.703	.000	.712	.250	.716	.882	.863	.000	.000	.897	.000	.000	.000	.000	.000	.894

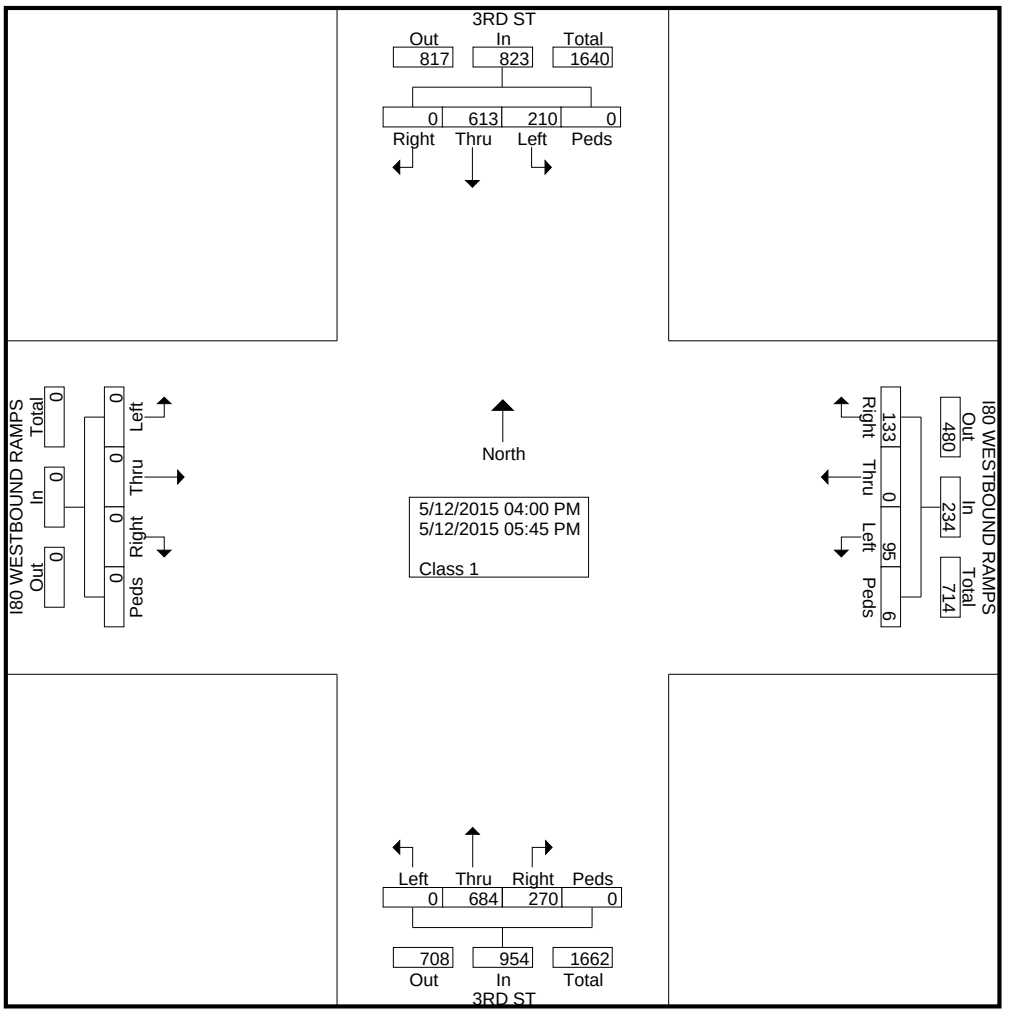


All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #1 3RD&I80WESTBOUNDRAMPSPM
Site Code : 1
Start Date : 5/12/2015
Page No : 1

Groups Printed- Class 1

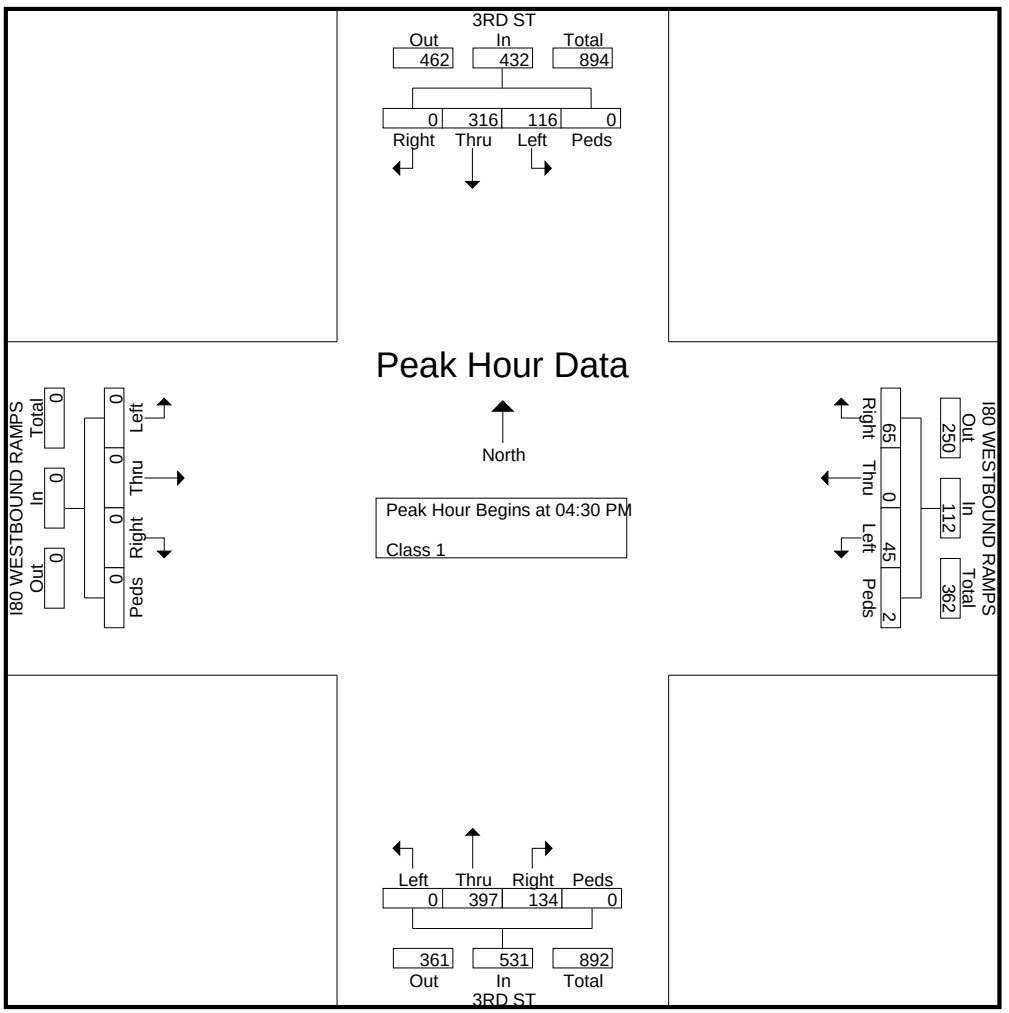
	3RD ST Southbound				I80 WESTBOUND RAMPS Westbound				3RD ST Northbound				I80 WESTBOUND RAMPS Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
04:00 PM	0	81	19	0	12	0	17	0	48	88	0	0	0	0	0	0	265
04:15 PM	0	80	20	0	21	0	12	2	48	72	0	0	0	0	0	0	255
04:30 PM	0	52	27	0	15	0	10	0	48	105	0	0	0	0	0	0	257
04:45 PM	0	81	30	0	17	0	11	0	28	94	0	0	0	0	0	0	261
Total	0	294	96	0	65	0	50	2	172	359	0	0	0	0	0	0	1038
05:00 PM	0	98	29	0	16	0	11	2	22	97	0	0	0	0	0	0	275
05:15 PM	0	85	30	0	17	0	13	0	36	101	0	0	0	0	0	0	282
05:30 PM	0	77	22	0	16	0	8	1	13	61	0	0	0	0	0	0	198
05:45 PM	0	59	33	0	19	0	13	1	27	66	0	0	0	0	0	0	218
Total	0	319	114	0	68	0	45	4	98	325	0	0	0	0	0	0	973
Grand Total	0	613	210	0	133	0	95	6	270	684	0	0	0	0	0	0	2011
Apprch %	0	74.5	25.5	0	56.8	0	40.6	2.6	28.3	71.7	0	0	0	0	0	0	
Total %	0	30.5	10.4	0	6.6	0	4.7	0.3	13.4	34	0	0	0	0	0	0	



All Traffic Data Services,Inc.
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

File Name : #1 3RD&I80WESTBOUNDRAMPSPM
Site Code : 1
Start Date : 5/12/2015
Page No : 2

	3RD ST Southbound					I80 WESTBOUND RAMPS Westbound					3RD ST Northbound					I80 WESTBOUND RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	52	27	0	79	15	0	10	0	25	48	105	0	0	153	0	0	0	0	0	257
04:45 PM	0	81	30	0	111	17	0	11	0	28	28	94	0	0	122	0	0	0	0	0	261
05:00 PM	0	98	29	0	127	16	0	11	2	29	22	97	0	0	119	0	0	0	0	0	275
05:15 PM	0	85	30	0	115	17	0	13	0	30	36	101	0	0	137	0	0	0	0	0	282
Total Volume	0	316	116	0	432	65	0	45	2	112	134	397	0	0	531	0	0	0	0	0	1075
% App. Total	0	73.1	26.9	0		58	0	40.2	1.8		25.2	74.8	0	0		0	0	0	0		
PHF	.000	.806	.967	.000	.850	.956	.000	.865	.250	.933	.698	.945	.000	.000	.868	.000	.000	.000	.000	.000	.953



Traffic Signal Warrant Analysis

Project Name	**Bill Nye Corridor Study**
Project/File #	**City of Laramie**
Scenario	**Year 2035 Total - Do Nothing**

Intersection Information	
Major Street Name	3rd Street
North/South or East/West	N/S
Speed Limit	35 mph or less
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	100%
Minor Street Name	Boswell Drive
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	100%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Sustainable Traffic Solutions, Inc.

Traffic Signal Warrant Analysis

3rd Street (Major Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	5	610	20	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	5	640	65	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,345	0

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	30	365	5	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	85	660	10	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,155	0

Boswell Drive (Minor Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	3	2	1	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	15	5	10	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			36	0

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	50	1	55	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	45	5	65	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			221	0

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	4
Peak Hour Reviewed?	PM
3rd Street (Major Street) Data	
Combined Approach Volume	1,610
Boswell Drive (Minor Street) Data	
High Volume Side Volume	115
High Volume Side Average Delay (Sec.)	105.1
High Volume Side # of Approach Lanes	2 or more
Low Volume Side Volume (leave blank if T)	30

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	Yes
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	Yes
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (3rd	Yes
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	Yes
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	Yes
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	Yes
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	Yes

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	Yes
Include Right Turn Reduction for Vehicular Volume?	Yes

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

Warrant 8: Roadway Network	
Common intersection of two major routes?*	Yes
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	Yes
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	Yes
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:

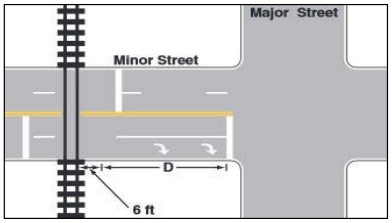
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which Boswell Drive approach?	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	Yes
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	Yes
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:

- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	Yes
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	105.1

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Bill Nye Corridor Study
Project/File #	City of Laramie
Scenario	Year 2035 Total - Do Nothing

Intersection Information			
Major Street (N/S Road)	3rd Street	Minor Street (E/W Road)	Boswell Drive
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	2500 vehicles	Total Approach Volume	257 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

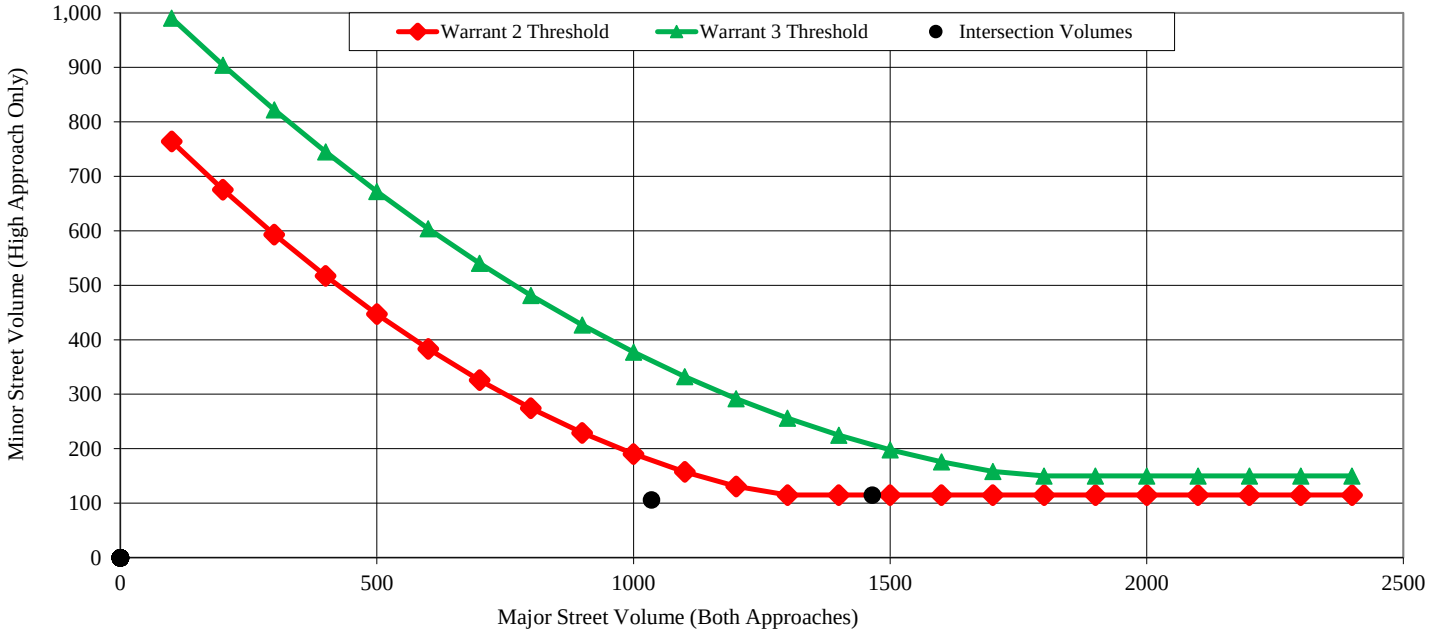
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	2 hours	0 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	200	100	160 (Cond. A) & 80 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1755 total, 115 minor, 3.4 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Pedestrian Crossing Volume

Traffic Signal Warrant Analysis

Project Name	**Bill Nye Corridor Study**
Project/File #	**City of Laramie**
Scenario	**Year 2035 Total - Alts 1 & 2**

Intersection Information	
Major Street Name	3rd Street
North/South or East/West	N/S
Speed Limit	35 mph or less
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	100%
Minor Street Name	Bill Nye Avenue
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	50%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Sustainable Traffic Solutions, Inc.

Traffic Signal Warrant Analysis

3rd Street (Major Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	5	575	55	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	5	575	130	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,345	0

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	70	314	5	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	170	600	10	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,169	0

Bill Nye Avenue (Minor Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	3	2	1	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	15	5	10	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			36	0

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	100	1	110	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	95	5	135	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			446	0

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	4
Peak Hour Reviewed?	PM
3rd Street (Major Street) Data	
Combined Approach Volume	1,755
Bill Nye Avenue (Minor Street) Data	
High Volume Side Volume	235
High Volume Side Average Delay (Sec.)	329.9
High Volume Side # of Approach Lanes	2 or more
Low Volume Side Volume (leave blank if T)	29

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	Yes
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	Yes
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (3rd	Yes
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	Yes
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	Yes
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	Yes
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	Yes

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	Yes
Include Right Turn Reduction for Vehicular Volume?	Yes

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

Warrant 8: Roadway Network	
Common intersection of two major routes?*	Yes
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	Yes
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	Yes
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:

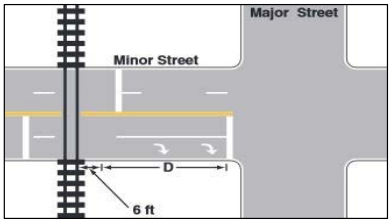
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which Bill Nye Avenue	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	Yes
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	Yes
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:

- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	Yes
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	329.9

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Bill Nye Corridor Study
Project/File #	City of Laramie
Scenario	Year 2035 Total - Alts 1 & 2

Intersection Information			
Major Street (N/S Road)	3rd Street	Minor Street (E/W Road)	Bill Nye Avenue
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	2514 vehicles	Total Approach Volume	482 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	50 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

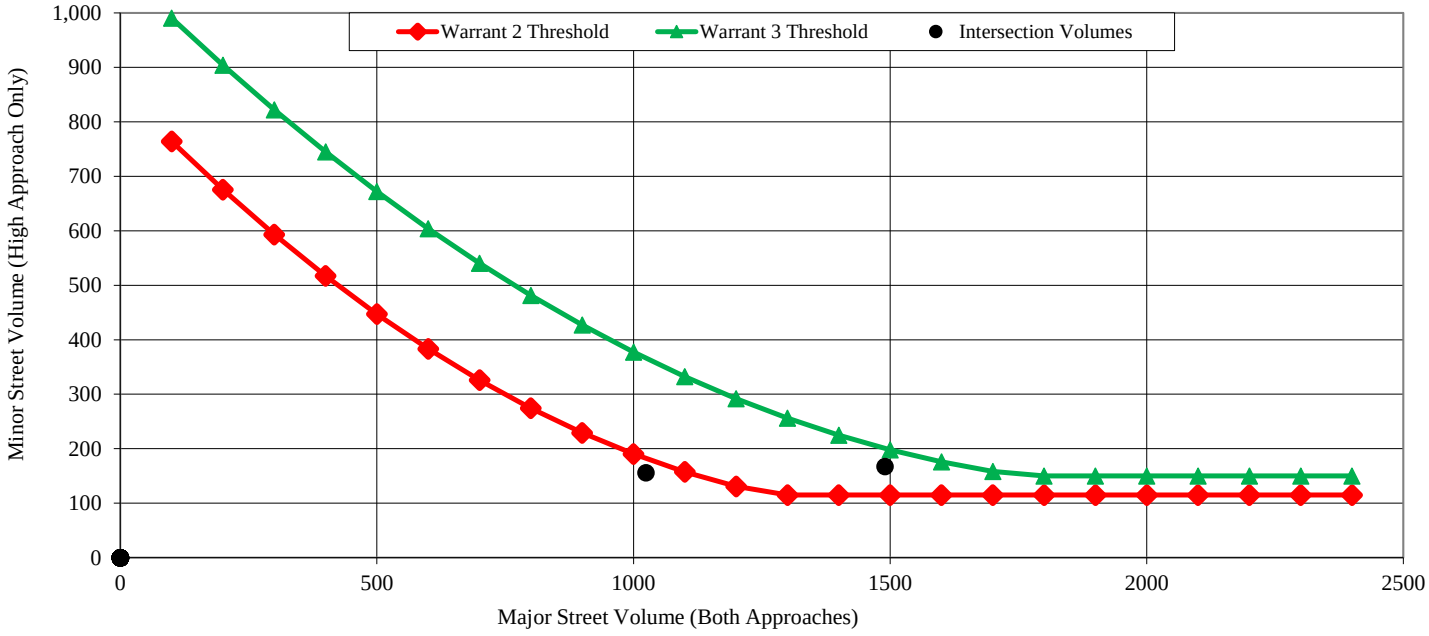
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	2 hours	1 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	200	100	160 (Cond. A) & 80 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Satisfied**	**Not Satisfied**
Required values reached for	2019 total, 235 minor, 21.5 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Pedestrian Crossing Volume

Traffic Signal Warrant Analysis

Project Name	**Bill Nye Corridor Study**
Project/File #	**City of Laramie**
Scenario	**Year 2035 Total - All Alts**

Intersection Information	
Major Street Name	3rd Street
North/South or East/West	N/S
Speed Limit	35 mph or less
# of Approach Lanes	2 or more
% of Right Turn Traffic to Include	100%
Minor Street Name	I-80 Ramps
# of Approach Lanes	1
% of Right Turn Traffic to Include	100%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Sustainable Traffic Solutions, Inc.

Traffic Signal Warrant Analysis

3rd Street (Major Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM		585	155	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM		611	164	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,515	0

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	115	287		
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	154	553		
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			1,109	0

I-80 Ramps (Minor Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			0	0

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM	45		65	
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM	55		100	
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			265	0

Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

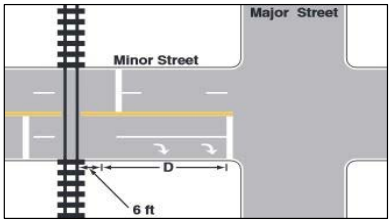
Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	T
Peak Hour Reviewed?	PM
3rd Street (Major Street) Data	
Combined Approach Volume	1,482
I-80 Ramps (Minor Street) Data	
High Volume Side Volume	155
High Volume Side Average Delay (Sec.)	40.5
High Volume Side # of Approach Lanes	1
Low Volume Side Volume (leave blank if T)	0

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	Yes

Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which I-80 Ramps approach?	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	Yes
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	Yes
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?**	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:
- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.
- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	Yes
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	Yes
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?**	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 7: Crash Experience	
Number of reportable crashes (*types susceptible to correction by a traffic control signal*) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?**	Yes
Include Right Turn Reduction for Vehicular Volume?	Yes

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (3rd	Yes
Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	Yes
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	Yes
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour?	Yes
Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?**	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 8: Roadway Network	
Common intersection of two major routes?*	Yes
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	Yes
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	Yes
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:
- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	Yes
Number of *correctable* crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	40.5

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Bill Nye Corridor Study
Project/File #	City of Laramie
Scenario	Year 2035 Total - All Alts

Intersection Information			
Major Street (N/S Road)	3rd Street	Minor Street (E/W Road)	I-80 Ramps
Analyzed with	2 or more approach lanes	Analyzed with	1 Approach Lane
Total Approach Volume	2624 vehicles	Total Approach Volume	265 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

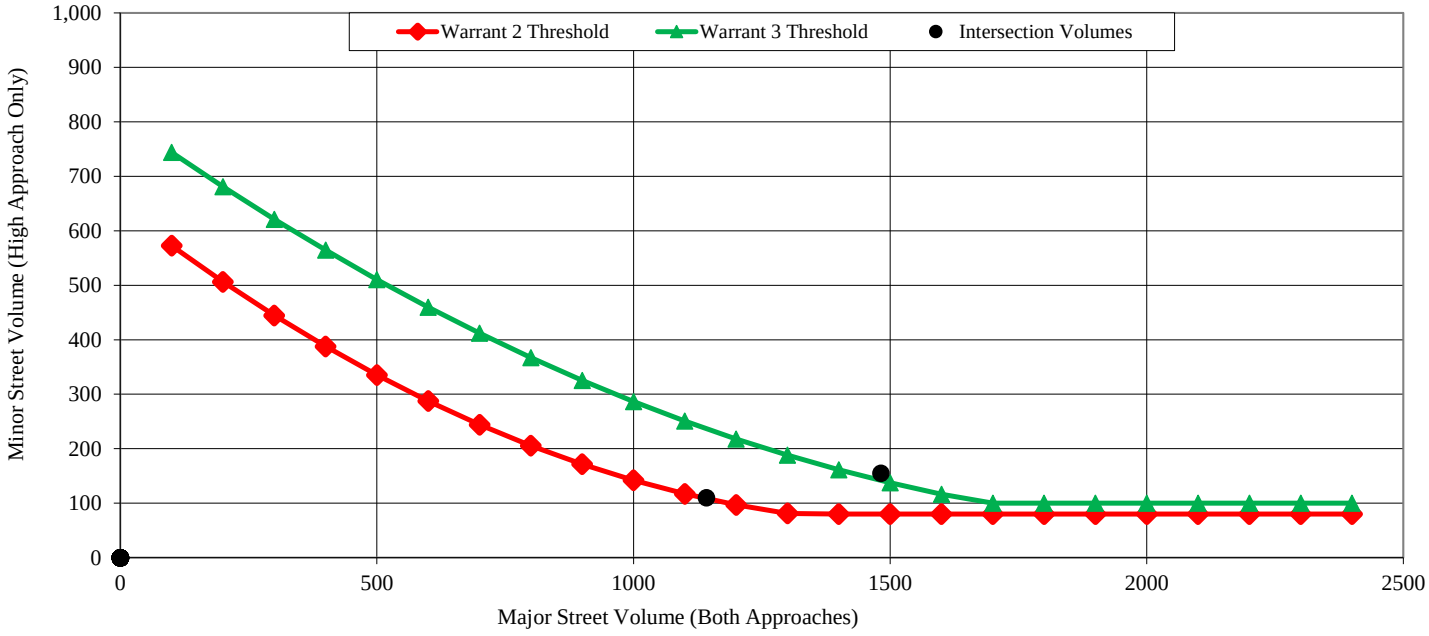
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	2 hours	1 (Cond. A) & 2 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	2 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Satisfied**
Required values reached for	1637 total, 155 minor, 1.7 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Pedestrian Crossing Volume

CRASH HISTORY IN LARAMIE FOR THE INTERSECTION OF S 3RD ST & RUSSELL ST FOR THE YEARS 2010 THROUGH APPROXIMATELY AUG 2015

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION
2011														
01/26/2011	746	01246	RUSSELL ST		0	0	Intersection Related	Rear End (Front to Rear)	West	Slowing	Motor Vehicle in Transport on Roadway	Daylight	Ice/Frost	Drove too Fast for Conditions
			S 3RD ST						West	Stopped in Traffic			Snow	No Improper Driving
04/05/2011	1150	05045	RUSSELL ST		0	0	Intersection	Angle (Front to Side), Opposing Direction	East	Straight Ahead	Motor Vehicle in Transport on Roadway	Daylight	Dry	Ran Red Light
			S 3RD ST						South	Straight Ahead				No Improper Driving
2012														
05/02/2012	1703	05366	S 3RD ST	400.52	0	0	Intersection Related	Rear End (Front to Rear)	South	Straight Ahead	Motor Vehicle in Transport on Roadway	Daylight	Dry	Following too Close
			RUSSELL ST						South	Turning Left				No Improper Driving
08/29/2012	1715	11263	S 3RD ST	400.52	0	0	Intersection	Rear End (Front to Rear)	South	Straight Ahead	Motor Vehicle in Transport on Roadway	Daylight	Dry	Following too Close
			RUSSELL ST						South	Stopped in Traffic				No Improper Driving
2013														
09/21/2013	1545	12017	S 3RD ST	400.52	1	0	Intersection Related	Not a Collision w/2 Vehicles in Transport	South	Turning Left	Pedacycle	Daylight	Dry	No Improper Driving
			RUSSELL ST											
2014														
02/22/2014	1608	03067	RUSSELL ST		0	0	Intersection Related	Rear End (Front to Rear)	West	Straight Ahead	Motor Vehicle in Transport on Roadway	Daylight	Ice/Frost	Drove too Fast for Conditions
			S 3RD ST						West	Stopped in Traffic				No Improper Driving
2015														
02/16/2015	1706	02279	S 3RD ST	400.52	0	0	Intersection Related	Rear End (Front to Rear)	North	Stopped in Traffic	Motor Vehicle in Transport on Roadway	Daylight	Ice/Frost	No Improper Driving
			RUSSELL ST						North	Straight Ahead			Snow	Drove too Fast for Conditions

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION

TOTAL CRASHES IN THIS REPORT 7

PDO CRASHES 6
INJURY CRASHES 1
FATAL CRASHES 0

TOTAL PERSONS INJURED 1
TOTAL PERSONS KILLED 0

	NUMBER PERSONS INJURED	NUMBER PERSONS KILLED	PDO* CRASHES	INJURY CRASHES	FATAL CRASHES	TOTAL CRASHES
2011	0	0	2	0	0	2
2012	0	0	2	0	0	2
2013	1	0	0	1	0	1
2014	0	0	1	0	0	1
2015	0	0	1	0	0	1
TOTAL	**1**	**0**	**6**	**1**	**0**	**7**

***PDO = Property Damage Only Crashes; No Injuries, No Fatalities**

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

CRASH HISTORY IN LARAMIE FOR THE INTERSECTION OF
S 3RD ST & SANDERS ST
FOR THE YEARS 2010 THROUGH APPROXIMATELY AUG 2015

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION
2010														
11/13/2010	1242	15630	S 3RD ST	400.65	0	0	Intersection	Angle Same Direction (Front to Side)	North	Turning Left	Motor Vehicle in Transport on Roadway	Daylight	Dry	Improper Turn or No Signal
			SANDERS ST						North	Straight Ahead				No Improper Driving
2011														
09/27/2011	1345	12989	S 3RD ST		1	0	Intersection Related	Angle Same Direction (Front to Side)	Northwest	Changing Lanes	Motor Vehicle in Transport on Roadway	Daylight	Dry	Improper Turn or No Signal
			SANDERS ST						North	Straight Ahead				No Improper Driving

TOTAL CRASHES IN THIS REPORT 2

PDO CRASHES 1
INJURY CRASHES 1
FATAL CRASHES 0

TOTAL PERSONS INJURED 1
TOTAL PERSONS KILLED 0

	NUMBER PERSONS INJURED	NUMBER PERSONS KILLED	PDO* CRASHES	INJURY CRASHES	FATAL CRASHES	TOTAL CRASHES
2010	0	0	1	0	0	1
2011	1	0	0	1	0	1
TOTAL	**1**	**0**	**1**	**1**	**0**	**2**

***PDO = Property Damage Only Crashes; No Injuries, No Fatalities**

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

CRASH HISTORY IN LARAMIE FOR THE INTERSECTION OF
S 3RD ST & PALMER DR/ S 4TH ST
FOR THE YEARS 2010 THROUGH APPROXIMATELY AUG 2015

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION

TOTAL CRASHES IN THIS REPORT 0

PDO CRASHES 0
INJURY CRASHES 0
FATAL CRASHES 0

TOTAL PERSONS INJURED 0
TOTAL PERSONS KILLED 0

	NUMBER PERSONS INJURED	NUMBER PERSONS KILLED	PDO* CRASHES	INJURY CRASHES	FATAL CRASHES	TOTAL CRASHES
	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**

***PDO = Property Damage Only Crashes; No Injuries, No Fatalities**

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

CRASH HISTORY IN LARAMIE FOR THE INTERSECTION OF
S 3RD ST & ~~PALMER DR~~ Boswell Drive
FOR THE YEARS 2010 THROUGH APPROXIMATELY AUG 2015

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION
2011														
08/03/2011	1324	10298	S 3RD ST	400.82	2	0	Intersection	Angle Right (Front to Side, includes Broadside	South	Turning Left	Motor Vehicle in Transport on Roadway	Daylight	Dry	Failed to Yield ROW
			BOSWELL DR						North	Straight Ahead				No Improper Driving
									West	Stopped in Traffic				No Improper Driving
2014														
09/19/2014	1724	12513	S 3RD ST	400.82	0	0	Intersection Related	Sideswipe Same Direction (Passing)	South	Straight Ahead	Motor Vehicle in Transport on Roadway	Daylight	Dry	Failed to Yield ROW
			BOSWELL DR						South	Straight Ahead				No Improper Driving
2015														
05/24/2015	1434	05911	BOSWELL DR		0	0	Intersection Related	Rear End (Front to Rear)	West	Stopped in Traffic	Motor Vehicle in Transport on Roadway	Daylight	Dry	No Improper Driving
			S 3RD ST						West	Straight Ahead				Following too Close

TOTAL CRASHES IN THIS REPORT	3
PDO CRASHES	2
INJURY CRASHES	1
FATAL CRASHES	0
TOTAL PERSONS INJURED	2
TOTAL PERSONS KILLED	0

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION

	NUMBER PERSONS INJURED	NUMBER PERSONS KILLED	PDO* CRASHES	INJURY CRASHES	FATAL CRASHES	TOTAL CRASHES
2011	2	0	0	1	0	1
2014	0	0	1	0	0	1
2015	0	0	1	0	0	1
TOTAL	**2**	**0**	**2**	**1**	**0**	**3**

***PDO = Property Damage Only Crashes; No Injuries, No Fatalities**

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

CRASH HISTORY IN LARAMIE FOR THE INTERSECTION OF S 3RD ST & I 80 EXIT 313 WB OFF/ON RAMPS FOR THE YEARS 2010 THROUGH APPROXIMATELY AUG 2015

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION
2010														
08/06/2010	1829	10333	I 80 RAMP		0	0	Interchange Area Intersection	Rear End (Front to Rear)	West	Stopped in Traffic	Motor Vehicle in Transport on Roadway	Daylight	Dry	No Improper Driving
			S 3RD ST						West	Straight Ahead				Failed to Yield ROW
2012														
10/14/2012	857	13640	S 3RD ST	401.01	0	0	Intersection	Angle (Front to Side), Opposing Direction	East	Turning Left	Motor Vehicle in Transport on Roadway	Daylight	Dry	Failed to Yield ROW
			I 80 RAMP						North	Straight Ahead				No Improper Driving
2014														
06/16/2014	1100	08801	I 80 RAMP EXIT 313 WB OFF		0	0	Interchange Area Intersection	Rear End (Front to Rear)	West	Slowing	Motor Vehicle in Transport on Roadway	Daylight	Dry	No Improper Driving
			S 3RD ST						West	Stopped in Traffic				Disregarded Other Road Mar
10/24/2014	1550	14016	S 3RD ST	401.01	0	0	Intersection	Angle Right (Front to Side, includes Broadside	West	Turning Left	Motor Vehicle in Transport on Roadway	Daylight	Dry	Failed to Yield ROW
			I 80 RAMP EXIT 313 WB OFF						South	Turning Left				No Improper Driving
12/05/2014	1710	16352	S 3RD ST	401.01	0	0	Intersection	Angle Same Direction (Front to Side)	South	Turning Left	Motor Vehicle in Transport on Roadway	Dusk	Dry	Improper Turn or No Signal
			I 80 RAMP EXIT 313 WB ON						South	Straight Ahead				Erratic/Reckless/Careless/Ag
														No Improper Driving
2015														
02/20/2015	1505	02916	I 80 RAMP EXIT 313 WB OFF		0	0	Interchange Area Intersection	Rear End (Front to Rear)	West	Slowing	Motor Vehicle in Transport on Roadway	Daylight	Wet	Following too Close
			S 3RD ST						West	Stopped in Traffic				No Improper Driving

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov

DATE	TIME	REPORT NUMBER	CRASH LOCATION	MILEPOST	NUM INJ	NUM KIL	JUNCTION RELATION	MANNER_OF COLLISION	DIRECTION	ACTIVITY PRIOR	FIRST HARMFUL EVENT	LIGHT COND	ROAD COND	DRIVER ACTION

TOTAL CRASHES IN THIS REPORT 6

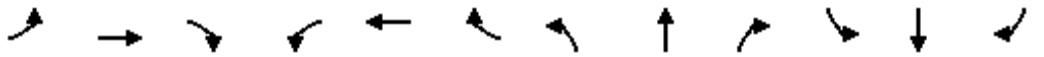
PDO CRASHES 6
INJURY CRASHES 0
FATAL CRASHES 0

TOTAL PERSONS INJURED 0
TOTAL PERSONS KILLED 0

	NUMBER PERSONS INJURED	NUMBER PERSONS KILLED	PDO* CRASHES	INJURY CRASHES	FATAL CRASHES	TOTAL CRASHES
2010	0	0	1	0	0	1
2012	0	0	1	0	0	1
2014	0	0	3	0	0	3
2015	0	0	1	0	0	1
TOTAL	**0**	**0**	**6**	**0**	**0**	**6**

***PDO = Property Damage Only Crashes; No Injuries, No Fatalities**

CREATED BY: Lorraine Lucero; WYDOT Highway Safety; (307) 777-4270; lorraine.lucero@wyo.gov



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	5	5	195	10	145	5	480	190	95	205	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	12	6	6	229	12	171	6	565	224	112	241	6
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	147	147	379	18	257	55	1382	542	357	1023	27
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.22	0.22	0.22	0.68	0.68	0.68
Sat Flow, veh/h	1196	721	721	1397	88	1258	5	2045	803	393	1513	40
Grp Volume(v), veh/h	12	0	12	229	0	183	436	0	359	144	0	215
Grp Sat Flow(s),veh/h/ln	1196	0	1441	1397	0	1347	1567	0	1286	525	0	1420
Q Serve(g_s), s	0.7	0.0	0.5	11.0	0.0	8.8	0.0	0.0	16.7	7.5	0.0	4.0
Cycle Q Clear(g_c), s	9.4	0.0	0.5	11.5	0.0	8.8	16.7	0.0	16.7	24.2	0.0	4.0
Prop In Lane	1.00		0.50	1.00		0.93	0.01		0.62	0.78		0.03
Lane Grp Cap(c), veh/h	197	0	294	379	0	275	1111	0	869	446	0	960
V/C Ratio(X)	0.06	0.00	0.04	0.60	0.00	0.67	0.39	0.00	0.41	0.32	0.00	0.22
Avail Cap(c_a), veh/h	257	0	367	449	0	342	1111	0	869	446	0	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	22.4	27.0	0.0	25.7	15.3	0.0	15.3	11.4	0.0	4.3
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.7	0.0	3.4	1.0	0.0	1.4	1.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	4.4	0.0	3.5	7.6	0.0	6.3	2.1	0.0	1.7
LnGrp Delay(d),s/veh	30.1	0.0	22.4	28.6	0.0	29.1	16.3	0.0	16.8	13.3	0.0	4.9
LnGrp LOS	C		C	C		C	B		B	B		A
Approach Vol, veh/h		24			412			795			359	
Approach Delay, s/veh		26.3			28.8			16.5			8.3	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.5		18.5		51.5		18.5
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		18.7		11.4		26.2		13.5
Green Ext Time (p_c), s		9.0		1.1		7.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	1	10	0	20	5	655	10	10	390	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	12	0	24	6	771	12	12	459	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	882	1279	232	1041	1276	391	465	0	0	782	0	0
Stage 1	485	485	-	788	788	-	-	-	-	-	-	-
Stage 2	397	794	-	253	488	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	241	165	770	184	165	608	1093	-	-	832	-	-
Stage 1	532	550	-	350	400	-	-	-	-	-	-	-
Stage 2	600	398	-	729	548	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	227	160	770	180	160	608	1093	-	-	832	-	-
Mov Cap-2 Maneuver	227	160	-	180	160	-	-	-	-	-	-	-
Stage 1	527	540	-	347	396	-	-	-	-	-	-	-
Stage 2	571	394	-	714	538	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.3	16.3	0.1	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1093	-	-	227	770	180	608	832	-	-
HCM Lane V/C Ratio	0.005	-	-	0.005	0.002	0.065	0.039	0.014	-	-
HCM Control Delay (s)	8.3	0	-	20.9	9.7	26.4	11.2	9.4	0.1	-
HCM Lane LOS	A	A	-	C	A	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	0	-	-

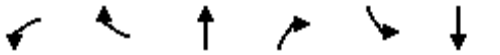
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	2	1	50	1	55	5	610	20	30	365	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	2	1	59	1	65	6	718	24	35	429	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	874	1256	218	1027	1247	371	435	0	0	741	0	0
Stage 1	503	503	-	741	741	-	-	-	-	-	-	-
Stage 2	371	753	-	286	506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	244	170	786	189	172	626	1121	-	-	862	-	-
Stage 1	519	540	-	374	421	-	-	-	-	-	-	-
Stage 2	622	416	-	697	538	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	210	162	786	180	164	626	1121	-	-	862	-	-
Mov Cap-2 Maneuver	210	162	-	180	164	-	-	-	-	-	-	-
Stage 1	516	518	-	372	419	-	-	-	-	-	-	-
Stage 2	553	414	-	665	516	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	22.5	0.1	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	210	220	180	596	862	-	-
HCM Lane V/C Ratio	0.005	-	-	0.017	0.016	0.327	0.111	0.041	-	-
HCM Control Delay (s)	8.2	-	-	22.4	21.6	34.4	11.8	9.4	-	-
HCM Lane LOS	A	-	-	C	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	1.3	0.4	0.1	-	-



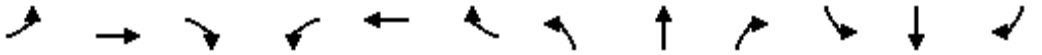
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	65	570	155	115	300
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1569	1569	1569	1569
Adj Flow Rate, veh/h	53	76	671	0	135	353
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	120	107	2383	1066	669	2383
Arrive On Green	0.08	0.08	0.80	0.00	1.00	1.00
Sat Flow, veh/h	1494	1333	3059	1333	763	3059
Grp Volume(v), veh/h	53	76	671	0	135	353
Grp Sat Flow(s),veh/h/ln	1494	1333	1490	1333	763	1490
Q Serve(g_s), s	2.4	3.9	4.1	0.0	1.2	0.0
Cycle Q Clear(g_c), s	2.4	3.9	4.1	0.0	5.2	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	120	107	2383	1066	669	2383
V/C Ratio(X)	0.44	0.71	0.28	0.00	0.20	0.15
Avail Cap(c_a), veh/h	359	320	2383	1066	669	2383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	31.4	1.8	0.0	0.2	0.0
Incr Delay (d2), s/veh	2.5	8.3	0.3	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.7	1.7	0.0	0.4	0.0
LnGrp Delay(d),s/veh	33.2	39.7	2.1	0.0	0.9	0.1
LnGrp LOS	C	D	A		A	A
Approach Vol, veh/h	129		671			488
Approach Delay, s/veh	37.0		2.1			0.3
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		60.2				60.2		9.8
Change Period (Y+Rc), s		* 4.2				* 4.2		4.2
Max Green Setting (Gmax), s		* 45				* 45		16.8
Max Q Clear Time (g_c+I1), s		6.1				7.2		5.9
Green Ext Time (p_c), s		10.2				10.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	35	10	235	10	205	10	465	260	270	555	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	12	41	12	276	12	241	12	547	306	318	653	12
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	297	87	409	16	325	60	1128	622	478	926	17
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	1.00	1.00	1.00	0.63	0.63	0.63
Sat Flow, veh/h	1122	1167	342	1346	64	1279	12	1803	993	609	1480	27
Grp Volume(v), veh/h	12	0	53	276	0	253	479	0	386	362	0	621
Grp Sat Flow(s),veh/h/ln	1122	0	1508	1346	0	1343	1556	0	1252	694	0	1423
Q Serve(g_s), s	0.7	0.0	1.9	14.0	0.0	12.1	0.0	0.0	0.0	28.6	0.0	20.3
Cycle Q Clear(g_c), s	12.8	0.0	1.9	15.9	0.0	12.1	0.0	0.0	0.0	28.6	0.0	20.3
Prop In Lane	1.00		0.23	1.00		0.95	0.03		0.79	0.88		0.02
Lane Grp Cap(c), veh/h	194	0	384	409	0	341	1026	0	783	531	0	890
V/C Ratio(X)	0.06	0.00	0.14	0.68	0.00	0.74	0.47	0.00	0.49	0.68	0.00	0.70
Avail Cap(c_a), veh/h	194	0	384	409	0	341	1026	0	783	531	0	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	20.2	26.3	0.0	24.0	0.0	0.0	0.0	10.3	0.0	8.7
Incr Delay (d2), s/veh	0.1	0.0	0.2	4.4	0.0	8.4	1.5	0.0	2.2	6.9	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.8	5.6	0.0	5.3	0.4	0.0	0.5	6.4	0.0	8.9
LnGrp Delay(d),s/veh	30.0	0.0	20.3	30.7	0.0	32.3	1.5	0.0	2.2	17.2	0.0	13.2
LnGrp LOS	C		C	C		C	A		A	B		B
Approach Vol, veh/h		65			529			865			983	
Approach Delay, s/veh		22.1			31.5			1.8			14.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		22.0		48.0		22.0
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		2.0		14.8		30.6		17.9
Green Ext Time (p_c), s		22.6		0.9		10.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	5	10	0	30	10	700	10	50	740	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	6	12	0	35	12	824	12	59	871	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1429	1853	441	1406	1853	418	882	0	0	835	0	0
Stage 1	994	994	-	853	853	-	-	-	-	-	-	-
Stage 2	435	859	-	553	1000	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	95	73	564	99	73	584	762	-	-	794	-	-
Stage 1	263	321	-	320	374	-	-	-	-	-	-	-
Stage 2	570	371	-	485	319	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	78	61	564	85	61	584	762	-	-	794	-	-
Mov Cap-2 Maneuver	78	61	-	85	61	-	-	-	-	-	-	-
Stage 1	255	274	-	311	363	-	-	-	-	-	-	-
Stage 2	520	360	-	410	272	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.2	22.2	0.2	1.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	762	-	-	78	564	85	584	794	-	-
HCM Lane V/C Ratio	0.015	-	-	0.075	0.01	0.138	0.06	0.074	-	-
HCM Control Delay (s)	9.8	0.1	-	54.9	11.5	54	11.6	9.9	0.6	-
HCM Lane LOS	A	A	-	F	B	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.5	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	5	10	45	5	65	5	640	65	85	660	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	6	12	53	6	76	6	753	76	100	776	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1373	1823	394	1394	1791	415	788	0	0	829	0	0
Stage 1	982	982	-	803	803	-	-	-	-	-	-	-
Stage 2	391	841	-	591	988	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	105	76	605	101	80	586	827	-	-	798	-	-
Stage 1	267	325	-	343	394	-	-	-	-	-	-	-
Stage 2	605	379	-	460	323	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	66	605	83	69	586	827	-	-	798	-	-
Mov Cap-2 Maneuver	77	66	-	83	69	-	-	-	-	-	-	-
Stage 1	265	284	-	341	391	-	-	-	-	-	-	-
Stage 2	514	376	-	386	283	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.5	51.5	0.1	1.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	827	-	-	77	163	83	382	798	-	-
HCM Lane V/C Ratio	0.007	-	-	0.229	0.108	0.638	0.216	0.125	-	-
HCM Control Delay (s)	9.4	-	-	65.1	29.8	105.1	17	10.2	-	-
HCM Lane LOS	A	-	-	F	D	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.4	3	0.8	0.4	-	-

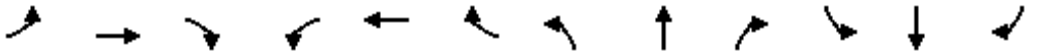
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	55	100	610	165	155	560
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1569	1569	1569	1569
Adj Flow Rate, veh/h	65	118	718	0	182	659
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	173	154	2278	1019	607	2278
Arrive On Green	0.12	0.12	0.76	0.00	1.00	1.00
Sat Flow, veh/h	1494	1333	3059	1333	731	3059
Grp Volume(v), veh/h	65	118	718	0	182	659
Grp Sat Flow(s),veh/h/ln	1494	1333	1490	1333	731	1490
Q Serve(g_s), s	2.8	6.0	5.2	0.0	2.5	0.0
Cycle Q Clear(g_c), s	2.8	6.0	5.2	0.0	7.8	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	173	154	2278	1019	607	2278
V/C Ratio(X)	0.38	0.77	0.32	0.00	0.30	0.29
Avail Cap(c_a), veh/h	341	305	2278	1019	607	2278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	30.0	2.6	0.0	0.4	0.0
Incr Delay (d2), s/veh	1.4	7.7	0.4	0.0	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.5	2.2	0.0	0.6	0.1
LnGrp Delay(d),s/veh	30.0	37.7	2.9	0.0	1.6	0.3
LnGrp LOS	C	D	A		A	A
Approach Vol, veh/h	183		718			841
Approach Delay, s/veh	35.0		2.9			0.6
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		57.7				57.7		12.3
Change Period (Y+Rc), s		* 4.2				* 4.2		4.2
Max Green Setting (Gmax), s		* 46				* 46		16.0
Max Q Clear Time (g_c+I1), s		7.2				9.8		8.0
Green Ext Time (p_c), s		15.4				15.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.2
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	4	1	127	9	60	2	311	127	38	177	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	7	5	1	149	11	71	2	366	149	45	208	4
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	180	36	297	26	167	53	1506	600	362	1646	33
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1311	1270	254	1404	183	1178	1	2039	812	396	2228	44
Grp Volume(v), veh/h	7	0	6	149	0	82	281	0	236	129	0	128
Grp Sat Flow(s),veh/h/ln	1311	0	1524	1404	0	1361	1568	0	1284	1249	0	1420
Q Serve(g_s), s	0.3	0.0	0.2	7.2	0.0	3.9	0.0	0.0	4.1	0.0	0.0	1.8
Cycle Q Clear(g_c), s	4.2	0.0	0.2	7.4	0.0	3.9	4.0	0.0	4.1	4.2	0.0	1.8
Prop In Lane	1.00		0.17	1.00		0.87	0.01		0.63	0.35		0.03
Lane Grp Cap(c), veh/h	216	0	215	297	0	192	1210	0	948	992	0	1049
V/C Ratio(X)	0.03	0.00	0.03	0.50	0.00	0.43	0.23	0.00	0.25	0.13	0.00	0.12
Avail Cap(c_a), veh/h	364	0	387	455	0	346	1210	0	948	992	0	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	25.9	29.1	0.0	27.5	2.9	0.0	2.9	2.6	0.0	2.6
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.3	0.0	1.5	0.5	0.0	0.6	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	2.9	0.0	1.5	1.9	0.0	1.6	0.8	0.0	0.8
LnGrp Delay(d),s/veh	29.4	0.0	26.0	30.4	0.0	29.0	3.4	0.0	3.6	2.9	0.0	2.9
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		13			231			517			257	
Approach Delay, s/veh		27.8			29.9			3.5			2.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.9		14.1		55.9		14.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		6.1		6.2		6.2		9.4
Green Ext Time (p_c), s		5.6		0.7		5.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	1	5	0	2	2	317	5	4	258	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	6	0	2	2	373	6	5	304	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	504	697	152	542	694	189	304	0	0	379	0	0
Stage 1	313	313	-	381	381	-	-	-	-	-	-	-
Stage 2	191	384	-	161	313	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	451	363	867	423	365	821	1254	-	-	1176	-	-
Stage 1	672	656	-	613	612	-	-	-	-	-	-	-
Stage 2	792	610	-	825	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	447	360	867	420	362	821	1254	-	-	1176	-	-
Mov Cap-2 Maneuver	447	360	-	420	362	-	-	-	-	-	-	-
Stage 1	671	653	-	612	611	-	-	-	-	-	-	-
Stage 2	788	609	-	820	653	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	12.5	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1254	-	-	590	488	1176	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.017	0.004	-	-
HCM Control Delay (s)	7.9	0	-	11.1	12.5	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	55	26	411	33	10	231
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	170	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	31	484	39	12	272

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	662	261	0	0	522	0
Stage 1	503	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	395	738	-	-	1041	-
Stage 1	573	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	390	738	-	-	1041	-
Mov Cap-2 Maneuver	390	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	390	738	1041	-
HCM Lane V/C Ratio	-	-	0.166	0.041	0.011	-
HCM Control Delay (s)	-	-	16.1	10.1	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0	-

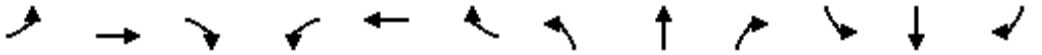
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	37	45	404	127	86	215
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	200	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	53	475	149	101	253

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	804	238	0	-	475	0
Stage 1	475	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	321	763	-	0	1083	-
Stage 1	592	-	-	0	-	-
Stage 2	701	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	291	763	-	-	1083	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	636	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	2.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	441	1083	-
HCM Lane V/C Ratio	-	0.219	0.093	-
HCM Control Delay (s)	-	15.4	8.7	-
HCM Lane LOS	-	C	A	-
HCM 95th %tile Q(veh)	-	0.8	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	29	8	146	8	82	4	367	155	109	364	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	8	34	9	172	9	96	5	432	182	128	428	7
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	220	58	320	21	227	55	1400	579	402	1337	23
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1284	1196	317	1358	116	1235	4	2011	831	467	1920	32
Grp Volume(v), veh/h	8	0	43	172	0	105	339	0	280	256	0	307
Grp Sat Flow(s),veh/h/ln	1284	0	1513	1358	0	1351	1566	0	1281	998	0	1422
Q Serve(g_s), s	0.4	0.0	1.7	8.5	0.0	4.8	0.0	0.0	6.0	4.7	0.0	5.9
Cycle Q Clear(g_c), s	5.2	0.0	1.7	10.2	0.0	4.8	5.9	0.0	6.0	10.7	0.0	5.9
Prop In Lane	1.00		0.21	1.00		0.91	0.01		0.65	0.50		0.02
Lane Grp Cap(c), veh/h	251	0	278	320	0	248	1142	0	892	772	0	990
V/C Ratio(X)	0.03	0.00	0.15	0.54	0.00	0.42	0.30	0.00	0.31	0.33	0.00	0.31
Avail Cap(c_a), veh/h	341	0	385	416	0	343	1142	0	892	772	0	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	24.0	28.3	0.0	25.3	4.1	0.0	4.1	4.9	0.0	4.1
Incr Delay (d2), s/veh	0.1	0.0	0.3	1.4	0.0	1.1	0.7	0.0	0.9	1.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.7	3.3	0.0	1.9	2.7	0.0	2.3	2.5	0.0	2.4
LnGrp Delay(d),s/veh	27.6	0.0	24.3	29.7	0.0	26.4	4.8	0.0	5.1	6.1	0.0	4.9
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		51			277			619			563	
Approach Delay, s/veh		24.8			28.4			4.9			5.5	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		52.9		17.1		52.9		17.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		8.0		7.2		12.7		12.2
Green Ext Time (p_c), s		10.0		1.0		9.6		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	6	8	0	2	0	372	7	0	466	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	7	9	0	2	0	438	8	0	548	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	769	996	276	716	994	223	552	0	0	446	0	0
Stage 1	550	550	-	442	442	-	-	-	-	-	-	-
Stage 2	219	446	-	274	552	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	291	243	721	317	244	780	1014	-	-	1111	-	-
Stage 1	487	514	-	564	575	-	-	-	-	-	-	-
Stage 2	763	572	-	709	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	290	243	721	314	244	780	1014	-	-	1111	-	-
Mov Cap-2 Maneuver	290	243	-	314	244	-	-	-	-	-	-	-
Stage 1	487	514	-	564	575	-	-	-	-	-	-	-
Stage 2	761	572	-	702	513	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	15.4	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1014	-	-	595	357	1111	-	-
HCM Lane V/C Ratio	-	-	-	0.014	0.033	-	-	-
HCM Control Delay (s)	0	-	-	11.1	15.4	0	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	45	27	410	66	54	369
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	170	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	32	482	78	64	434

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	865	280	0	0	560	0
Stage 1	521	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	293	717	-	-	1007	-
Stage 1	561	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	274	717	-	-	1007	-
Mov Cap-2 Maneuver	274	-	-	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	274	717	1007	-
HCM Lane V/C Ratio	-	-	0.193	0.044	0.063	-
HCM Control Delay (s)	-	-	21.3	10.3	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	0.2	-

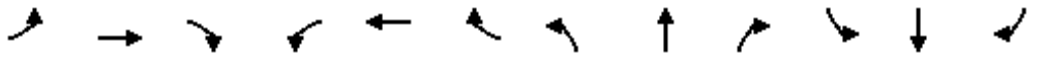
Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	45	65	397	134	116	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	-	-	200	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	76	467	158	136	372

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	926	234	0	-	467	0
Stage 1	467	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	268	768	-	0	1091	-
Stage 1	597	-	-	0	-	-
Stage 2	603	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	235	768	-	-	1091	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	528	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	398	1091	-
HCM Lane V/C Ratio	-	0.325	0.125	-
HCM Control Delay (s)	-	18.3	8.8	-
HCM Lane LOS	-	C	A	-
HCM 95th %tile Q(veh)	-	1.4	0.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	5	5	145	10	90	5	535	160	55	245	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	11	5	5	158	11	98	5	582	174	60	266	5
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	113	113	313	21	190	55	1606	476	346	1521	30
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.96	0.96	0.96	0.72	0.72	0.72
Sat Flow, veh/h	1279	721	721	1399	137	1217	4	2218	657	380	2102	41
Grp Volume(v), veh/h	11	0	10	158	0	109	414	0	347	158	0	173
Grp Sat Flow(s),veh/h/ln	1279	0	1441	1399	0	1354	1567	0	1312	1103	0	1420
Q Serve(g_s), s	0.6	0.0	0.4	7.6	0.0	5.2	0.0	0.0	1.1	0.0	0.0	2.7
Cycle Q Clear(g_c), s	5.7	0.0	0.4	8.0	0.0	5.2	1.1	0.0	1.1	2.2	0.0	2.7
Prop In Lane	1.00		0.50	1.00		0.90	0.01		0.50	0.38		0.03
Lane Grp Cap(c), veh/h	208	0	225	313	0	211	1186	0	949	869	0	1028
V/C Ratio(X)	0.05	0.00	0.04	0.50	0.00	0.52	0.35	0.00	0.37	0.18	0.00	0.17
Avail Cap(c_a), veh/h	443	0	490	570	0	460	1186	0	949	869	0	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	25.1	28.5	0.0	27.1	0.4	0.0	0.4	3.0	0.0	3.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.3	0.0	1.9	0.8	0.0	1.1	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	3.0	0.0	2.1	0.7	0.0	0.6	1.0	0.0	1.1
LnGrp Delay(d),s/veh	29.8	0.0	25.2	29.7	0.0	29.0	1.2	0.0	1.5	3.4	0.0	3.4
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		21			267			761			331	
Approach Delay, s/veh		27.6			29.5			1.3			3.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.9		15.1		54.9		15.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 38		* 24		* 38		* 24
Max Q Clear Time (g_c+I1), s		3.1		7.7		4.7		10.0
Green Ext Time (p_c), s		8.8		1.0		8.7		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	1	10	0	20	5	680	5	10	380	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	11	0	22	5	739	5	11	413	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	1193	209	981	1193	372	418	0	0	745	0	0
Stage 1	438	438	-	753	753	-	-	-	-	-	-	-
Stage 2	380	755	-	228	440	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	268	186	797	204	186	625	1138	-	-	859	-	-
Stage 1	567	577	-	368	416	-	-	-	-	-	-	-
Stage 2	614	415	-	754	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	181	797	200	181	625	1138	-	-	859	-	-
Mov Cap-2 Maneuver	254	181	-	200	181	-	-	-	-	-	-	-
Stage 1	562	567	-	365	413	-	-	-	-	-	-	-
Stage 2	588	412	-	740	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	15.3	0.1	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	254	797	200	625	859	-	-
HCM Lane V/C Ratio	0.005	-	-	0.004	0.001	0.054	0.035	0.013	-	-
HCM Control Delay (s)	8.2	0	-	19.2	9.5	24	11	9.2	0.1	-
HCM Lane LOS	A	A	-	C	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	2	1	100	1	110	5	575	55	70	314	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1569	1569	1600	1569	1569	1600
Adj Flow Rate, veh/h	3	2	1	109	1	120	5	625	60	76	341	5
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	127	64	282	1	171	786	2065	198	669	2259	33
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.25	0.25	0.25
Sat Flow, veh/h	1265	988	494	1408	11	1324	1031	2749	264	754	3007	44
Grp Volume(v), veh/h	3	0	3	109	0	121	5	338	347	76	169	177
Grp Sat Flow(s),veh/h/ln	1265	0	1481	1408	0	1335	1031	1490	1522	754	1490	1561
Q Serve(g_s), s	0.2	0.0	0.1	5.1	0.0	6.1	0.0	0.0	0.0	5.5	6.2	6.2
Cycle Q Clear(g_c), s	6.2	0.0	0.1	5.3	0.0	6.1	6.2	0.0	0.0	5.5	6.2	6.2
Prop In Lane	1.00		0.33	1.00		0.99	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	156	0	191	282	0	172	786	1119	1143	669	1119	1173
V/C Ratio(X)	0.02	0.00	0.02	0.39	0.00	0.70	0.01	0.30	0.30	0.11	0.15	0.15
Avail Cap(c_a), veh/h	405	0	483	559	0	435	786	1119	1143	669	1119	1173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	26.6	28.9	0.0	29.2	0.4	0.0	0.0	8.6	8.9	8.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	5.2	0.0	0.7	0.7	0.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	2.1	0.0	2.5	0.0	0.2	0.2	1.2	2.7	2.8
LnGrp Delay(d),s/veh	32.2	0.0	26.7	29.8	0.0	34.4	0.4	0.7	0.7	9.0	9.2	9.2
LnGrp LOS	C		C	C		C	A	A	A	A	A	A
Approach Vol, veh/h		6			230			690			422	
Approach Delay, s/veh		29.5			32.2			0.7			9.1	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		56.8		13.2		56.8		13.2
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 39		* 23		* 39		* 23
Max Q Clear Time (g_c+I1), s		8.2		8.2		8.2		8.1
Green Ext Time (p_c), s		8.1		0.9		8.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

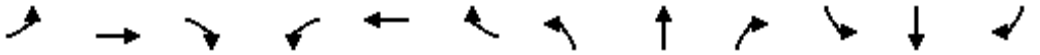
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	65	570	155	115	300
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1569	1569	1569	1569
Adj Flow Rate, veh/h	49	71	620	0	125	326
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	113	101	2397	1072	705	2397
Arrive On Green	0.08	0.08	0.80	0.00	1.00	1.00
Sat Flow, veh/h	1494	1333	3059	1333	800	3059
Grp Volume(v), veh/h	49	71	620	0	125	326
Grp Sat Flow(s),veh/h/ln	1494	1333	1490	1333	800	1490
Q Serve(g_s), s	2.2	3.6	3.6	0.0	0.9	0.0
Cycle Q Clear(g_c), s	2.2	3.6	3.6	0.0	4.5	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	113	101	2397	1072	705	2397
V/C Ratio(X)	0.43	0.70	0.26	0.00	0.18	0.14
Avail Cap(c_a), veh/h	401	358	2397	1072	705	2397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.98	0.98
Uniform Delay (d), s/veh	30.9	31.6	1.7	0.0	0.1	0.0
Incr Delay (d2), s/veh	2.6	8.5	0.3	0.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.6	1.6	0.0	0.3	0.0
LnGrp Delay(d),s/veh	33.5	40.1	2.0	0.0	0.7	0.1
LnGrp LOS	C	D	A		A	A
Approach Vol, veh/h	120		620			451
Approach Delay, s/veh	37.4		2.0			0.3
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		60.5				60.5		9.5
Change Period (Y+Rc), s		* 4.2				* 4.2		4.2
Max Green Setting (Gmax), s		* 43				* 43		18.8
Max Q Clear Time (g_c+I1), s		5.6				6.5		5.6
Green Ext Time (p_c), s		9.0				9.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	35	10	185	10	135	10	535	195	185	640	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	11	38	11	201	11	147	11	582	212	201	696	11
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	244	71	349	20	262	60	1403	504	397	1255	20
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	1.00	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	1223	1170	339	1351	94	1254	11	2089	750	474	1869	30
Grp Volume(v), veh/h	11	0	49	201	0	158	439	0	366	378	0	530
Grp Sat Flow(s),veh/h/ln	1223	0	1509	1351	0	1347	1556	0	1295	950	0	1422
Q Serve(g_s), s	0.6	0.0	1.9	10.0	0.0	7.4	0.0	0.0	0.0	12.0	0.0	13.7
Cycle Q Clear(g_c), s	7.9	0.0	1.9	11.9	0.0	7.4	0.0	0.0	0.0	13.8	0.0	13.7
Prop In Lane	1.00		0.22	1.00		0.93	0.03		0.58	0.53		0.02
Lane Grp Cap(c), veh/h	229	0	315	349	0	281	1097	0	869	717	0	955
V/C Ratio(X)	0.05	0.00	0.16	0.58	0.00	0.56	0.40	0.00	0.42	0.53	0.00	0.56
Avail Cap(c_a), veh/h	285	0	384	410	0	343	1097	0	869	717	0	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	22.7	27.5	0.0	24.8	0.0	0.0	0.0	5.8	0.0	6.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	1.5	0.0	1.8	1.1	0.0	1.5	2.8	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.8	3.9	0.0	2.9	0.3	0.0	0.4	4.3	0.0	5.9
LnGrp Delay(d),s/veh	28.5	0.0	22.9	29.0	0.0	26.6	1.1	0.0	1.5	8.6	0.0	8.4
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		60			359			805			908	
Approach Delay, s/veh		23.9			27.9			1.3			8.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.2		18.8		51.2		18.8
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		2.0		9.9		15.8		13.9
Green Ext Time (p_c), s		18.7		1.2		15.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	5	10	0	30	10	705	10	50	775	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	11	0	33	11	766	11	54	842	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1362	1756	427	1323	1755	389	853	0	0	777	0	0
Stage 1	957	957	-	793	793	-	-	-	-	-	-	-
Stage 2	405	799	-	530	962	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	107	84	576	114	84	610	782	-	-	835	-	-
Stage 1	277	334	-	348	398	-	-	-	-	-	-	-
Stage 2	593	396	-	500	332	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	90	72	576	100	72	610	782	-	-	835	-	-
Mov Cap-2 Maneuver	90	72	-	100	72	-	-	-	-	-	-	-
Stage 1	270	293	-	339	388	-	-	-	-	-	-	-
Stage 2	547	386	-	434	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.5	19.7	0.2	1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	90	576	100	610	835	-	-
HCM Lane V/C Ratio	0.014	-	-	0.06	0.009	0.109	0.053	0.065	-	-
HCM Control Delay (s)	9.7	0.1	-	47.6	11.3	45.3	11.2	9.6	0.5	-
HCM Lane LOS	A	A	-	E	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.4	0.2	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	5	10	95	5	135	5	575	130	170	600	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1569	1569	1600	1569	1569	1600
Adj Flow Rate, veh/h	16	5	11	103	5	147	5	625	141	185	652	11
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	70	153	311	7	206	647	1743	393	606	2162	36
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	1.00	1.00	1.00	0.96	0.96	0.96
Sat Flow, veh/h	1230	437	962	1392	44	1296	769	2418	545	699	2999	51
Grp Volume(v), veh/h	16	0	16	103	0	152	5	385	381	185	324	339
Grp Sat Flow(s),veh/h/ln	1230	0	1399	1392	0	1340	769	1490	1473	699	1490	1560
Q Serve(g_s), s	0.9	0.0	0.7	4.8	0.0	7.5	0.0	0.0	0.0	1.2	0.9	0.9
Cycle Q Clear(g_c), s	8.4	0.0	0.7	5.4	0.0	7.5	0.9	0.0	0.0	1.2	0.9	0.9
Prop In Lane	1.00		0.69	1.00		0.97	1.00		0.37	1.00		0.03
Lane Grp Cap(c), veh/h	166	0	223	311	0	213	647	1074	1061	606	1074	1124
V/C Ratio(X)	0.10	0.00	0.07	0.33	0.00	0.71	0.01	0.36	0.36	0.31	0.30	0.30
Avail Cap(c_a), veh/h	283	0	356	443	0	341	647	1074	1061	606	1074	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	25.0	27.3	0.0	27.9	0.0	0.0	0.0	0.4	0.4	0.4
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.6	0.0	4.4	0.0	0.9	0.9	1.3	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	1.9	0.0	3.0	0.0	0.3	0.3	0.4	0.5	0.5
LnGrp Delay(d),s/veh	32.1	0.0	25.2	28.0	0.0	32.3	0.0	0.9	0.9	1.7	1.1	1.1
LnGrp LOS	C		C	C		C	A	A	A	A	A	A
Approach Vol, veh/h		32			255			771			848	
Approach Delay, s/veh		28.6			30.5			0.9			1.3	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.7		15.3		54.7		15.3
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		2.9		10.4		3.2		9.5
Green Ext Time (p_c), s		15.2		0.8		15.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

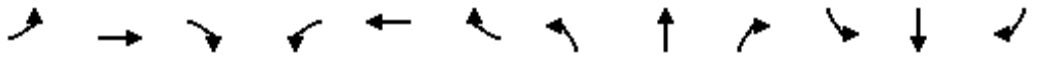
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	55	100	611	164	154	553
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1569	1569	1569	1569
Adj Flow Rate, veh/h	60	109	664	0	167	601
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	162	144	2300	1029	646	2300
Arrive On Green	0.11	0.11	0.77	0.00	1.00	1.00
Sat Flow, veh/h	1494	1333	3059	1333	768	3059
Grp Volume(v), veh/h	60	109	664	0	167	601
Grp Sat Flow(s),veh/h/ln	1494	1333	1490	1333	768	1490
Q Serve(g_s), s	2.6	5.6	4.6	0.0	1.8	0.0
Cycle Q Clear(g_c), s	2.6	5.6	4.6	0.0	6.4	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	162	144	2300	1029	646	2300
V/C Ratio(X)	0.37	0.76	0.29	0.00	0.26	0.26
Avail Cap(c_a), veh/h	359	320	2300	1029	646	2300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.95	0.95
Uniform Delay (d), s/veh	29.0	30.3	2.3	0.0	0.3	0.0
Incr Delay (d2), s/veh	1.4	7.8	0.3	0.0	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.3	1.9	0.0	0.5	0.1
LnGrp Delay(d),s/veh	30.4	38.1	2.7	0.0	1.2	0.3
LnGrp LOS	C	D	A		A	A
Approach Vol, veh/h	169		664			768
Approach Delay, s/veh	35.4		2.7			0.5
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		58.2				58.2		11.8
Change Period (Y+Rc), s		* 4.2				* 4.2		4.2
Max Green Setting (Gmax), s		* 45				* 45		16.8
Max Q Clear Time (g_c+I1), s		6.6				8.4		7.6
Green Ext Time (p_c), s		13.5				13.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	5	5	145	10	90	5	535	160	55	245	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	11	5	5	158	11	98	5	582	174	60	266	5
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	113	113	313	21	190	55	1606	476	346	1521	30
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	1.00	1.00	1.00	0.72	0.72	0.72
Sat Flow, veh/h	1279	721	721	1399	137	1217	4	2218	657	380	2102	41
Grp Volume(v), veh/h	11	0	10	158	0	109	414	0	347	158	0	173
Grp Sat Flow(s),veh/h/ln	1279	0	1441	1399	0	1354	1567	0	1312	1103	0	1420
Q Serve(g_s), s	0.6	0.0	0.4	7.6	0.0	5.2	0.0	0.0	0.0	0.0	0.0	2.7
Cycle Q Clear(g_c), s	5.7	0.0	0.4	8.0	0.0	5.2	0.0	0.0	0.0	2.2	0.0	2.7
Prop In Lane	1.00		0.50	1.00		0.90	0.01		0.50	0.38		0.03
Lane Grp Cap(c), veh/h	208	0	225	313	0	211	1186	0	949	869	0	1028
V/C Ratio(X)	0.05	0.00	0.04	0.50	0.00	0.52	0.35	0.00	0.37	0.18	0.00	0.17
Avail Cap(c_a), veh/h	443	0	490	570	0	460	1186	0	949	869	0	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	25.1	28.5	0.0	27.1	0.0	0.0	0.0	3.0	0.0	3.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.3	0.0	1.9	0.8	0.0	1.1	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	3.0	0.0	2.1	0.3	0.0	0.3	1.0	0.0	1.1
LnGrp Delay(d),s/veh	29.8	0.0	25.2	29.7	0.0	29.0	0.8	0.0	1.1	3.4	0.0	3.4
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		21			267			761			331	
Approach Delay, s/veh		27.6			29.5			0.9			3.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.9		15.1		54.9		15.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 38		* 24		* 38		* 24
Max Q Clear Time (g_c+I1), s		2.0		7.7		4.7		10.0
Green Ext Time (p_c), s		8.9		1.0		8.7		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.5
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	1	10	0	20	5	680	5	10	380	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	11	0	22	5	739	5	11	413	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	1193	209	981	1193	372	418	0	0	745	0	0
Stage 1	438	438	-	753	753	-	-	-	-	-	-	-
Stage 2	380	755	-	228	440	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	268	186	797	204	186	625	1138	-	-	859	-	-
Stage 1	567	577	-	368	416	-	-	-	-	-	-	-
Stage 2	614	415	-	754	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	181	797	200	181	625	1138	-	-	859	-	-
Mov Cap-2 Maneuver	254	181	-	200	181	-	-	-	-	-	-	-
Stage 1	562	567	-	365	413	-	-	-	-	-	-	-
Stage 2	588	412	-	740	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	15.3	0.1	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	254	797	200	625	859	-	-
HCM Lane V/C Ratio	0.005	-	-	0.004	0.001	0.054	0.035	0.013	-	-
HCM Control Delay (s)	8.2	0	-	19.2	9.5	24	11	9.2	0.1	-
HCM Lane LOS	A	A	-	C	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	2	1	100	1	110	5	575	55	70	314	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1569	1569	1600	1569	1569	1600
Adj Flow Rate, veh/h	3	2	1	109	1	120	5	625	60	76	341	5
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	127	64	282	1	171	877	2065	198	669	2259	33
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1265	988	494	1408	11	1324	1031	2749	264	754	3007	44
Grp Volume(v), veh/h	3	0	3	109	0	121	5	338	347	76	169	177
Grp Sat Flow(s),veh/h/ln	1265	0	1481	1408	0	1335	1031	1490	1522	754	1490	1561
Q Serve(g_s), s	0.2	0.0	0.1	5.1	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.1	5.3	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.99	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	156	0	191	282	0	172	877	1119	1143	669	1119	1173
V/C Ratio(X)	0.02	0.00	0.02	0.39	0.00	0.70	0.01	0.30	0.30	0.11	0.15	0.15
Avail Cap(c_a), veh/h	405	0	483	559	0	435	877	1119	1143	669	1119	1173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	26.6	28.9	0.0	29.2	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	5.2	0.0	0.7	0.7	0.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	2.1	0.0	2.5	0.0	0.2	0.2	0.1	0.1	0.1
LnGrp Delay(d),s/veh	32.2	0.0	26.7	29.8	0.0	34.4	0.0	0.7	0.7	0.3	0.3	0.3
LnGrp LOS	C		C	C		C	A	A	A	A	A	A
Approach Vol, veh/h		6			230			690			422	
Approach Delay, s/veh		29.5			32.2			0.7			0.3	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		56.8		13.2		56.8		13.2
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 39		* 23		* 39		* 23
Max Q Clear Time (g_c+I1), s		2.0		8.2		2.0		8.1
Green Ext Time (p_c), s		8.5		0.9		8.5		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	65	570	155	115	300
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1569	1569	1569	1569
Adj Flow Rate, veh/h	49	71	620	0	125	326
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	113	101	2397	1072	705	2397
Arrive On Green	0.08	0.08	0.80	0.00	1.00	1.00
Sat Flow, veh/h	1494	1333	3059	1333	800	3059
Grp Volume(v), veh/h	49	71	620	0	125	326
Grp Sat Flow(s),veh/h/ln	1494	1333	1490	1333	800	1490
Q Serve(g_s), s	2.2	3.6	3.6	0.0	0.9	0.0
Cycle Q Clear(g_c), s	2.2	3.6	3.6	0.0	4.5	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	113	101	2397	1072	705	2397
V/C Ratio(X)	0.43	0.70	0.26	0.00	0.18	0.14
Avail Cap(c_a), veh/h	401	358	2397	1072	705	2397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.98	0.98
Uniform Delay (d), s/veh	30.9	31.6	1.7	0.0	0.1	0.0
Incr Delay (d2), s/veh	2.6	8.5	0.3	0.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.6	1.6	0.0	0.3	0.0
LnGrp Delay(d),s/veh	33.5	40.1	2.0	0.0	0.7	0.1
LnGrp LOS	C	D	A		A	A
Approach Vol, veh/h	120		620			451
Approach Delay, s/veh	37.4		2.0			0.3
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		60.5				60.5		9.5
Change Period (Y+Rc), s		* 4.2				* 4.2		4.2
Max Green Setting (Gmax), s		* 43				* 43		18.8
Max Q Clear Time (g_c+I1), s		5.6				6.5		5.6
Green Ext Time (p_c), s		9.0				9.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	35	10	185	10	135	10	535	195	185	640	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	11	38	11	201	11	147	11	582	212	201	696	11
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	244	71	349	20	262	60	1403	504	397	1255	20
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	1.00	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	1223	1170	339	1351	94	1254	11	2089	750	474	1869	30
Grp Volume(v), veh/h	11	0	49	201	0	158	439	0	366	378	0	530
Grp Sat Flow(s),veh/h/ln	1223	0	1509	1351	0	1347	1556	0	1295	950	0	1422
Q Serve(g_s), s	0.6	0.0	1.9	10.0	0.0	7.4	0.0	0.0	0.0	12.0	0.0	13.7
Cycle Q Clear(g_c), s	7.9	0.0	1.9	11.9	0.0	7.4	0.0	0.0	0.0	13.8	0.0	13.7
Prop In Lane	1.00		0.22	1.00		0.93	0.03		0.58	0.53		0.02
Lane Grp Cap(c), veh/h	229	0	315	349	0	281	1097	0	869	717	0	955
V/C Ratio(X)	0.05	0.00	0.16	0.58	0.00	0.56	0.40	0.00	0.42	0.53	0.00	0.56
Avail Cap(c_a), veh/h	285	0	384	410	0	343	1097	0	869	717	0	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	22.7	27.5	0.0	24.8	0.0	0.0	0.0	5.8	0.0	6.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	1.5	0.0	1.8	1.1	0.0	1.5	2.8	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.8	3.9	0.0	2.9	0.3	0.0	0.4	4.3	0.0	5.9
LnGrp Delay(d),s/veh	28.5	0.0	22.9	29.0	0.0	26.6	1.1	0.0	1.5	8.6	0.0	8.4
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		60			359			805			908	
Approach Delay, s/veh		23.9			27.9			1.3			8.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.2		18.8		51.2		18.8
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		2.0		9.9		15.8		13.9
Green Ext Time (p_c), s		18.7		1.2		15.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	5	10	0	30	10	705	10	50	775	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	11	0	33	11	766	11	54	842	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1362	1756	427	1323	1755	389	853	0	0	777	0	0
Stage 1	957	957	-	793	793	-	-	-	-	-	-	-
Stage 2	405	799	-	530	962	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	107	84	576	114	84	610	782	-	-	835	-	-
Stage 1	277	334	-	348	398	-	-	-	-	-	-	-
Stage 2	593	396	-	500	332	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	90	72	576	100	72	610	782	-	-	835	-	-
Mov Cap-2 Maneuver	90	72	-	100	72	-	-	-	-	-	-	-
Stage 1	270	293	-	339	388	-	-	-	-	-	-	-
Stage 2	547	386	-	434	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.5	19.7	0.2	1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	90	576	100	610	835	-	-
HCM Lane V/C Ratio	0.014	-	-	0.06	0.009	0.109	0.053	0.065	-	-
HCM Control Delay (s)	9.7	0.1	-	47.6	11.3	45.3	11.2	9.6	0.5	-
HCM Lane LOS	A	A	-	E	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.4	0.2	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	5	10	95	5	135	5	575	130	170	600	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1569	1569	1600	1569	1569	1600
Adj Flow Rate, veh/h	16	5	11	103	5	147	5	625	141	185	652	11
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	70	153	311	7	206	520	1743	393	606	2162	36
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	1.00	1.00	1.00	0.24	0.24	0.24
Sat Flow, veh/h	1230	437	962	1392	44	1296	769	2418	545	699	2999	51
Grp Volume(v), veh/h	16	0	16	103	0	152	5	385	381	185	324	339
Grp Sat Flow(s),veh/h/ln	1230	0	1399	1392	0	1340	769	1490	1473	699	1490	1560
Q Serve(g_s), s	0.9	0.0	0.7	4.8	0.0	7.5	0.1	0.0	0.0	15.5	12.5	12.5
Cycle Q Clear(g_c), s	8.4	0.0	0.7	5.4	0.0	7.5	12.6	0.0	0.0	15.5	12.5	12.5
Prop In Lane	1.00		0.69	1.00		0.97	1.00		0.37	1.00		0.03
Lane Grp Cap(c), veh/h	166	0	223	311	0	213	520	1074	1061	606	1074	1124
V/C Ratio(X)	0.10	0.00	0.07	0.33	0.00	0.71	0.01	0.36	0.36	0.31	0.30	0.30
Avail Cap(c_a), veh/h	283	0	356	443	0	341	520	1074	1061	606	1074	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	25.0	27.3	0.0	27.9	1.6	0.0	0.0	13.3	12.2	12.2
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.6	0.0	4.4	0.0	0.9	0.9	1.3	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	1.9	0.0	3.0	0.0	0.3	0.3	3.2	5.4	5.6
LnGrp Delay(d),s/veh	32.1	0.0	25.2	28.0	0.0	32.3	1.6	0.9	0.9	14.6	12.9	12.9
LnGrp LOS	C		C	C		C	A	A	A	B	B	B
Approach Vol, veh/h		32			255			771			848	
Approach Delay, s/veh		28.6			30.5			0.9			13.3	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.7		15.3		54.7		15.3
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		14.6		10.4		17.5		9.5
Green Ext Time (p_c), s		13.3		0.8		12.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

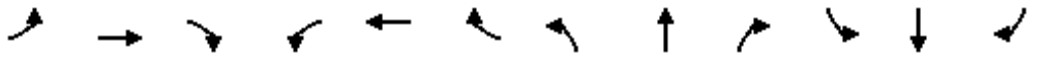
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	55	100	611	164	154	553
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1569	1569	1569	1569
Adj Flow Rate, veh/h	60	109	664	0	167	601
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	161	144	2301	1029	646	2301
Arrive On Green	0.11	0.11	0.77	0.00	1.00	1.00
Sat Flow, veh/h	1494	1333	3059	1333	768	3059
Grp Volume(v), veh/h	60	109	664	0	167	601
Grp Sat Flow(s),veh/h/ln	1494	1333	1490	1333	768	1490
Q Serve(g_s), s	2.6	5.6	4.6	0.0	1.8	0.0
Cycle Q Clear(g_c), s	2.6	5.6	4.6	0.0	6.4	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	161	144	2301	1029	646	2301
V/C Ratio(X)	0.37	0.76	0.29	0.00	0.26	0.26
Avail Cap(c_a), veh/h	341	305	2301	1029	646	2301
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.95	0.95
Uniform Delay (d), s/veh	29.0	30.3	2.3	0.0	0.3	0.0
Incr Delay (d2), s/veh	1.4	7.8	0.3	0.0	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.3	1.9	0.0	0.5	0.1
LnGrp Delay(d),s/veh	30.4	38.2	2.7	0.0	1.2	0.3
LnGrp LOS	C	D	A		A	A
Approach Vol, veh/h	169		664			768
Approach Delay, s/veh	35.4		2.7			0.5
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		58.2				58.2		11.8
Change Period (Y+Rc), s		* 4.2				* 4.2		4.2
Max Green Setting (Gmax), s		* 46				* 46		16.0
Max Q Clear Time (g_c+I1), s		6.6				8.4		7.6
Green Ext Time (p_c), s		13.6				13.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	5	5	145	10	90	5	535	160	55	245	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	11	5	5	158	11	98	5	582	174	60	266	5
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	113	113	313	21	190	55	1606	476	328	1478	29
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1279	721	721	1399	137	1217	4	2218	657	355	2041	40
Grp Volume(v), veh/h	11	0	10	158	0	109	414	0	347	155	0	176
Grp Sat Flow(s),veh/h/ln	1279	0	1441	1399	0	1354	1567	0	1312	1017	0	1420
Q Serve(g_s), s	0.6	0.0	0.4	7.6	0.0	5.2	0.0	0.0	7.0	0.6	0.0	2.7
Cycle Q Clear(g_c), s	5.7	0.0	0.4	8.0	0.0	5.2	6.9	0.0	7.0	7.6	0.0	2.7
Prop In Lane	1.00		0.50	1.00		0.90	0.01		0.50	0.39		0.03
Lane Grp Cap(c), veh/h	208	0	225	313	0	211	1186	0	949	807	0	1028
V/C Ratio(X)	0.05	0.00	0.04	0.50	0.00	0.52	0.35	0.00	0.37	0.19	0.00	0.17
Avail Cap(c_a), veh/h	443	0	490	570	0	460	1186	0	949	807	0	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	25.1	28.5	0.0	27.1	3.6	0.0	3.6	3.1	0.0	3.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.3	0.0	1.9	0.8	0.0	1.1	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	3.0	0.0	2.1	3.1	0.0	2.8	1.0	0.0	1.1
LnGrp Delay(d),s/veh	29.8	0.0	25.2	29.7	0.0	29.0	4.4	0.0	4.7	3.6	0.0	3.4
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		21			267			761			331	
Approach Delay, s/veh		27.6			29.5			4.6			3.5	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.9		15.1		54.9		15.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 38		* 24		* 38		* 24
Max Q Clear Time (g_c+I1), s		9.0		7.7		9.6		10.0
Green Ext Time (p_c), s		8.4		1.0		8.4		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	1	10	0	20	5	680	5	10	380	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	11	0	22	5	739	5	11	413	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	1193	209	981	1193	372	418	0	0	745	0	0
Stage 1	438	438	-	753	753	-	-	-	-	-	-	-
Stage 2	380	755	-	228	440	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	268	186	797	204	186	625	1138	-	-	859	-	-
Stage 1	567	577	-	368	416	-	-	-	-	-	-	-
Stage 2	614	415	-	754	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	181	797	200	181	625	1138	-	-	859	-	-
Mov Cap-2 Maneuver	254	181	-	200	181	-	-	-	-	-	-	-
Stage 1	562	567	-	365	413	-	-	-	-	-	-	-
Stage 2	588	412	-	740	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	15.3	0.1	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	254	797	200	625	859	-	-
HCM Lane V/C Ratio	0.005	-	-	0.004	0.001	0.054	0.035	0.013	-	-
HCM Control Delay (s)	8.2	0	-	19.2	9.5	24	11	9.2	0.1	-
HCM Lane LOS	A	A	-	C	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	6	230	636	423
Demand Flow Rate, veh/h	6	235	648	432
Vehicles Circulating, veh/h	589	702	211	169
Vehicles Exiting, veh/h	12	152	384	768
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.9	13.3	13.2	9.1
Approach LOS	A	B	B	A

Lane	Left	Left	Left	Right	Bypass	Left	Right
Designated Moves	LTR	LTR	LT	R	R	LT	R
Assumed Moves	LTR	LTR	LT	R	R	LT	R
RT Channelized					Free		
Lane Util	1.000	1.000	0.906	0.094		0.988	0.012
Critical Headway, s	5.193	5.193	5.193	5.193		5.193	5.193
Entry Flow, veh/h	6	235	587	61	0	427	5
Cap Entry Lane, veh/h	627	560	915	915	1632	954	954
Entry HV Adj Factor	0.993	0.980	0.981	0.984	0.980	0.980	1.000
Flow Entry, veh/h	6	230	576	60	0	418	5
Cap Entry, veh/h	623	549	897	900	1600	935	954
V/C Ratio	0.010	0.420	0.642	0.067	0.000	0.447	0.005
Control Delay, s/veh	5.9	13.3	14.1	4.6	0.0	9.2	3.8
LOS	A	B	B	A	A	A	A
95th %tile Queue, veh	0	2	5	0	0	2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Approach	NW
Entry Lanes	1
Conflicting Circle Lanes	1
Adj Approach Flow, veh/h	121
Demand Flow Rate, veh/h	123
Vehicles Circulating, veh/h	731
Vehicles Exiting, veh/h	128
Follow-Up Headway, s	3.186
Ped Vol Crossing Leg, #/h	0
Ped Cap Adj	1.000
Approach Delay, s/veh	9.8
Approach LOS	A

Lane	Left
Designated Moves	LR
Assumed Moves	LR
RT Channelized	
Lane Util	1.000
Critical Headway, s	5.193
Entry Flow, veh/h	123
Cap Entry Lane, veh/h	544
Entry HV Adj Factor	0.984
Flow Entry, veh/h	121
Cap Entry, veh/h	535
V/C Ratio	0.226
Control Delay, s/veh	9.8
LOS	A
95th %tile Queue, veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	35	10	185	10	135	10	535	195	185	640	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1569	1569	1600	1569	1569	1600	1600	1569	1600	1600	1569	1600
Adj Flow Rate, veh/h	11	38	11	201	11	147	11	582	212	201	696	11
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	244	71	349	20	262	60	1403	504	346	1209	20
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1223	1170	339	1351	94	1254	11	2089	750	398	1801	30
Grp Volume(v), veh/h	11	0	49	201	0	158	439	0	366	378	0	530
Grp Sat Flow(s),veh/h/ln	1223	0	1509	1351	0	1347	1556	0	1295	806	0	1422
Q Serve(g_s), s	0.6	0.0	1.9	10.0	0.0	7.4	0.0	0.0	9.1	17.1	0.0	13.7
Cycle Q Clear(g_c), s	7.9	0.0	1.9	11.9	0.0	7.4	8.9	0.0	9.1	26.1	0.0	13.7
Prop In Lane	1.00		0.22	1.00		0.93	0.03		0.58	0.53		0.02
Lane Grp Cap(c), veh/h	229	0	315	349	0	281	1097	0	869	620	0	955
V/C Ratio(X)	0.05	0.00	0.16	0.58	0.00	0.56	0.40	0.00	0.42	0.61	0.00	0.56
Avail Cap(c_a), veh/h	285	0	384	410	0	343	1097	0	869	620	0	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	22.7	27.5	0.0	24.8	5.2	0.0	5.3	9.5	0.0	6.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	1.5	0.0	1.8	1.1	0.0	1.5	4.4	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.8	3.9	0.0	2.9	4.1	0.0	3.5	5.8	0.0	5.9
LnGrp Delay(d),s/veh	28.5	0.0	22.9	29.0	0.0	26.6	6.3	0.0	6.8	13.9	0.0	8.4
LnGrp LOS	C		C	C		C	A		A	B		A
Approach Vol, veh/h		60			359			805			908	
Approach Delay, s/veh		23.9			27.9			6.5			10.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.2		18.8		51.2		18.8
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 44		* 18		* 44		* 18
Max Q Clear Time (g_c+I1), s		11.1		9.9		28.1		13.9
Green Ext Time (p_c), s		16.7		1.2		10.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	5	10	0	30	10	705	10	50	775	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	11	0	33	11	766	11	54	842	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1362	1756	427	1323	1755	389	853	0	0	777	0	0
Stage 1	957	957	-	793	793	-	-	-	-	-	-	-
Stage 2	405	799	-	530	962	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	107	84	576	114	84	610	782	-	-	835	-	-
Stage 1	277	334	-	348	398	-	-	-	-	-	-	-
Stage 2	593	396	-	500	332	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	90	72	576	100	72	610	782	-	-	835	-	-
Mov Cap-2 Maneuver	90	72	-	100	72	-	-	-	-	-	-	-
Stage 1	270	293	-	339	388	-	-	-	-	-	-	-
Stage 2	547	386	-	434	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.5	19.7	0.2	1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	90	576	100	610	835	-	-
HCM Lane V/C Ratio	0.014	-	-	0.06	0.009	0.109	0.053	0.065	-	-
HCM Control Delay (s)	9.7	0.1	-	47.6	11.3	45.3	11.2	9.6	0.5	-
HCM Lane LOS	A	A	-	E	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.4	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	23.9
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	33	256	663	859
Demand Flow Rate, veh/h	33	261	676	876
Vehicles Circulating, veh/h	1032	721	389	178
Vehicles Exiting, veh/h	22	339	676	804
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.2	14.9	18.3	33.2
Approach LOS	B	B	C	D

Lane	Left	Left	Left	Right	Bypass	Left	Right
Designated Moves	LTR	LTR	LT	R	R	LT	R
Assumed Moves	LTR	LTR	LT	R	R	LT	R
RT Channelized					Free		
Lane Util	1.000	1.000	0.836	0.164		0.987	0.013
Critical Headway, s	5.193	5.193	5.193	5.193		5.193	5.193
Entry Flow, veh/h	33	261	565	111	0	865	11
Cap Entry Lane, veh/h	403	549	766	766	1632	946	946
Entry HV Adj Factor	0.997	0.982	0.981	0.982	0.980	0.980	1.000
Flow Entry, veh/h	33	256	554	109	0	848	11
Cap Entry, veh/h	401	539	751	752	1600	927	946
V/C Ratio	0.082	0.475	0.738	0.145	0.000	0.915	0.012
Control Delay, s/veh	10.2	14.9	20.7	6.3	0.0	33.6	3.9
LOS	B	B	C	A	A	D	A
95th %tile Queue, veh	0	3	7	1	0	14	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Approach	NW
Entry Lanes	1
Conflicting Circle Lanes	1
Adj Approach Flow, veh/h	170
Demand Flow Rate, veh/h	174
Vehicles Circulating, veh/h	886
Vehicles Exiting, veh/h	179
Follow-Up Headway, s	3.186
Ped Vol Crossing Leg, #/h	0
Ped Cap Adj	1.000
Approach Delay, s/veh	14.4
Approach LOS	B

Lane	Left
Designated Moves	LR
Assumed Moves	LR
RT Channelized	
Lane Util	1.000
Critical Headway, s	5.193
Entry Flow, veh/h	174
Cap Entry Lane, veh/h	466
Entry HV Adj Factor	0.976
Flow Entry, veh/h	170
Cap Entry, veh/h	455
V/C Ratio	0.373
Control Delay, s/veh	14.4
LOS	B
95th %tile Queue, veh	2

APPENDIX F

Environmental

ENGINEERING
PLANNING
SURVEYING
PC

Bill Nye Avenue
Corridor Study
Laramie, Wyoming

Environmental Review

Prepared for:

AVI, P.C.

1103 Old Town Lane, Suite 101
Cheyenne, Wyoming 82009

Prepared by:

Western EcoSystems Technology, Inc.
415 West 17th Street, Suite 200
Cheyenne, Wyoming 82001

April 18, 2016

WEST Inc.

NATURAL RESOURCES ◆ SCIENTIFIC SOLUTIONS

TABLE OF CONTENTS

1.0 Purpose and Need 1
1.1 Project Description 1
1.2 Purpose and Need 1
2.0 Alignment Alternatives Proposed 1
3.0 Affected Environment 3
3.1 Land Use/Important Farmland/Formally Classified Lands 3
3.1.1 Affected Environment 3
3.2 Waterbodies and Floodplains 3
3.2.1 Affected Environment 3
3.3 Wetlands 4
3.3.1 Affected Environment 4
3.4 Historic Properties 6
3.4.1 Affected Environment 6
3.5 Vegetation 6
3.6.1 Affected Environment 6
3.6 Wildlife 6
3.6.1 Affected Environment 6
3.7 Special Status Species 7
3.7.1 Affected Environment 7
4.0 References 12
5.0 List of Preparers 13

LIST OF TABLES

Table 1. Endangered and Threatened Species with a Potential to Occur in the Bill Nye Corridor Study Area. 7
Table 2. Migratory Birds with a Potential to Occur in Bill Nye Corridor Study Area. 9

LIST OF FIGURES

Figure 1: Bill Nye Corridor Study Area and Proposed Alignment Alternatives. 2
Figure 2: Preliminary identification of Potential Jurisdictional Waters. 5

LIST OF ATTACHMENTS

Attachment A: Agency Correspondence

1.0 Purpose and Need

1.1 Project Description

Western EcoSystems Technology, Inc. (WEST) has completed this Environmental Review (ER) in support of the Bill Nye Corridor Study. For the purposes of this ER, the boundaries of the Bill Nye Corridor Study area are Russell Street to Interstate 80 (north to south) and 15th Street to 3rd Street (east to west) (Figure 1). This ER presents observed environmental conditions and documents any potential impacts to biological resources associated with the alignment alternatives identified in the Bill Nye Corridor Study (AVI 2016).

The alignment alternatives are intended to connect Bill Nye Avenue with 15th Street and 3rd Street. The Bill Nye Corridor Study area is crossed by Spring Creek, which runs from 3rd Street northeast near 9th Street and then runs parallel, south of Russel Street (Figure 1). The Bill Nye Corridor Study area generally consists of R1-Low Density Residential, R2-Medium Density Residential, R3-Multifamily Residential, B1-Limited Business, B2-General Business with various residential and business developments.

1.2 Purpose and Need

The City of Laramie (City) envisions the Bill Nye corridor to be a major east-west Minor Arterial connecting the City's southern gateway with its eastern gateway (i.e. connect 3rd Street and Grand Avenue). The primary purpose of the Bill Nye Corridor Study is to create an comprehensive planning document to guide and promote future development of the corridor.

2.0 Alignment Alternatives Proposed

After careful consideration and vetting through the Bill Nye Corridor Study steering committee (AVI 2016), the City identified three alignment alternatives (Figure 1) for planning purposes.

- No Action Alternative: Continuing using 15th Street and Russel Street to connect 3rd Street and Bill Nye Avenue. This alternative would include a bridge enlargement on 15th Street at the Spring Creek crossing.
- Bill Nye Avenue Realignment: Connecting Bill Nye Avenue to 9th Street and 3rd Street south of Spring Creek at Boswell Drive. This alternative would include a roundabout at the intersection of 3rd Street and Boswell Drive/Bill Nye Avenue and pedestrian facilities.
- East Palmer Drive: Connecting Bill Nye Avenue to 9th Street and 3rd Street north of Spring Creek opposite of East Palmer Drive. This alternative would include a cul-de-sac on Boswell Drive and pedestrian facilities.

Figure 1: Bill Nye Corridor Study Area and Proposed Alignment Alternatives.

3.0 Affected Environment

3.1 Land Use/Important Farmland/Formally Classified Lands

3.1.1 Affected Environment

The Bill Nye Avenue Realignment alternative and East Palmer Drive alternative (Figure 2) both cross the same land use zoning, low and medium density residential (R1 and R) and limited business and general business properties (B1 and B2). The majority of limited business zoned lands (B1) crossed by the alternatives were vacant properties. The No Action Alternative (Figure 2) generally crosses residentially developed areas of various densities, R1, R2, and R3, and a small area zoned general business (B2) at the intersection of Russel Street and 3rd Street.

WEST accessed the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey to identify surficial soil types within the proposed alternatives. All three alignment alternatives were identified to be underlain by Gypla-Urban land complex with little to no slope. As described by the Soil Survey of Albany County Area, Wyoming (Soil Survey, NRCS 1998), Gypla-Urban soils are 50% Gypla loam and 40% Urban land. The Soil Survey described Gylpa soils as moderately permeable, poorly drained soils with a high content of calcium carbonate, gysum, and other salts that can restrict plant growth. Urban land is a generic term used to describe lands covered in buildings, asphalt, or concrete whereby the original soils have been substantially altered (NRCS 1998). The Soil Survey suggested that Urban soils, fill material, commonly found in the City are a fine red sandy loam. The Soil Survey did not describe any Prime or Unique Farmlands within any of the alignment alternatives; therefore, no impacts to Prime or Unique farmlands are likely.

3.2 Waterbodies and Floodplains

3.2.1 Affected Environment

As mentioned previously, Spring Creek crosses the Bill Nye Corridor Study area and the creek is crossed by each alignment alternative (Figure 2). Spring Creek was not identified as a Wild or Scenic River, (Rivers 2009), a Class I water (WDEQ 2001), nor a designated blue or red ribbon stream (WGFD 2016).

According to the Federal Emergency Management Agency (FEMA) flood map for the proposed project area (Map # 56001C1765E, FEMA 2011), the East Palmer Drive alternative crosses and has the potential to impact the FEMA defined floodplains for Spring Creek (FEMA 2011). Pedestrian facilities associates with the Bill Nye Avenue Realignment alternative would cross and potentially affect Spring Creek's floodplain. Under the No Action Alternative, the proposed bridge expansion also has the potential to impact the Spring Creek floodplains.

Detailed project engineering and design will be necessary to determine if Section 401 and Section 404 permits would be required from U. S. Army Corps of Engineers (ACOE) and if a Water Quality Certification from the Wyoming Department of Environmental Quality – Water Quality Division would be necessary.

3.3 Wetlands

3.3.1 Affected Environment

WEST conducted surveys along the Bill Nye Avenue Realignment and East Palmer Drive alternatives including associated pedestrian facilities. At the time of WEST's surveys, WEST was unaware of the possible bridge expansion as part of the No Action Alternative, and therefore did not survey this location. During surveys, WEST identify wetlands and other waters of the U.S. that are regulated by the ACOE.

WEST delineated six wetlands (Figure 2), all of which were palustrine emergent wetlands dominated by herbaceous vegetation. Two of the wetlands occur at the Spring Creek crossings of the East Palmer Drive and the pedestrian facilities of the Bill Nye Avenue Realignment alternatives. Both of these wetlands are located along the low terraces of the creek, on either side of the channel. Spring Creek is a waters of the U.S.

The four remaining wetlands were delineated along the Bill Nye Avenue Realignment alternative. The majority of this alternative occurs within a broad, saline bottomland area that likely has a seasonal high water table. Hydrology in this area has likely been altered from adjacent residential and commercial development, possibly resulting in additional runoff into the lowland area. Two of the four wetlands were identified as "Wetland" (Figure 3) and are likely jurisdictional. The other two wetlands along the Bill Nye Avenue Realignment alternative were identified as "Potential Wetland" and will require further field surveys during the growing season to determine their regulatory status.

Due to substantial snow cover, surveys could not be completed near the proposed roundabout at the western terminus of the Bill Nye Avenue Realignment alternative (Figure 2). If this alternative is selected, surveys within this area will need to be conducted once snow cover has melted. Based on aerial review of this area, there are drainage ditches on either side of 3rd Street that are likely waters of the U.S. because of their direct hydrologic connection to the Laramie River. Additionally, there may be wetlands associated with the ditches. The No Action Alternative would require a bridge expansion for the crossing of Spring Creek. This area was not surveyed and will require additional review, if this alternative is selected. However, assuming similar conditions are present at the No Action Alternative crossing of Spring Creek as were observed at the East Palmer Drive alternative crossing, wetlands within the low terrace of the creek are likely.

WEST discussed the "Potential Wetlands" with the ACOE and they recommended additional field investigations during the appropriate season. The ACOE also identified an existing mitigation area between I-80 and the westbound on/off ramps (Figure 2). It appears that a portion of the "Potential Wetland" mapped in this area overlaps part of an existing mitigation site. The ACOE informed WEST that affecting an existing mitigation site would result in additional project permitting and higher mitigation ratios.

Detailed project engineering and design would be necessary to determine if an ACOE Nationwide or Individual Permit would be needed for the proposed project.

Figure 2: Preliminary identification of Potential Jurisdictional Waters.

3.4 Historic Properties

3.4.1 Affected Environment

The alignment alternatives are located on land previously disturbed as defined by the Soil Survey. However, there still exists the possibility that cultural resources may be present within the alignment alternatives. WEST contacted Wyoming State Parks and Cultural Resources State Historic Preservation Office (SHPO) requesting a review of the proposed project with respect to known or potential cultural or historical resources in the alignment alternatives (Appendix A). Mary Hopkins of the Wyoming SHPO contacted WEST via telephone and suggested SHPO would consult directly with the City or Wyoming Department of Transportation directly on this project.

3.5 Vegetation

3.6.1 Affected Environment

Dominant plant species identified within the proposed project area included greasewood (*Sarcobatus vermiculatus*) in the shrub layer and inland salt grass (Distichilis spicata) in the ground cover. Due to the disturbed nature of the area, no substantial representation of trees was present. The dominance of greasewood is consistent with high salt containing Gyla soils, as is inland salt grass. Inland salt grass, with its shallow stolons, is further indicative of Gylpa soils as this soil type commonly restricts significant root growth in plants. Areas identified as wetlands or potential wetlands were observed to contain common wetland plants such as sedges (*Carex utriculata*), Colorado rush (*Juncus confuses*), alkali cordgrass (*Spartina gracilis*), and cattails (*Typha latifolia*).

While all of the alignment alternatives would remove vegetation, they all consisted of previously disturbed land within the City of Laramie. The vegetation potentially removed and/or disturbed outside of wetlands by a selected alignment alternative would not provide unique or critical wildlife habitat. The removal of the vegetation is unlikely to result in long-term destabilization of soils or increased erosion. Previously disturbed areas are susceptible to noxious or invasive plants establishment. The application of best management practices would minimize the establishment or spread of noxious or invasive plants regardless of the alignment alternative selected to be constructed.

3.6 Wildlife

3.6.1 Affected Environment

The generally urban setting of the alignment alternatives has significantly degraded wildlife habitats due to previous disturbances. As a result, wildlife in the area is likely dominated by species that generally are associated with human activity or are cosmopolitan in distribution. Species including American robins (*Turdus migratorius*), pigeons (*Columba livia*), European starlings (*Sturnus vulgaris*), cottontail rabbits (*Sylvigus nuttallii*), ground squirrels (*Urocitellus elegans*), kangaroo rats (*Dipodomys ordii*), bullfrogs (*Lithobates catesbeianus*) and garter snakes (*Thamnophis radix*) would be expected to be present within the alignment alternatives. Generally, it is expected that if a species occurs in the current heavily urbanized setting with the

existing disturbances to native plant communities, the new disturbances associated with the alignment alternatives would not significantly affect these species.

WEST sent letters to the Wyoming Game and Fish Department (WGFD) and the US Fish and Wildlife Service (USFWS) (Appendix A) requesting a review of their records in association with known or potential for agency concerns within the alignment alternatives. The USFWS' response is discussed in Section 3.7.1. WGFD identified no terrestrial wildlife concerns but did recommend several actions to protect aquatic resources within alignment alternatives (Appendix A). Aquatic protections recommended by WGDF included best management practices to ensure sediments and pollutants are confined and disturbed soils are re-vegetated to maintain water quality. WGFD recommended servicing and fueling of vehicles and equipment during construction be at least 500 feet from riparian areas. Lastly, WGFD identified several practices required under state statutes and Wyoming Game and Fish Commission Regulation to prevent the spread of aquatic invasive species (Appendix A). Furthermore, publically available data from WGFD suggest no known wildlife migration corridors in alignment alternatives (WGFD 2015).

3.7 Special Status Species

3.7.1 Affected Environment

WEST performed an Information for Planning and Conservation (IPaC) review and generated an IPaC Trust Resources Report (IPaC Report) through the Environmental Conservation Online System of the USFWS for potential federally listed species in the Bill Nye Corridor Study area. The IPaC Report (2016) suggested the potential for several species protected under the Endangered Species Act (ESA 1973) within the Bill Nye Corridor Study area (Table 1). Of these species, three species may have suitable habitat present, the Preble's meadow jumping mouse, western prairie fringe orchid and Wyoming toad. The Wyoming toad and Preble's meadow jumping mouse prefer undisturbed grasslands near water that may be available within the Spring Creek floodplain and other isolated wet areas across alignment alternatives. However, the Preble's meadow jumping mouse generally prefers a woody plant community component within its preferred habitat, which is missing in the Spring Creek floodplain.

Table 1. Endangered and Threatened Species with a Potential to Occur in the Bill Nye Corridor Study Area.

Species	Scientific Name	Status	Habitat	Availability of Habitat
black-footed ferret	*Mustela nigripes*	Endangered	Prairie dog towns	No prairie dog towns in the alignment alternatives
least tern	*Sterna antillarum*	Endangered	Sandy and gravelly river and lake banks	No sandy riverbanks within alignment alternatives

Table 1. Endangered and Threatened Species with a Potential to Occur in the Bill Nye Corridor Study Area.

Species	Scientific Name	Status	Habitat	Availability of Habitat
pallid sturgeon	*Scaphirhynchus albus*	Endangered	Large murky river systems within the Mississippi and Missouri River basins	The alignment alternatives only contains Spring Creek. This waterbody is not suitable for this species.
piping plover	*Charadrius melodus*	Threatened	Sandy beaches and occasionally on sandy riverbanks, normally above the timberline.	No sandy riverbanks within alignment alternatives.
Preble's meadow jumping mouse	*Zapus hundsonius preblei*	Threatened	Relatively undisturbed grasslands near a consistent water source with a woody plant community component.	Unlikely as the Spring Creek floodplain may provide suitable habitat for this species, but lacks a woody plant community preferred by this species.
western prairie fringed orchid	*Platanthera praeclara*	Threatened	Mesic to wet unplowed tallgrass prairie and meadows. Sometimes found in roadside ditched.	Alignment alternatives are in disturbed area, void of unmolested plant communities.
whooping crane	*Grus americana*	Endangered	Breed in shallow grassy wetlands. Migrate stop-over in wide shallow river flats.	Not know to breed in Wyoming. No wide river flats in alignment alternatives.
Wyoming toad	*Bufo hemiophrys baxteri*	Endangered	Floodplains, ponds, and seeps in shortgrass plant communities.	The Spring Creek floodplain may provide suitable habitat for this species.

The IPaC Trust Resources Report also provided information regarding 20 birds (Table 2) protected under the Migratory Bird Treaty Act (MBTA 1918) and Bald and Golden Eagle Protection Act (BGEPA 1940). Of the bird species identified by the IPaC Report, American bittern (*Botaurus lentiginosus*), long billed curlew (*Numenius americanus*), short eared owl (*Asio flammeus*) and western grebe (*Aechmophorus occidentalis*) may have suitable habitat present with alignment alternatives, however the presence of these birds within the alignment alternatives are unlikely (Table 2). Suitable habitat or conditions are not present for the remaining 16 bird species (Table 2).

Table 2. Migratory Birds with a Potential to Occur in Bill Nye Corridor Study Area.

Species	Scientific Name	Habitat	Availability of Habitat
American bittern	*Botaurus lentiginosus*	Freshwater marshes and wetlands of tall but typically less dense vegetation. Commonly builds nest on cattails, bulrushes and sedges on shallow waters.	Suitable habitat may be present within wetlands and the low terrace of Spring Creek. However, the use of Spring Creek by American bittern is unlikely except as a stopover location.
Bald eagle	*Haliaeetus leucocephalus*	Typically nest in forested areas adjacent to large bodies of water, and generally avoids heavily developed area.	No suitable forested areas or large waterbodies present within alignment alternatives. Area likely too developed for eagle's preferences.
Black Rosy-finch	*Leucosticte atrata*	Breeds in alpine areas above the timberline usually near rock piles or cliffs. Winters in open areas of mountain meadows, high desert, plains and valleys.	Alignment alternatives are located below the timberline. No suitable alpine areas, high desert, plains or valley s present.
Brewer's sparrow	*Spizella breweri*	Sagebrush obligate. Nest in tall and densely branched shrubs, often big sagebrush.	No sagebrush nor dense shrub stands present in alignment alternatives.
Brown-capped Rosy-finch	*Leucosticte australis*	Nest in abandoned buildings, cliffs, caves, and rocks slides above the timberline. Winters in alpine tundras, high parks, meadow and mountain valleys.	Alignment alternatives are located below the timberline. No suitable alpine areas, high parks, or valleys present.
Burrowing owl	*Athene cunicularia*	Open treeless areas with low sparse vegetation, usually on gently sloping ground. Generally associated with high densities of burrowing mammals.	Alignment alternatives were not observed to have a high density of burrowing mammals present. High water table and sandy soils generally make burrowing prohibitive.
Cassin's finch	*Carpodacus cassinii*	Expansive stands of mature conifers, including lodgepole pine, ponderosa pine, limber pine, Douglas-fir, pinyon pine, and bristlecone pine. Occasionally found in aspen stands.	No stands of conifers or aspens present in alignment alternatives.
Ferruginous hawk	*Buteo regalis*	Nest on cliffs and rock outcropping or within groves of tress. Generally found in open country grasslands with abundant prairie dog or ground squirrel populations.	No suitable nesting locations nor substantial ground squirrel or prairie dog population are present in alignment alternatives.

Table 2. Migratory Birds with a Potential to Occur in Bill Nye Corridor Study Area.

Species	Scientific Name	Habitat	Availability of Habitat
Golden eagle	*Aquila chrysaetos*	Found in open and semi-open areas, generally associated with canyonlands, rimrock terrain, and riverside cliffs and bluffs. This is eagle avoids developed areas.	No suitable cliffs, bluffs rimrock or other preferred habitat present in alignment alternatives. Area likely too developed for eagle's preferences.
Greater sage-grouse	*Centrocercus urophasianus*	Sagebrush obligate. Usually nest in areas with relatively dense cover of big sagebrush. Growing chicks and hens can be found in areas with good forage, including irrigated pastures and alfalfa fields.	No sagebrush present in Alignment alternatives. No suitable high quality forage available.
Loggerhead shrike	*Lanius ludovicianus*	Inhabits open country with short vegetation and scattered trees and shrubs, nests in dense trees or shrubs particularly with spines or thorns. Found in agricultural fields, pastures, old orchards, riparian areas, prairies, and mowed roadsides.	No dense stands of trees or shrubs with thorns or spines suitable for nesting are present within the alignment alternatives.
Long-billed curlew	*Numenius americanus*	During breeding, found in native dry grasslands and sagebrush prairies on a mostly featureless terrain with damp to wet areas to provide foraging areas.	Marginal grasslands present within alignment alternatives for possible suitable habitat. However, existing disturbances makes it unlikely that this curlew would utilized the alignment alternatives.
McCown's longspur	*Calcarius mccownii*	Wide open sparse short grass plains, plowed and stubble fields, and bare or nearly bare ground.	Wide open plains are not present within the alignment alternatives.
Mountain plover	*Charadrius montanus*	Semi-arid plains, grasslands plateaus with very short grass or even bare ground and typically miles from water. Nest on barren ground in large prairie dog towns.	No prairie dog towns present within the alignment alternatives. Presences of Spring Creek and wetlands are likely to deter this bird.
Sage thrasher	*Oreoscoptes montanus*	Sagebrush obligate breeding exclusively in shrubsteppe communities dominated by big sagebrush. Requires dense ground cover for concealment.	No sagebrush or dense ground cover present within alignment alternatives.

Table 2. Migratory Birds with a Potential to Occur in Bill Nye Corridor Study Area.

Species	Scientific Name	Habitat	Availability of Habitat
Short-eared owl	*Asio flammeus*	Found in large open areas with low vegetation including prairies, meadows, shrubsteppe, savannas, tundras, marshes, and agricultural fields.	Low vegetation present, for potential habitat, however the lack of openness within the alignment alternatives likely deters this owl.
Swainson's hawk	*Buteo swainsoni*	Forages in native prairies and grasslands as well as agricultural fields such as alfalfa fields, row crops, pastures and grain fields. Relies on stands of trees adjacent to grasslands and agricultural fields for nesting.	Alignment alternatives do not contain suitable foraging areas or nesting structure.
Western grebe	*Aechmophorus occidentalis*	Breeds on freshwater lakes and marshes with extensive open water bordered by emergent vegetation. Feed mainly on fish, crustaceans and worms.	Possible habitat present within Spring Creek and its low terrace. However, the use of Spring Creek by western grebes is unlikely except as a stopover location.
Williamson's sapsucker	*Sphyrapicus thyroideus*	Cavity nesting woodpecker found in open conifer or aspen forest. Specialized in drilling for coniferous sap.	No substantial stand of conifer trees or forest present within alignment alternatives.
Willow flycatcher	*Empidonax traillii*	Nests in moist dense shrubby areas usually over or close to water.	No dense shrub cover near water within alignment alternatives.

Additional habitat or species surveys maybe warranted pending detailed project engineering and design.

As previously mentioned, WEST sent letters to the WGFD and USFWS (Appendix A) requesting a review of their records in association with known or potential for agency concerns within the proposed project area. USFWS responded, suggesting the alignment alternatives would be in compliance with the Endangered Species Act. However, the USFWS did further state that if any new information suggested affects to protected species that they should reanalyze the project in light of the new information.

4.0 References

AVI Professional Corporation (AVI). 2016. Bill Nye Corridor Study Draft March 2016.

Federal Emergency Management Agency (FEMA). 2011. Flood map 56001C1765E. Available online at: http://map1.msc.fema.gov/idms/IntraView.cgi?ROT=0&O_X=9699&O_Y=4746&O_ZM=0.154664&O_SX=1454&O_SY=663&O_DPI=400&O_TH=94194158&O_EN=94468642&O_PG=1&O_MP=1&CT=0&DI=0&WD=14400&HT=10345&JX=1592&JY=723&MPT=0&MPS=0&ACT=4&KEY=94193705&ITEM=1&PICK_VIEW_CENTER.x=630&PICK_VIEW_CENTER.y=-285.5 Accessed April 4, 2016.

National Wild and Scenic Rivers System (Rivers). 2009. Wild and Scenic Rivers System: Designated Rivers for Wyoming. Available at: http://www.rivers.gov/wyoming.php Accessed on April 6, 2016.

US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI). 2004. National Wetlands Inventory Map. Wetlands Download, USFWS. Aerial Photo Source, Oregon Geospatial Data Clearinghouse.

U.S. Fish and Wildlife Service (USFWS). 2016. Information for Planning and Conservation (IPaC) Trust Resources Report. Developed at http://ecos.fws.gov/ipac/ Accessed April 4, 2016.

Wyoming Department of Environmental Quality (WDEQ). 2001. Wyoming Surface Water Classifiaction List. Avaialbe at http://pbadupws.nrc.gov/docs/ML1301/ML13016A388.pdf Accessed April 6, 2016.

Wyoming Game and Fish Department (WGFD). 2016. Blue and Red Ribbon Streams available at https://wgfd.wyo.gov/WGFD/media/content/PDF/Fishing/Stream%20Class/WYSTREAM_BLUEREDRIBBON_LIST.pdf, Accessed March 11, 2016.

Wyoming Game and Fish Department (WGFD). 2015. Wyoming Game and Fish Department Big Game GIS Dada. Available at https://wgfd.wyo.gov/Wildlife-in-Wyoming/Geospatial-Data/Big-Game-GIS-Data, Accessed December 14, 2015.

5.0 List of Preparers

Gretchen Norman, Project Manager
David Taylor, Biologist, Report Preparation
Kurt Flaig, Biologist, Field Biologist
Jon Cicarelli, GIS Technician, Map Preparation

Attachment A: Agency Correspondence

April 5, 2016

Mary Hopkins, SHPO
Wyoming State Historic Preservation Office
2301 Central Avenue, Barrett Building, 3rd Floor
Cheyenne, WY 82002

RE: Identification of Cultural Resources at Bill Nye Corridor

Dear Ms. Hopkins:

The enclosed map shows the proposed project area for the Bill Nye Corridor Study. The proposed project area is in Section 4, Township 15 North, Range 73 West, Albany County, Wyoming.

The City of Laramie (the City), Community Development Department is analyzing alternative alignments of Bill Nye Avenue between 3rd and 9th Streets to identify and propose adequate mitigation of any adverse impacts caused by modification to the Corridor. The City will partner with the Wyoming Department of Transportation (WYDOT) and directly affected private property owners in this undertaking.

Bill Nye Avenue is envisioned to be the major east-west Minor Arterial corridor connecting the City's southern gateway with its eastern gateway. Bill Nye Avenue is a Minor Arterial street identified on the adopted Major Street and Highway Plan and shown in Laramie Comprehensive Plan. The Corridor is an approximate ½ mile long stretch of Bill Nye Avenue that will ultimately connect 9th Street to 3rd Street and traverses a 91-acre area bounded by 3rd Street, Russell Street, 9th Street, Interstate 80 and Boswell Drive. The area is bisected by the Spring Creek Channel which runs from the northeast corner of the area towards the southwest portion of the area.

The City of Laramie is committed to complying with federal requirements and Executive Orders, and seeks to integrate energy efficiency practices into all aspects of day-to-day operations, from capital construction to staff behaviors, to ensure economic and environmental sustainability. On behalf of the City, we are contacting you to ensure this project complies with applicable authorities under your agency's jurisdiction.

Please review this project with respect to your agency's concerns and provide a response to me. If your agency has concerns and will not issue a clearance, please contact me at your earliest convenience concerning what steps must be taken to address your concerns.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the project, please contact Gretchen Norman at 634-1756. Thank you for your attention in this matter.

Sincerely,

Gretchen Norman
Project Manager

April 5, 2016

Mary Flanderka, Statewide Habitat Protection Supervisor
Wyoming Game and Fish Department
5400 Bishop Boulevard
Cheyenne, WY 82006

RE: Identification of Natural Resources at Bill Nye Corridor

Dear Ms. Flanderka:

The enclosed map shows the proposed project area for the Bill Nye Corridor Study. The proposed project area is in Section 4, Township 15 North, Range 73 West, Albany County, Wyoming.

The City of Laramie (the City), Community Development Department is analyzing alternative alignments of Bill Nye Avenue between 3rd and 9th Streets to identify and propose adequate mitigation of any adverse impacts caused by modification to the Corridor. The City will partner with the Wyoming Department of Transportation (WYDOT) and directly affected private property owners in this undertaking.

Bill Nye Avenue is envisioned to be the major east-west Minor Arterial corridor connecting the City's southern gateway with its eastern gateway. Bill Nye Avenue is a Minor Arterial street identified on the adopted Major Street and Highway Plan and shown in Laramie Comprehensive Plan. The Corridor is an approximate ½ mile long stretch of Bill Nye Avenue that will ultimately connect 9th Street to 3rd Street and traverses a 91-acre area bounded by 3rd Street, Russell Street, 9th Street, Interstate 80 and Boswell Drive. The area is bisected by the Spring Creek Channel which runs from the northeast corner of the area towards the southwest portion of the area.

The City of Laramie is committed to complying with federal requirements and Executive Orders, and seeks to integrate energy efficiency practices into all aspects of day-to-day operations, from capital construction to staff behaviors, to ensure economic and environmental sustainability. On behalf of the City, we are contacting you to ensure this project complies with applicable authorities under your agency's jurisdiction.

Please review this project with respect to your agency's concerns and provide a response to me. If your agency has concerns and will not issue a clearance, please contact me at your earliest convenience concerning what steps must be taken to address your concerns.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the project, please contact Gretchen Norman at 634-1756. Thank you for your attention in this matter.

Sincerely,

Gretchen Norman
Project Manager

WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006
Phone: (307) 777-4600 Fax: (307) 777-4699
wgfd.wyo.gov

GOVERNOR
MATTHEW H. MEAD

DIRECTOR
SCOTT TALBOTT

COMMISSIONERS
T. CARRIE LITTLE – President
KEITH CULVER – Vice President
MARK ANSELMI
PATRICK CRANK
RICHARD KLOUDA
CHARLES PRICE
DAVID RAEL

April 18, 2016

WER 13809.00
WEST Inc.
Identification of Natural Resources
at Bill Nye Corridor
Albany County

Gretchen Norman
Project Manager
WEST Inc.
415 W 17th Street, Suite 200
Cheyenne, WY 82001

Dear Ms. Norman:

The staff of the Wyoming Game and Fish Department (WGFD) has reviewed the Identification of Natural Resources at Bill Nye Corridor. We offer the following comments for your consideration.

Terrestrial Considerations:

We have no terrestrial wildlife concerns pertaining to the proposed project.

Aquatic Considerations:

To minimize impacts to the aquatic resources of nearby waterways, we recommend the following:

- Accepted best management practices be implemented to ensure that all sediments and other pollutants are contained within the boundaries of the work area. Disturbed areas that are contributing sediment to surface waters as a result of project activities should be promptly re-vegetated to maintain water quality.

- Equipment should be serviced and fueled away from streams and riparian areas. Equipment staging areas should be at least 500 feet from riparian areas.

- Preventing the spread of aquatic invasive species (AIS) is a priority for the State of Wyoming, and in many cases, the intentional or unintentional spread of organisms from one body of water to another would be considered a violation of State statute and

Wyoming Game and Fish Commission Regulation. To prevent the spread of AIS, the following is required:

1. If equipment has been used in a high risk infested water [a water known to contain Dreissenid mussels (zebra/quagga mussels)], the equipment must be inspected by an authorized aquatic invasive species inspector recognized by the state of Wyoming prior to its use in any Wyoming water during all times of year.

2. Any equipment entering the state by land from March through November (regardless of where it was last used), must be inspected by an authorized aquatic invasive species inspector prior to its use in any Wyoming water.

3. If aquatic invasive species are found, the equipment will need to be decontaminated by an authorized aquatic invasive species decontaminator.

4. Any time equipment is moved from one 4th level (8-digit Hydrological Unit Code) watershed to another within Wyoming, the following guidelines are recommended:
   DRAIN: Drain all water from watercraft, gear, equipment, and tanks. Leave wet compartments open to dry.
   CLEAN: Clean all plants, mud, and debris from vehicle, tanks, watercraft, and equipment.
   DRY: Dry everything thoroughly. In Wyoming, we recommend drying for 5 days in summer (June - August); 18 days in Spring (March - May) and Fall (September - November); or 3 days in Winter (December - February) when temperatures are at or below freezing.

5. Any equipment used in a Wyoming water that contains AIS, must be inspected before use in another water. Species currently found in Wyoming waters include New Zealand mudsnail, Asian clam, and curly pondweed. Information on currently affected waters can be found at: http://wgfd.wyo.gov/web2011/Departments/Fishing/pdfs/AIS_WYWATER_MONITOR130005236.pdf.

*A list of high risk infested waters and locations in Wyoming to obtain an AIS inspection can be found at: wgfd.wyo.gov/AIS.

Thank you for the opportunity to comment. If you have any questions or concerns, please contact Rick Huber, Staff Aquatic Biologist, at 307-777-4558.

Sincerely,

Mary Flanderka
Habitat Protection Supervisor

MF/rh/ns

cc: USFWS
Lee Knox, WGFD, Laramie Region
Corey Class, WGFD, Laramie Region
Chris Wichmann, Wyoming Department of Agriculture, Cheyenne
Mike Snigg, WGFD, Laramie Region

April 5, 2016

R. Mark Sattelberg, Field Supervisor
Ecological Services
US Fish & Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

RE: Identification of Natural Resources at Bill Nye Corridor

Dear Mr. Sattelberg:

The enclosed map shows the proposed project area for the Bill Nye Corridor Study. The proposed project area is in Section 4, Township 15 North, Range 73 West, Albany County, Wyoming.

The City of Laramie (the City), Community Development Department is analyzing alternative alignments of Bill Nye Avenue between 3rd and 9th Streets to identify and propose adequate mitigation of any adverse impacts caused by modification to the Corridor. The City will partner with the Wyoming Department of Transportation (WYDOT) and directly affected private property owners in this undertaking.

Bill Nye Avenue is envisioned to be the major east-west Minor Arterial corridor connecting the City's southern gateway with its eastern gateway. Bill Nye Avenue is a Minor Arterial street identified on the adopted Major Street and Highway Plan and shown in Laramie Comprehensive Plan. The Corridor is an approximate ½ mile long stretch of Bill Nye Avenue that will ultimately connect 9th Street to 3rd Street and traverses a 91-acre area bounded by 3rd Street, Russell Street, 9th Street, Interstate 80 and Boswell Drive. The area is bisected by the Spring Creek Channel which runs from the northeast corner of the area towards the southwest portion of the area.

The City of Laramie is committed to complying with federal requirements and Executive Orders, and seeks to integrate energy efficiency practices into all aspects of day-to-day operations, from capital construction to staff behaviors, to ensure economic and environmental sustainability. On behalf of the City, we are contacting you to ensure this project complies with applicable authorities under your agency's jurisdiction.

Please review this project with respect to your agency's concerns and provide a response to me. If your agency has concerns and will not issue a clearance, please contact me at your earliest convenience concerning what steps must be taken to address your concerns.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the project, please contact Gretchen Norman at 634-1756. Thank you for your attention in this matter.

Sincerely,

Gretchen Norman
Project Manager

ENVIRONMENTAL & STATISTICAL CONSULTANTS
415 W. 17th Street, Suite 200, Cheyenne, WY 82001
Phone: 307-634-1756 • www.west-inc.com • Fax: 307-637-6981

NC

RECEIVED
2016 APR -7 AM 10: 59
US FISH & WILDLIFE SVC
CHEYENNE, WY

April 5, 2016

R. Mark Sattelberg, Field Supervisor
Ecological Services
US Fish & Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

RE: Identification of Natural Resources at Bill Nye Corridor

Dear Mr. Sattelberg:

The enclosed map shows the proposed project area for the Bill Nye Corridor Study. The

U.S. FISH AND WILDLIFE SERVICE

Based on the information provided, you may consider this project to be in compliance with the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 *et seq.* The project should be reanalyzed by our office if any new information indicates there may be effects to protected species or their habitats.

Date: 4-11-16 Signature: [signature]

Deputy Field Supervisor
U.S. Fish and Wildlife Service / Wyoming ES Office
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009
Phone: (307) 772-2374
Fax: (307) 772-2358

WY16CPA0166

CITY OF LARAMIE COUNCIL WORK SESSION April 26, 2016

Agenda Item: Discussion Item

Title: Presentation of the Pavement Management System

Background:

Since 1988 the City has performed annual inspections of the pavement condition throughout the community. The inspection data collected is input into a data base supporting a Pavement Management System (PMS).

> "A **Pavement Management System** is a set of defined procedures for collecting, analyzing, maintaining, and reporting pavement data, to assist decision makers in finding optimum strategies for maintaining pavements in serviceable condition over a given period of time for the least cost."

Pavement management incorporates life cycle costs into a more systematic approach to minor and major road maintenance and reconstruction projects. The needs of the entire network as well as budget projections are considered before projects are executed. Pavement management encompasses the many aspects and tasks needed to maintain a quality pavement inventory, and ensure the overall condition of the road network can be sustained at desired levels.

At the April 26, 2016 City Council Work Session, our consultant, Mr. Ted Borstad, P.E., will present information concerning our PMS and a history of results of annual pavement inspections. Mr. Borstad has also been tasked with inspecting the concrete condition throughout the community. Although these concrete inspections are outside the normal scope of services for a PMS, the data collected does provide valuable information concerning the quality of our curb, gutter and sidewalks. This base line information will be used to help guide us as we develop appropriate concrete replacement policies.

PAVEMENT MAINTENANCE AND CONCRETE FLATWORK

City of Laramie

April 26, 2016

Ted A. Borstad, P.E.

Borstad Consulting Services, LLC

OVERVIEW

- Pavement Management
- Inspections
- Results
- Planning
- Concrete Flatwork

PAVEMENT MANAGEMENT EXPERIENCE

CLIENTS

- CITIES
- COUNTIES
- UNIVERSITIES
- MILITARY BASES
- COMMERCIAL

SERVICES

- TRAINING
- INSPECTIONS
- PLANNING
- DATABASE EVALUATION
- COMPLETE IMPLEMENTATION

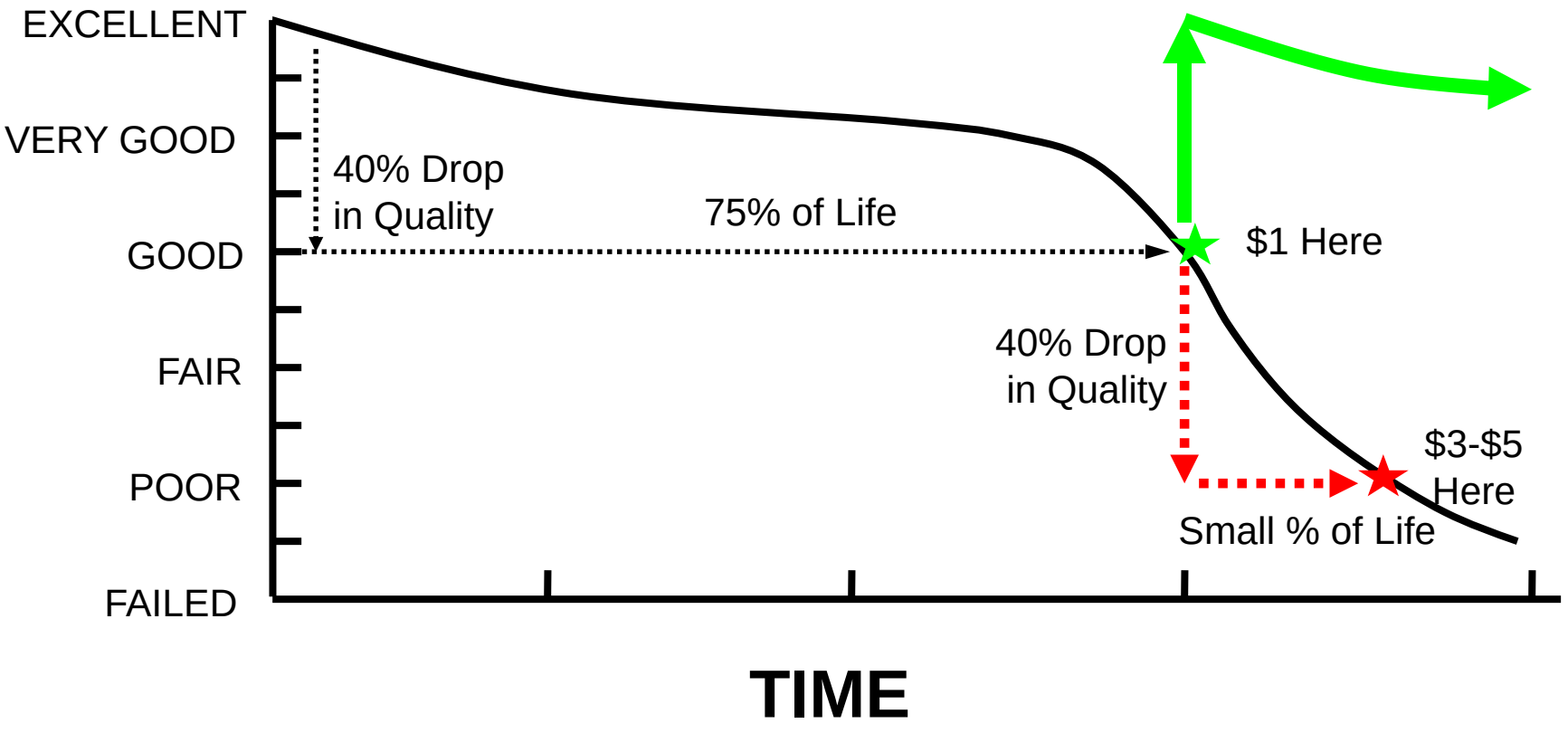
29 YEARS

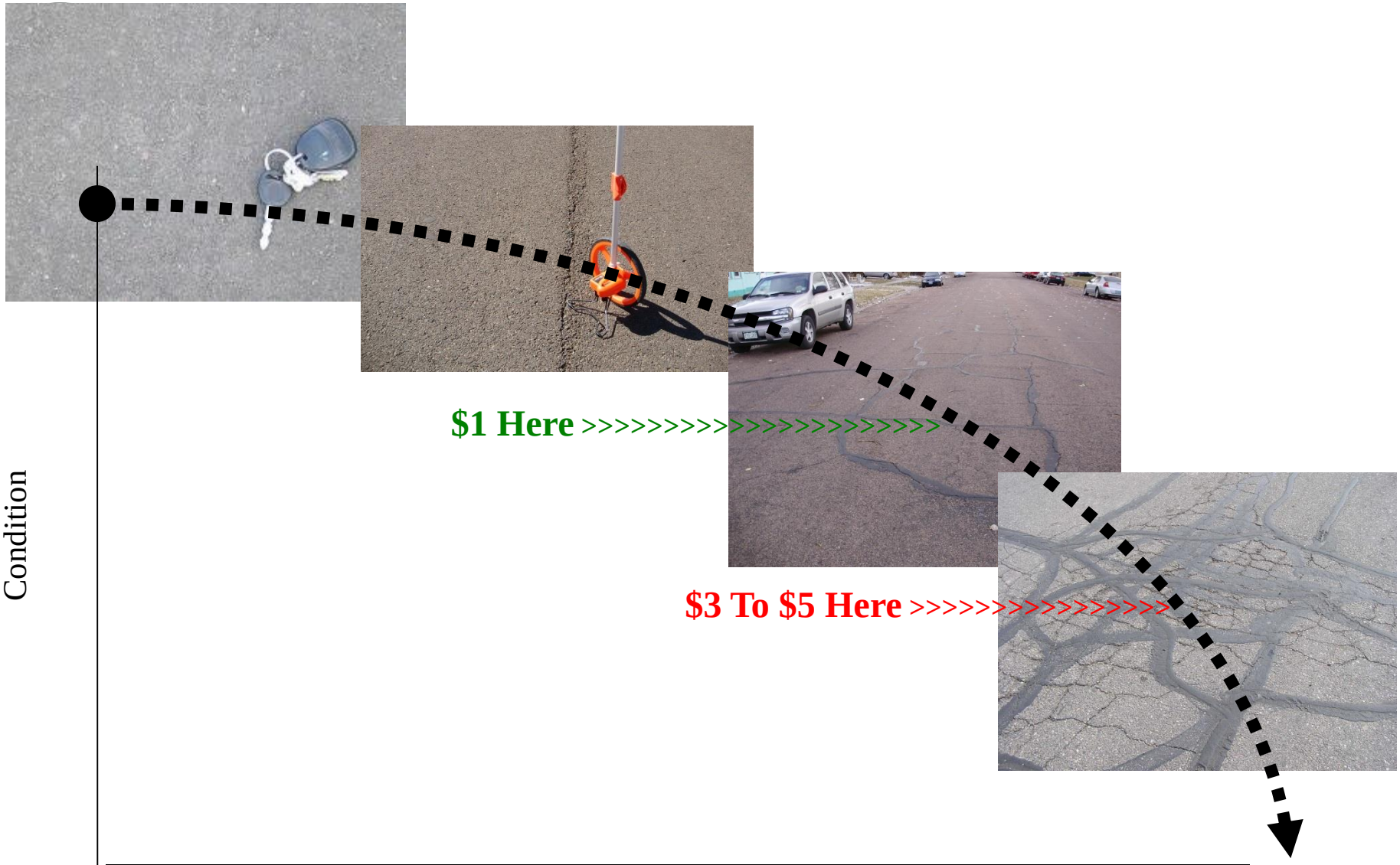
PAVER

- Corps of Engineers Program
- APWA Support
- ASTM Standard
- Roads, Parking
- Asphalt, Concrete, Gravel
- PCI: Pavement Condition Index

Laramie Implemented in ~ 1988

PAVEMENT LIFE CYCLE





Pavement Deterioration

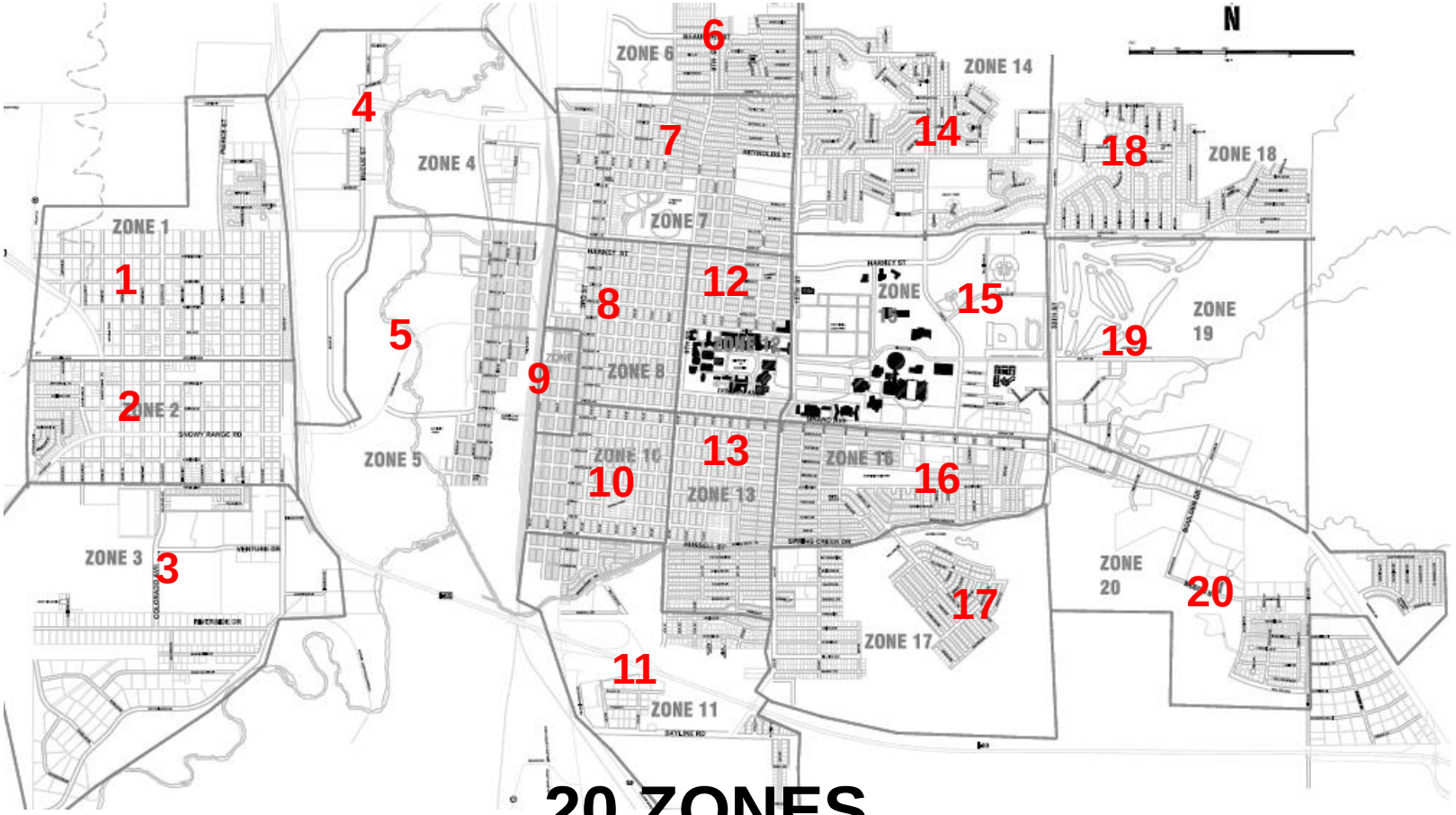
LARAMIE INVESTMENT VALUE

111+ miles of Streets = 25.2 million square feet of pavement

Value at $4-5 per sf

= $101-126 million

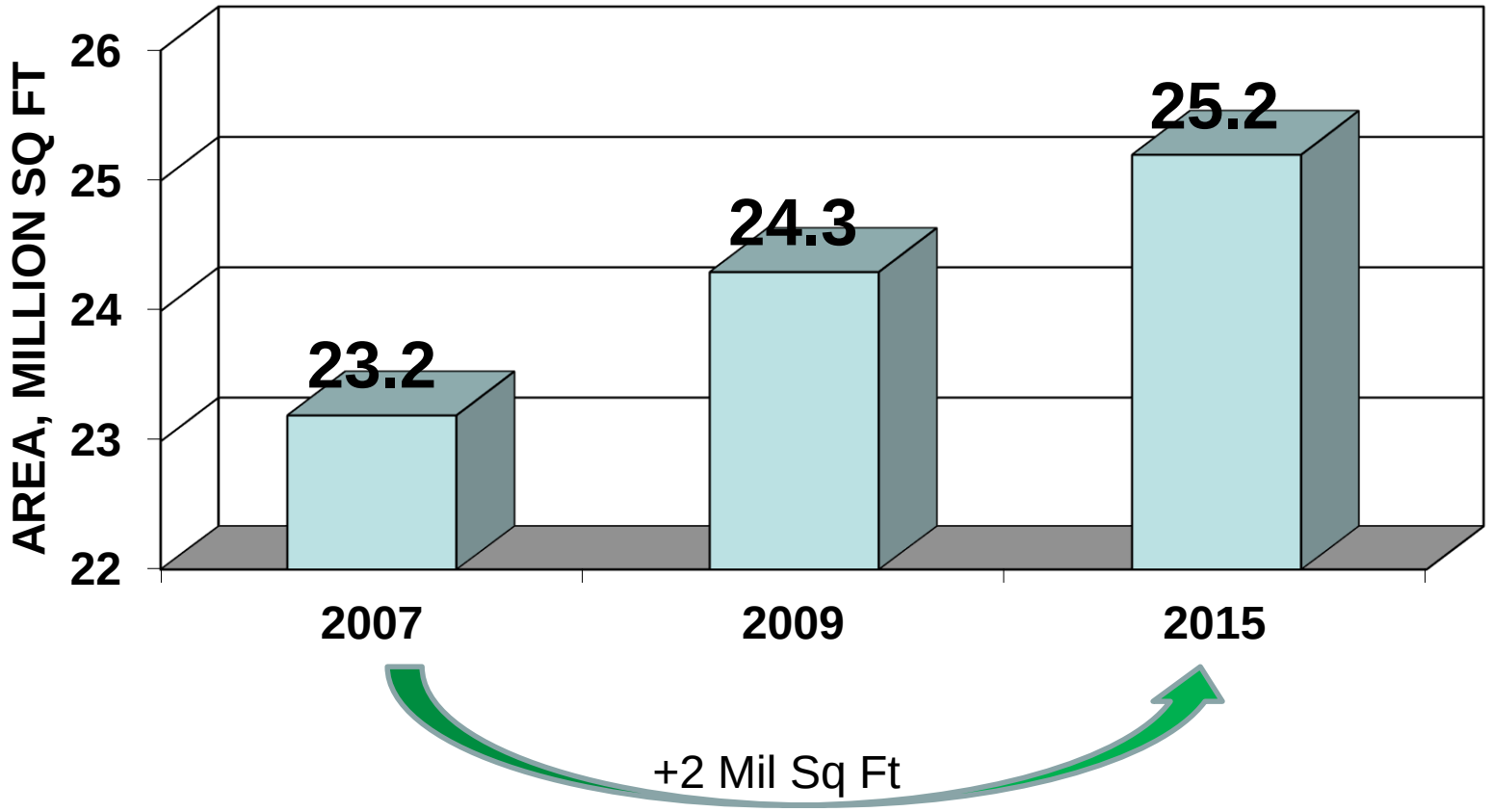
NETWORK



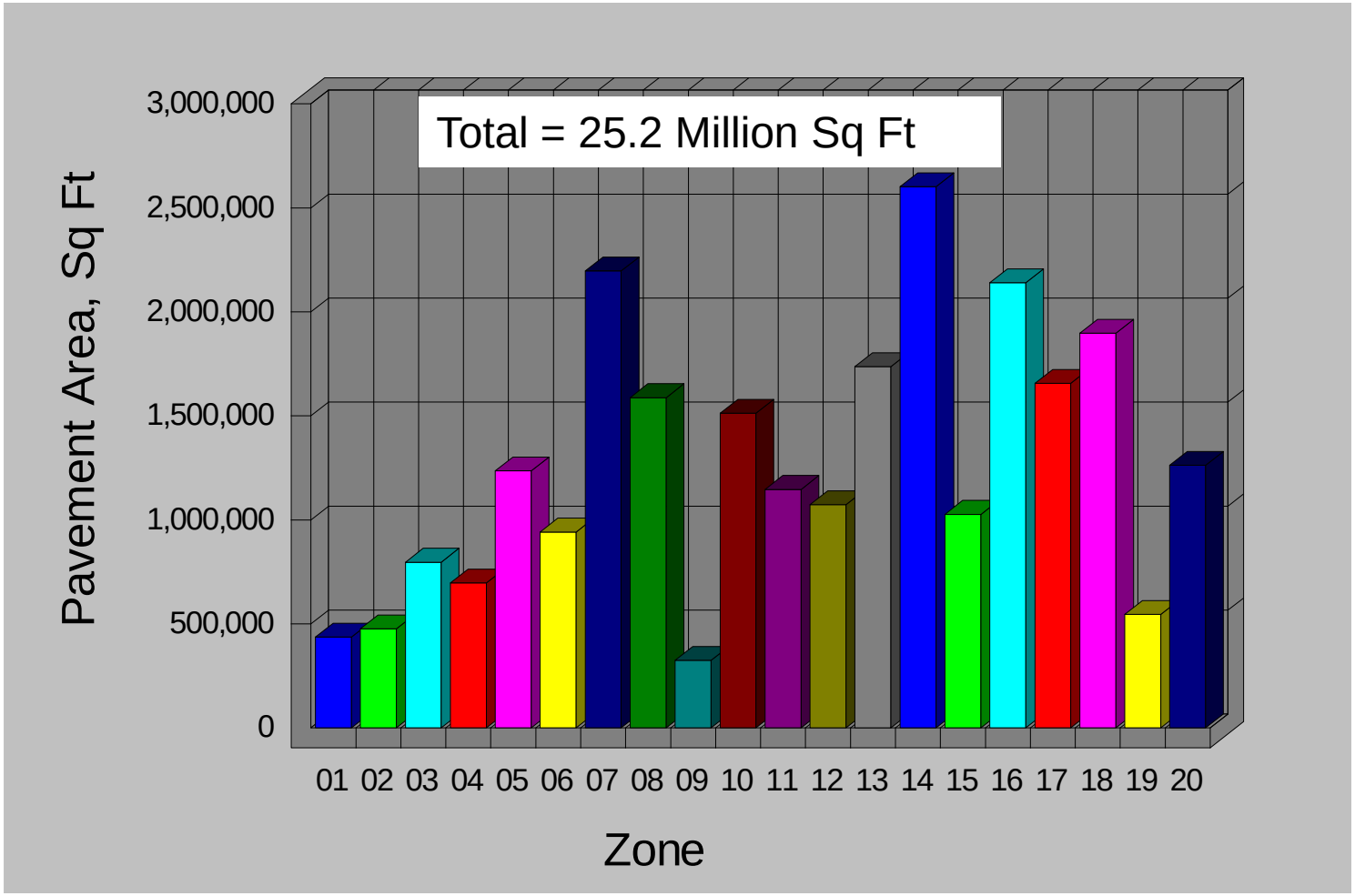
20 ZONES

1550 SECTIONS

PAVEMENT AREA



PAVEMENT AREA BY ZONE



INSPECTIONS

- **Block by Block**
- **Inspect Sample Units**
- **Inspect ½ Streets Annually**

20 ASPHALT DISTRESSES AND 3 SEVERITIES

ALLIGATOR CRACKING – BEECH ST

EDGE CRACKING – RENSHAW ST

DEPRESSION

BLOCK CRA CKING – MITCHELL ST

RUTTING

PAVING JOINT CRACKING

19 CONCRETE DISTRESSES AND 3 SEVERITIES

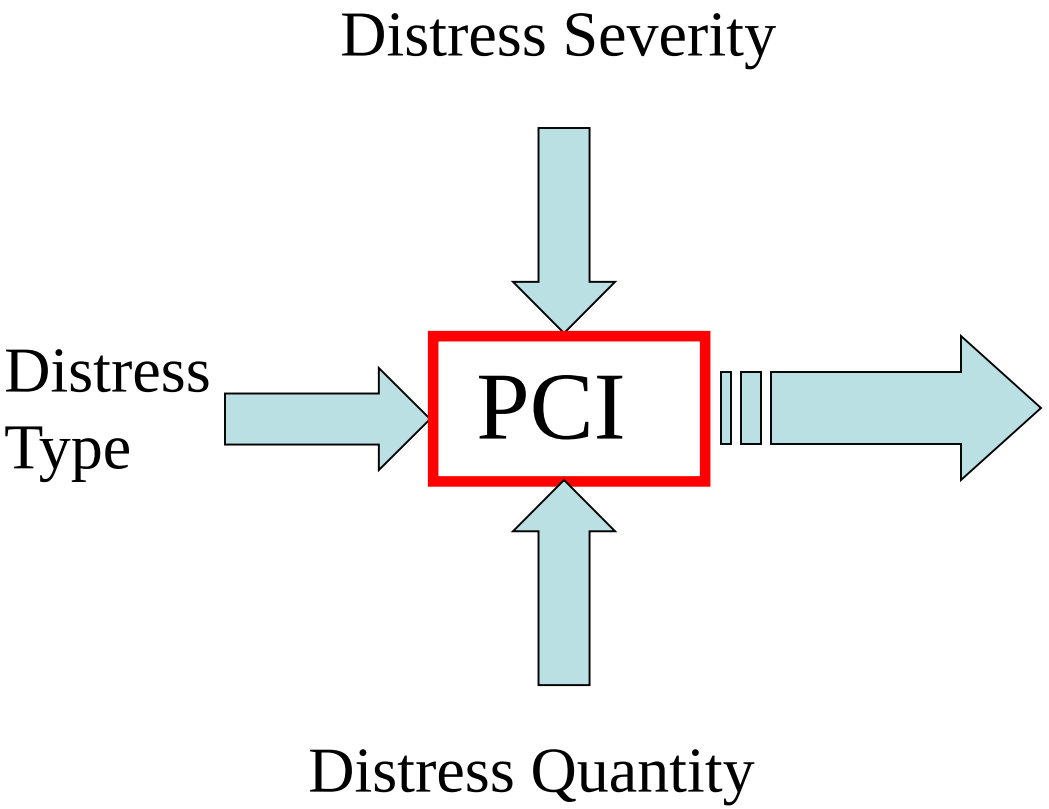
CORNER BREAK– MCCUE ST

DIVIDED SLAB– EXAMPLE

JOINT SPALLING– MCCUE ST

CORNER SPALL – EXAMPLE

PAVEMENT CONDITION INDEX (PCI)



CONDITION	PCI
Very Good	85 to 100
Above Average	70 to 85
Average	55 to 70
Below Average	40 to 55
Poor	0 to 40

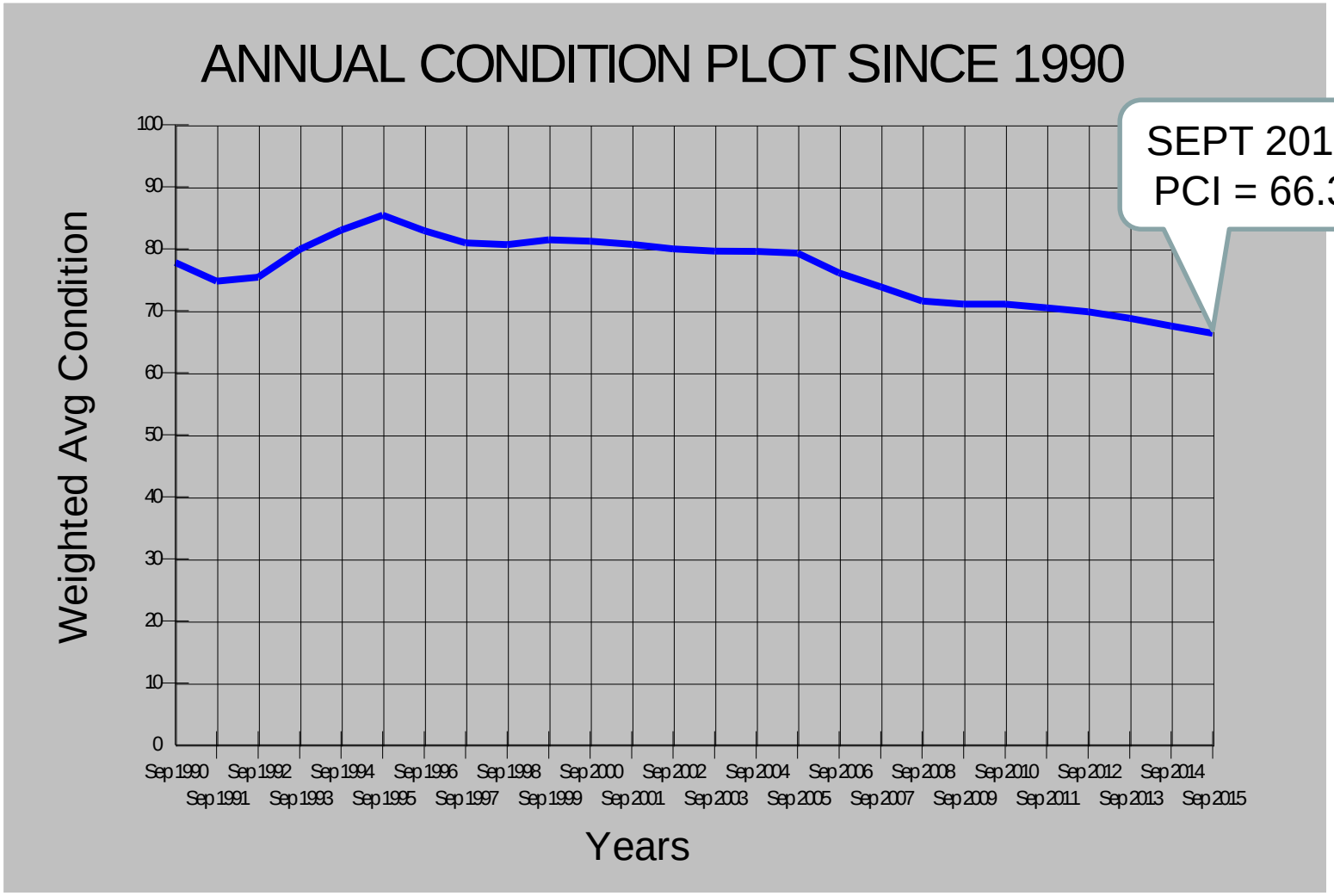
PAVEMENT CONDITION

70.5 (DEC 2009)

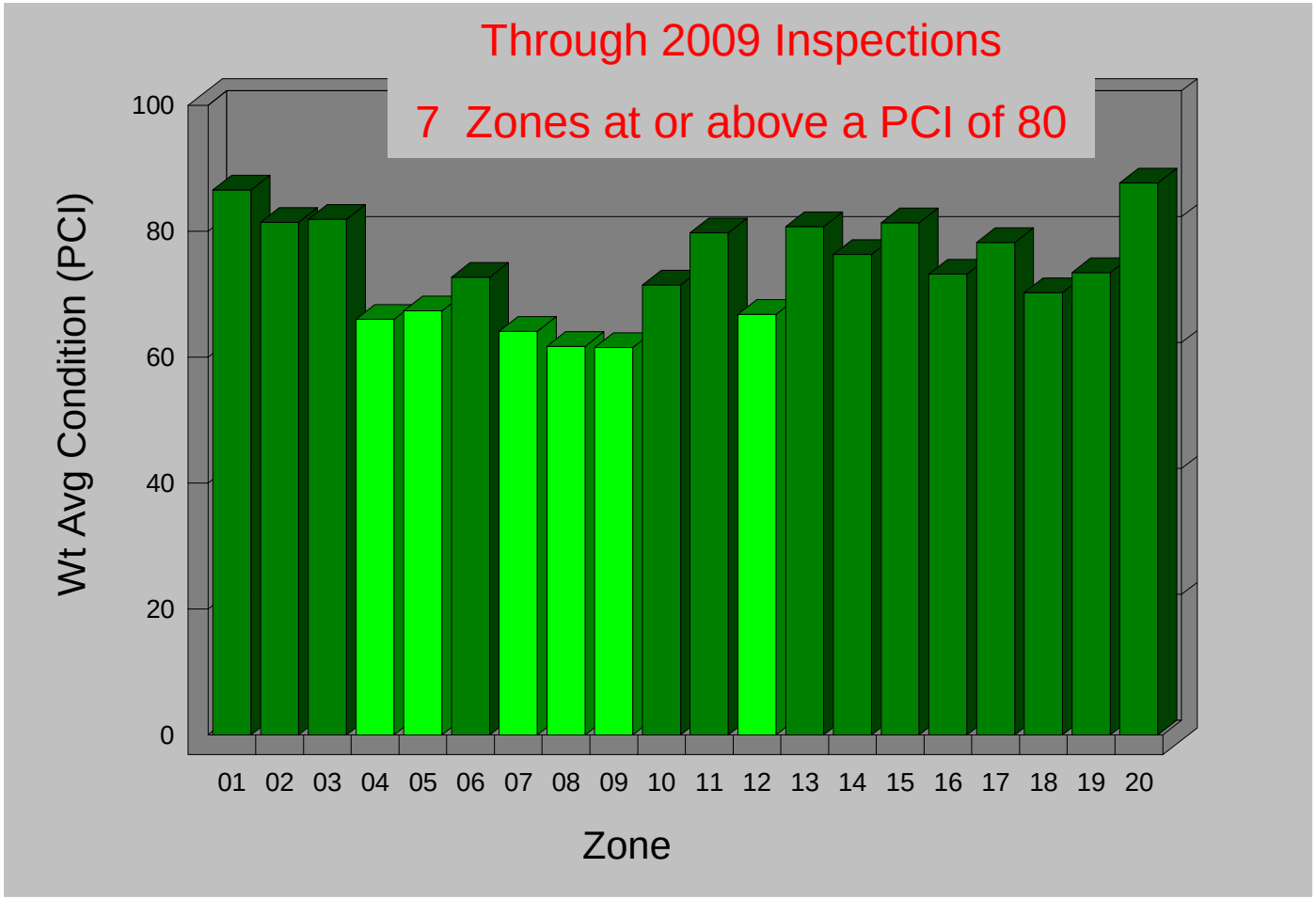
66.3 (SEP 2015)

CATEGORY	PCI RANGE
Very Good	85 to 100
Above Average	70 to 85
Average	55 to 70
Below Average	40 to 55
Poor	0 to 40

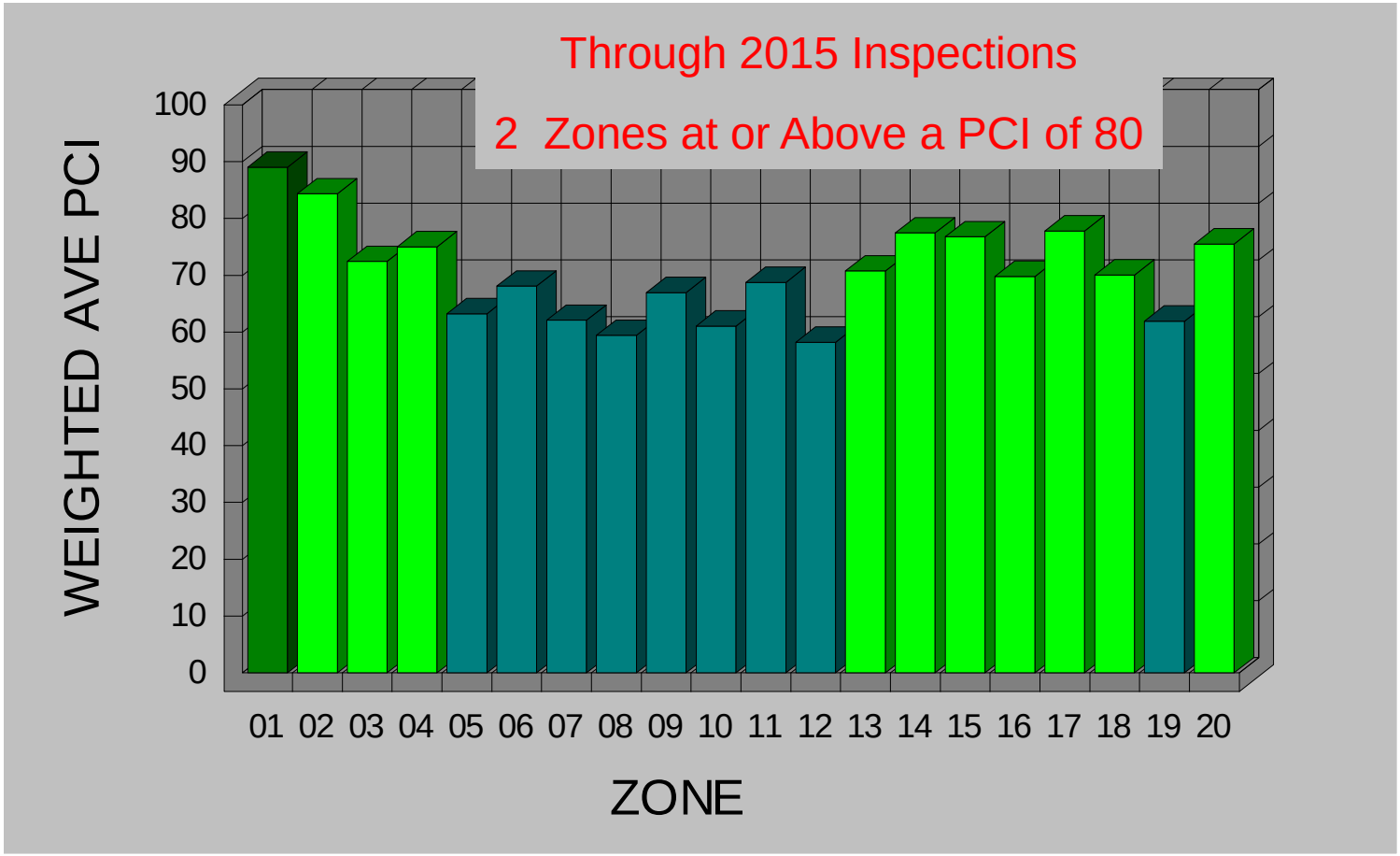
CONDITION PLOT



CONDITION BY ZONE



CONDITION BY ZONE



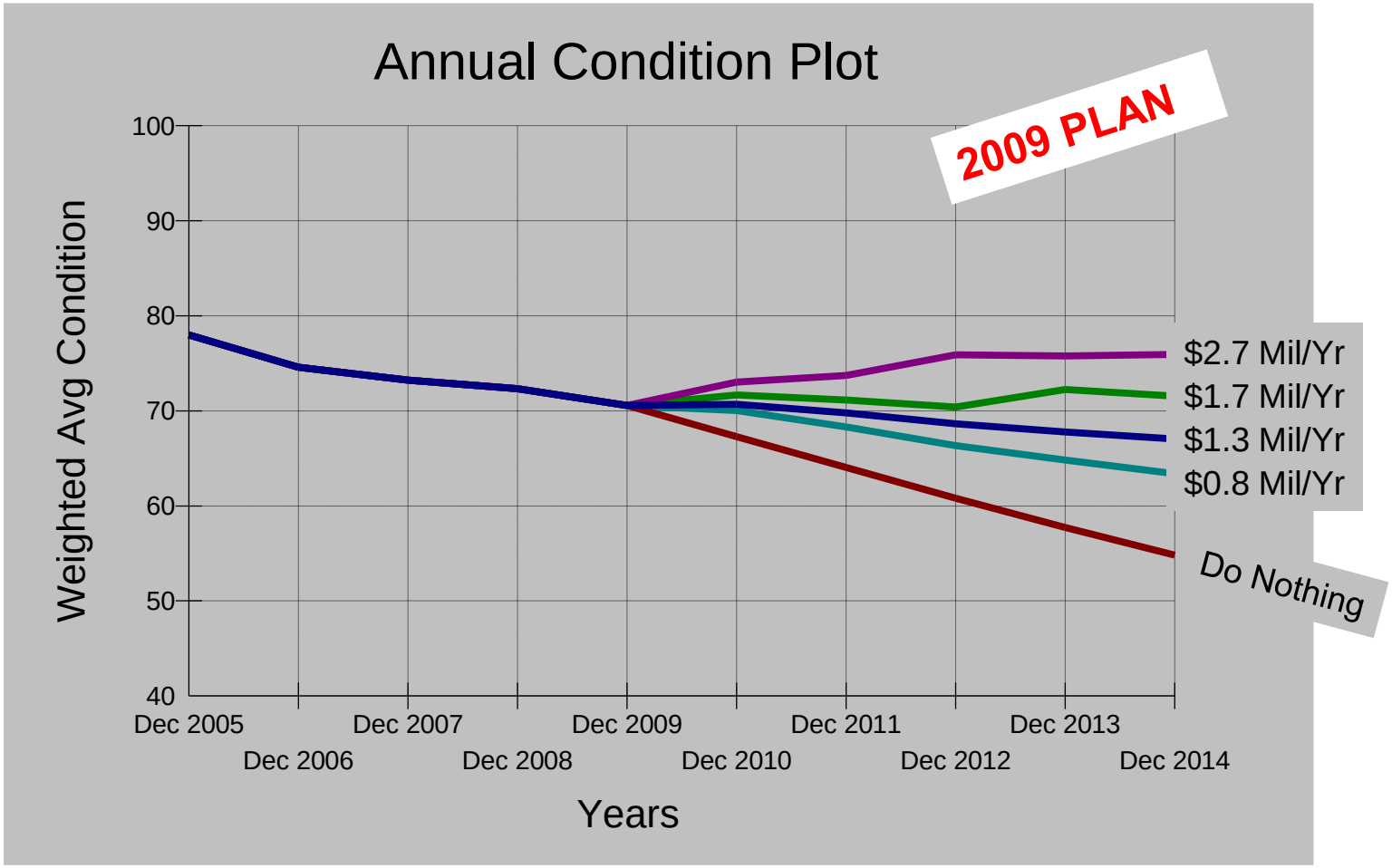
CONDITION TREND

Date	% POOR	% BELOW AVE	% AVERAGE	% ABOVE AVE	% VERY GOOD
PCI Range	0 - 40	40 - 55	55 - 70	70 - 85	85 - 100
2005	3	6	16	28	48
2006	3	9	20	32	36
2007	5	12	24	26	34
2008	5	11	26	27	30
2009	5	15	26	24	30
2010	5	16	25	24	30
2011	5	15	28	25	28
2012	6	13	30	23	28
2013	5	15	29	26	25
2014	8	16	29	20	26
2015	12	16	28	17	27

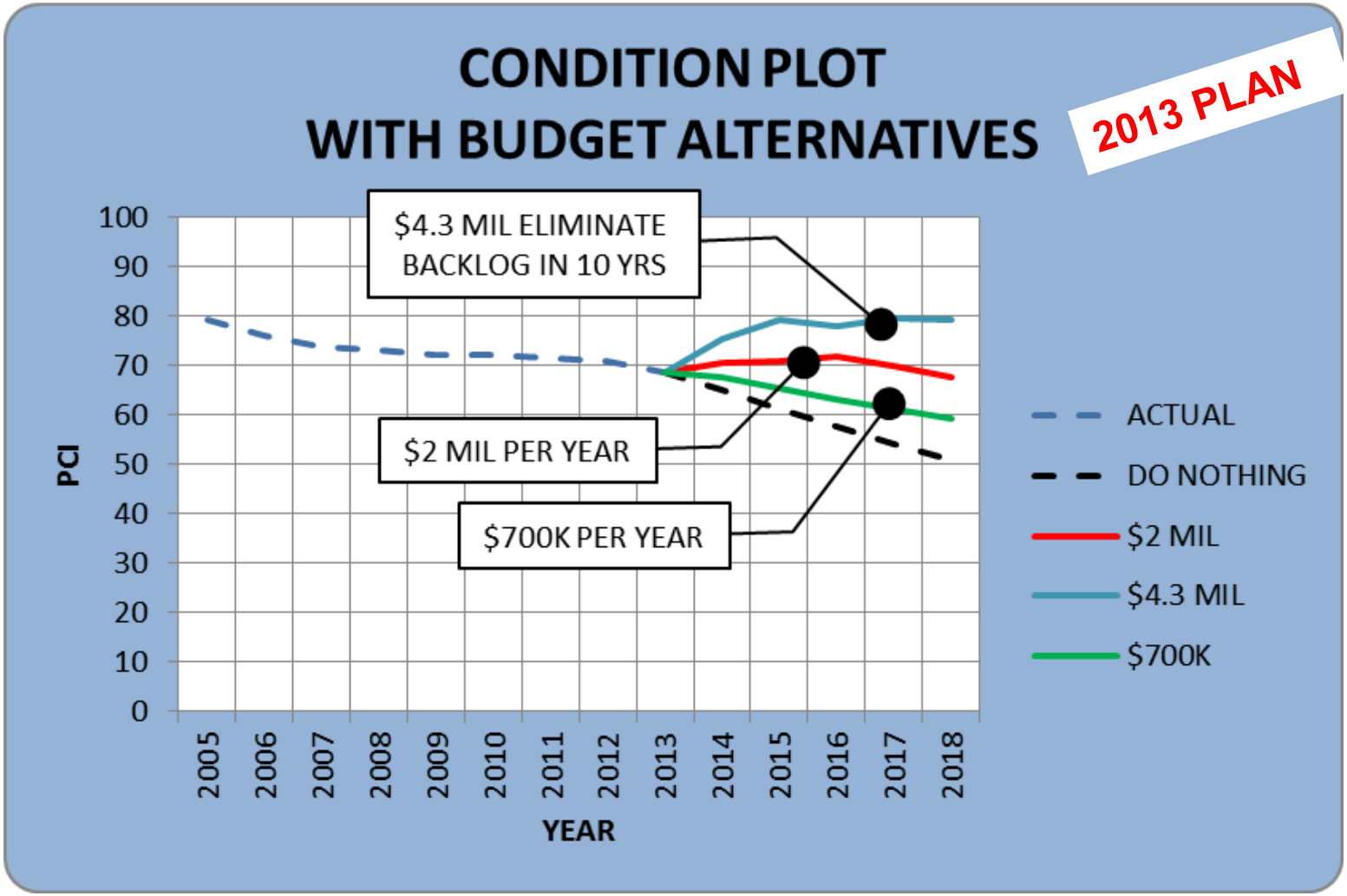
BUDGET OPTIONS

- Limited Budget
- Unlimited Budget
- Stabilize Condition
- Eliminate Backlog
- Variable Budget

COMPARE BUDGETS



COMPARE BUDGETS



FUNDING ALLOCATION

- **50-80% OF THE BUDGET IS SPENT ON PAVEMENT IN GOOD CONDITION**

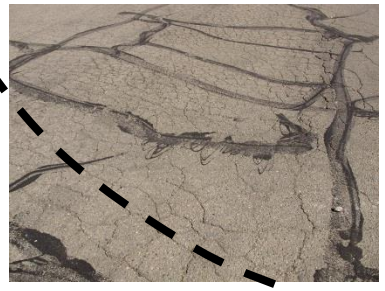
VERY GOOD

GOOD

FAIR

POOR

- **20-50% OF THE BUDGET IS SPENT ON PAVEMENTS IN POOR CONDITION**



SUMMARY-STREETS

Set Budget vs. Condition

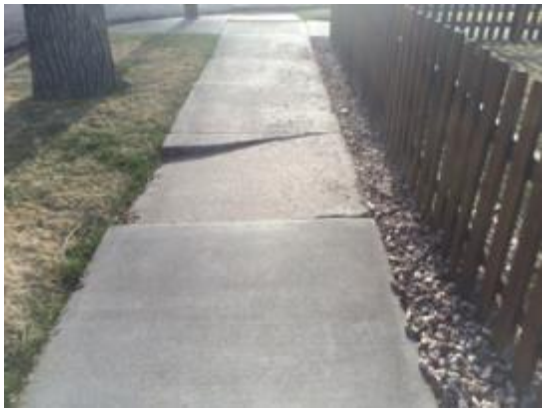
Continue Regular Inspections

Maintenance Strategies

Implementation

CONCRETE CONDITION

CURB/GUTTER



SIDEWALK

HANDICAP RAMP

CROSS PAN

SIDEWALK RATINGS

PRIORITY #1

PRIORITY #2

PRIORITY #3

GOOD SIDEWALK
AND CURB/GUTTER

CONCRETE SUMMARY OVERALL

OVERALL			#1 Priority for Replacement		#2 Priority for Replacement		#3 Priority for Replacement		Total 1+2+3	
	Unit	Total Quantity	Quantity	Per Cent of Total	Quantity	Per Cent of Total	Quantity	Per Cent of Total	Quantity	Per Cent of Total
Curb & Gutter	Lin Ft	466,203	23,187	5.0%	45,965	9.9%	71,350	15.3%	140,502	30.1%
Sidewalk	Sq Ft	2,139,457	112,449	5.3%	190,268	8.9%	195,403	9.1%	498,119	23.3%
Concrete Pans	Sq Ft	NA	4,770		4,380		15,520		24,670	

CONCRETE SUMMARY
ZONE 12

ZONE 12			#1 Priority for Replacement		#2 Priority for Replacement		#3 Priority for Replacement		Total 1+2+3	
	Unit	Total Quantity	Quantity	Per Cent of Total	Quantity	Per Cent of Total	Quantity	Per Cent of Total	Quantity	Per Cent of Total
Curb & Gutter	Lin Ft	35,436	3,640	10.3%	3,861	10.9%	5,699	16.1%	13,200	37.3%
Sidewalk	Sq Ft	171,053	13,746	8.0%	18,550	10.8%	19,767	11.6%	52,063	30.4%
Concrete Pans	Sq Ft	NA	480		270		240		990	

ASPHALT HIGHER THAN CURB

- 48% of Streets Inspected in 2015 Have Asphalt Higher than the Gutter

SUMMARY-CONCRETE

THANK YOU

Ted A. Borstad, P.E.

Borstad Consulting Services LLC
4730 S. College Ave, Suite 101
Fort Collins, CO 80525

970-227-6480
TBorstad@aol.com

CITY OF LARAMIE COUNCIL WORK SESSION April 26, 2016

Agenda Item: Presentation

Title: Laramie Public Art Coalition Update

Recommended Council MOTION:
N/A

Administrative or Policy Goal:

Objective: Community Enhancement-Beautification & Planning

Background:

In June of 2015, the Community Arts Plan Advisory Committee presented the Public Art Plan to the Laramie City Council. Since that time, the Committee has continued meeting to begin the implementation of the Plan and to form an organization that will carry the work forward.

The Laramie Public Art Coalition is here this evening to present the status of the work thus far.

Legal/Statutory Authority:

N/A

BUDGET/FISCAL INFORMATION:

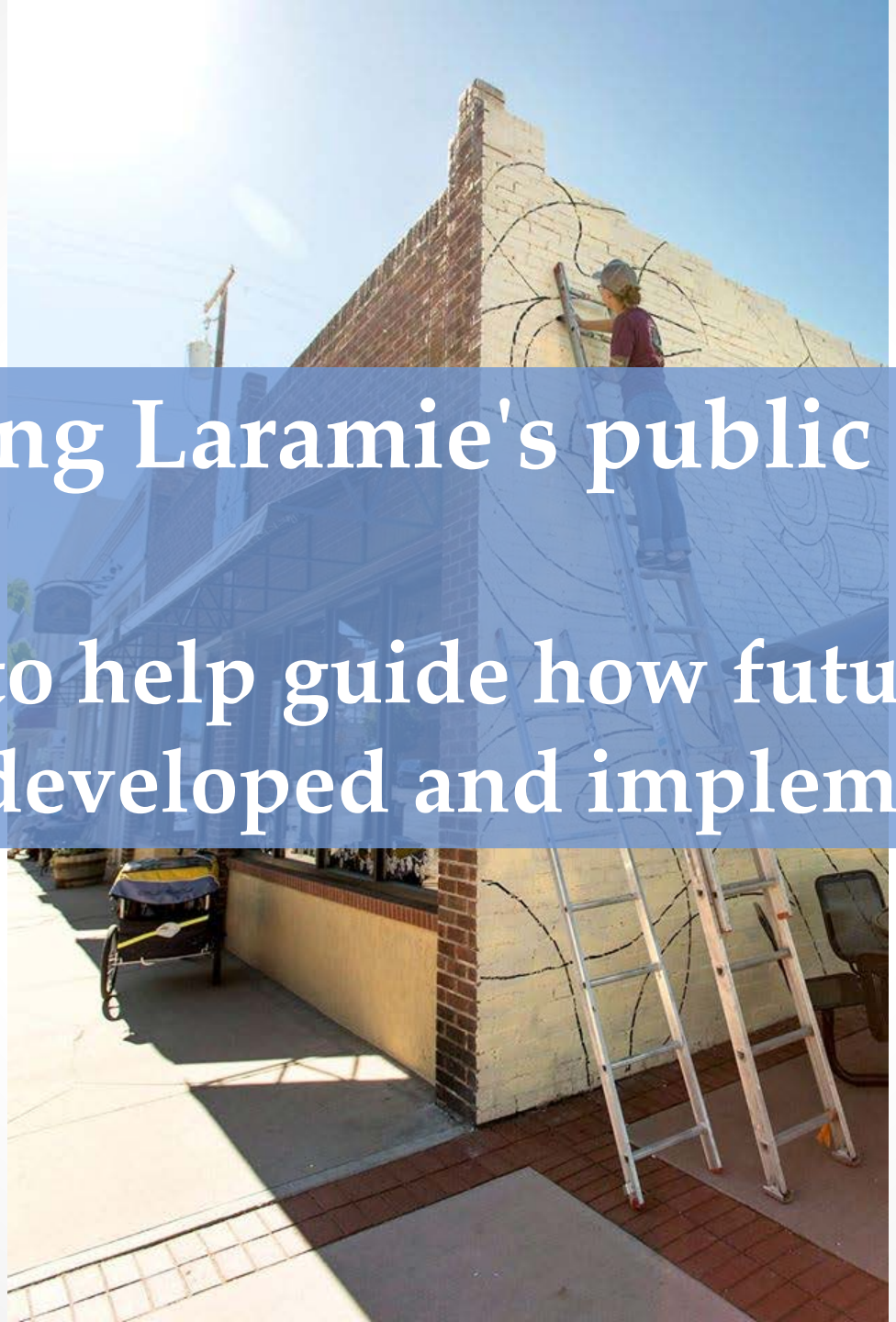
N/A

Responsible Staff:

Jodi Guerin, Recreation Manager

Attachments:
Presentation

Laramie Public Art Coalition



Presenting Laramie's public art plan!

A tool to help guide how future public art is developed and implemented.

What the Plan is

- A vision with goals for public art in the community
- Examples of different types of public art projects
- Suggestions for public art locations
- Procedures for artist selection, design development, design review & project management
- Strategies for funding public art
- Ideas for educational programs
- Sample documents and policies

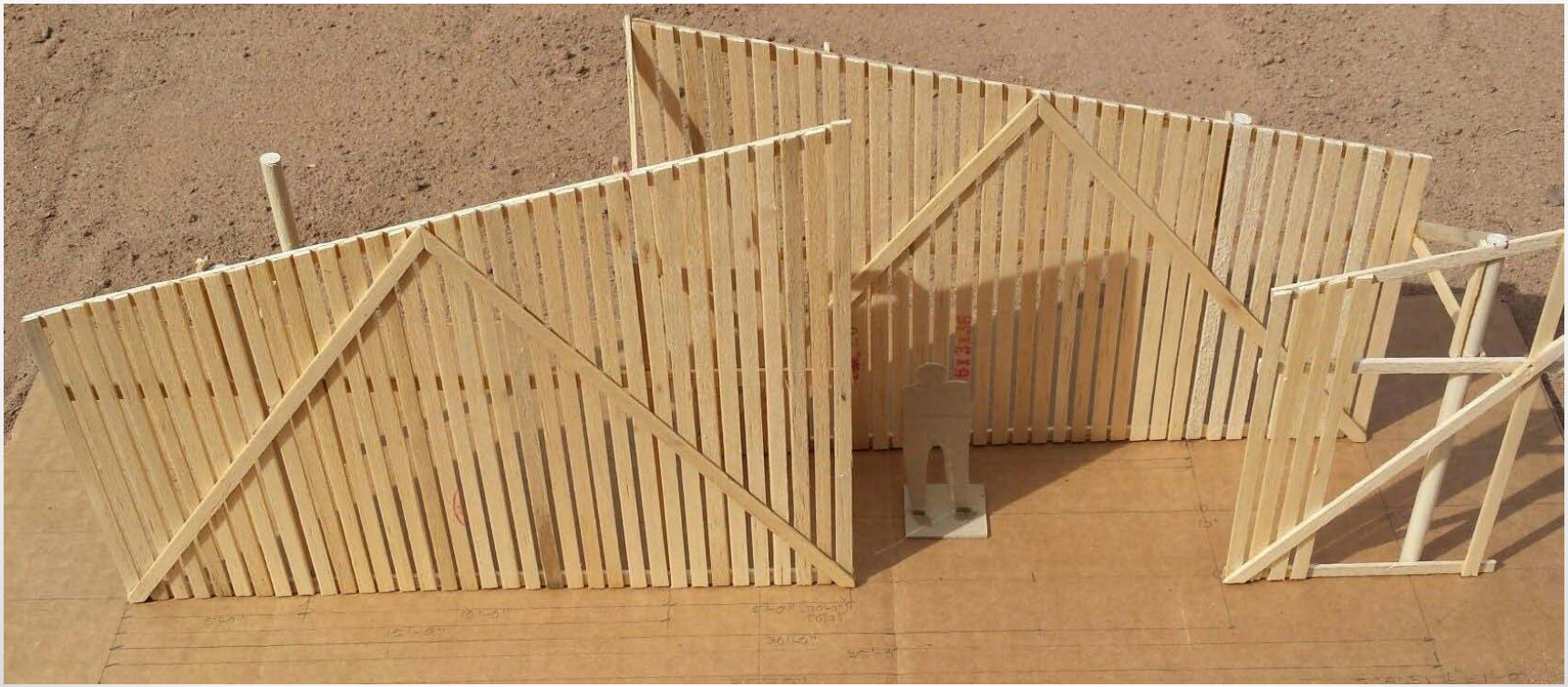
LPAC is WORKING ON

- Bylaws
- Policies and Procedures
- Advisory Committee Development
- Artist Roster
- Securing Funds
- Crowdfunding Training
- Establishing & Expanding Partnerships
- Public Listening & Brainstorming Sessions—5x5 workshop
- Support for Local Art Events
- Public Art Inventory

CURRENT PROJECTS

The Laramie Beautification Committee, through a call process established by the Laramie Art Plan, commissioned Laramie artist Stan Dolega to build a bold, 200' long, artwork in the northwest quadrant of the I-80 and 3rd Street interchange. The project is located on private property and was 95% funded by private gifts.

PENUMBRA



LOVE MOTEL FOR INSECTS

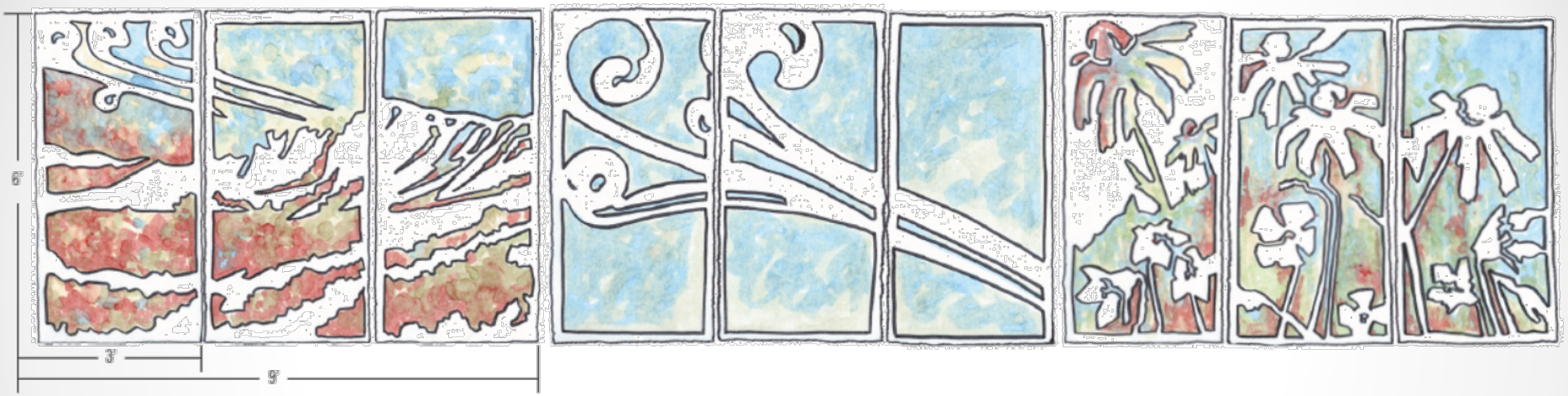
LARAMIE MURAL PROJECT

Public Art Transforming Third Street

Our vision to use arts and culture to enhance the economic and social vitality of the Third Street corridor as it runs through downtown Laramie.

https://youtu.be/UFzYY-tmwIk

Cirrus Sky – integrated art



• Mountain Range Triptych

The Medicine Bow Mountains are a mountain range in the Rocky Mountains that extend for 100-mile (160 km) from northern Colorado into southern Wyoming. The northern extent of this range is the sub-range the Snowy Range.

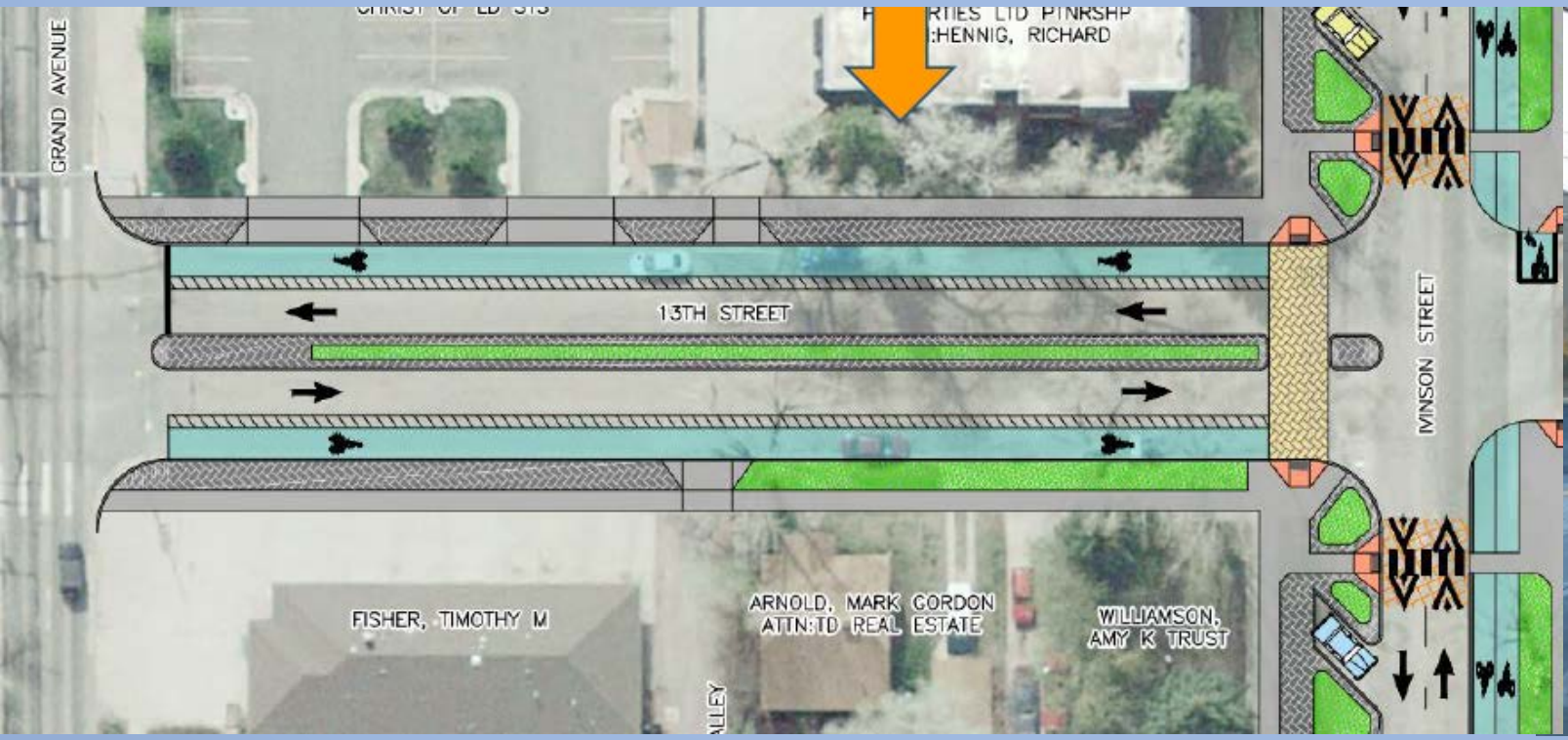
• Cirrus Cloud Triptych

The most common variation of high level clouds are cirrus clouds. Cirrus are thin, whispy clouds composed of ice crystals that originate from the freezing of supercooled water droplets and exist where temperatures are below -38 degrees Celsius. Cirrus generally occur in fair weather and move from west to east, pointing in the direction of the prevailing winds at their elevation.

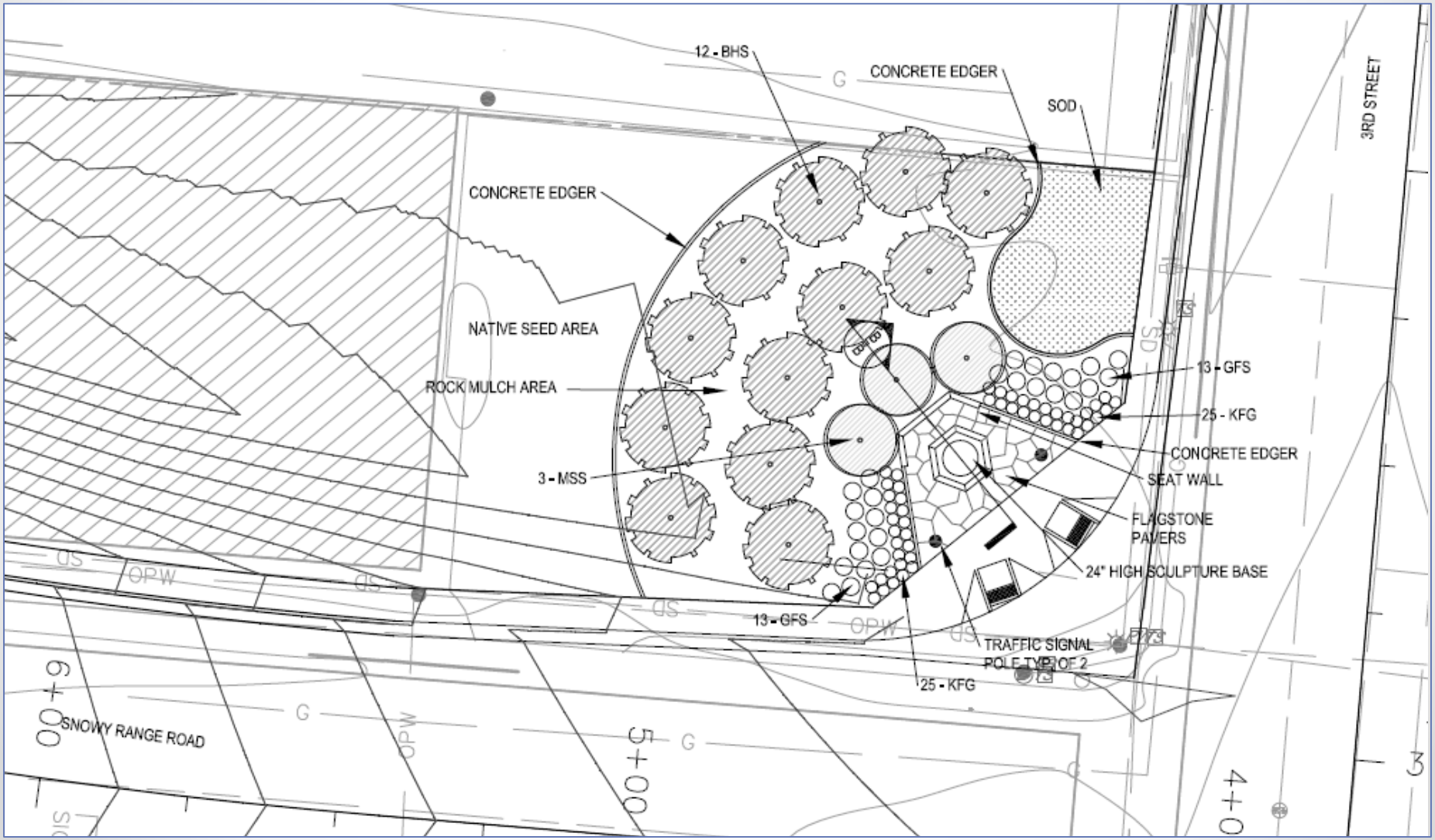
• Native Vegetation Triptych

Referencing colorful flowers that may bee seen hiking in southern Wyoming and that may also be used in the reseeding along the Cirrus Sky Tech Park Trail: BLANKET FLOWER, Gaillardia × grandi ora Height: 12-18" Width: 12-18", LEWIS' FLAX Linum lewisii Pursh Height 12-18" Width ~ 18" and HAREBELLS Campanula rotundifolia L. Height: 11-14" Width: 8-12".

IVINSON AVE. – integrated art



HARNEY – integrated art



FUNDRAISING

- ArtPlace America grant
- Wyoming Art Council grant
- Wyoming Cultural Trust Fund
- Laramie Beautification
- Pete Lien and Associates
- Guthrie Family Foundation
- Public Donations
- The Local Crowd
- Online Donations through WYCF

The Future of Public Art