BEFORE THE BOARD OF COMMISSIONERS
OF BAKER COUNTY, OREGON

AN ORDINANCE AMENDING GOAL 12 OF THE BAKER COUNTY COMPREHENSIVE PLAN TO RECOGNIZE THE NORTHERN BAKER TRANSPORTATION IMPROVEMENT PLAN (NBTIP) & INCORPORATING THE NBTIP AS A REFINEMENT TO THE BAKER COUNTY TRANSPORTATION SYSTEM PLAN	))))))	**ORDINANCE NO. 2024-02 AMENDING ORDINANCES 84-1 AND 2005-04**

WHEREAS, Baker County desires to adopt the Northern Baker Transportation Improvement Plan (NBTIP) as a refinement to the Baker County Transportation System Plan, as well as amendments to the findings and policies of Goal 12 of the Baker County Comprehensive Plan in order to recognize the Northern Baker Transportation Improvement Plan (NBTIP); and

WHEREAS, Baker County has provided notice to the public of these changes, consistent with the requirements of the Zoning Ordinance and state law; and

WHEREAS, the Baker County Planning Commission conducted a public hearing on February 8, 2022, where they received public testimony and recommended edits to the draft NBTIP. The Planning Commission recommends the Board of Commissioners approve the Comprehensive Plan amendments as presented and adopt the Northern Baker Transportation Improvement Plan as amended; and

WHEREAS, the Board of Commissioners held public hearings on February 16 and April 6, 2022, as well as September 18, October 2, and October 16, 2024; and

NOW THEREFORE, THE BAKER COUNTY BOARD OF COMMISSIONERS ORDAINS AS FOLLOWS:

Section 1: Goal 12 of the Baker County Comprehensive Plan will be adopted in full as shown in Exhibit A attached hereto. A record of edits is on file in the Planning Department.

Section 2: The Northern Baker Transportation Improvement Plan is hereby adopted as a refinement to the Transportation System Plan as shown in Exhibit B attached hereto.

Read for the first time this 2nd day of October, 2024.

Read for the second time by title only this 16th day of October 2024.

Adopted by the Baker County Board of Commissioners this 16th day of October, 2024. This ordinance shall take effect 90 days following adoption, on the 16th day of January, 2025.

BAKER COUNTY BOARD OF COMMISSIONERS:

_____

Shane Alderson, Commission Chair

_____

Christina Witham, Commissioner

_____

Bruce Nichols, Commissioner

Attest

_____

Heidi Martin, Executive Assistant
Baker County Board of Commissioners

EXHIBIT A - GOAL 12 AMENDMENTS TO THE BAKER COUNTY COMPREHENSIVE PLAN (ADDITIONS ARE SECTION II(8) AND III(3)

GOAL XII ELEMENT, TRANSPORTATION

TRANSPORTATION GOAL: To provide and encourage a safe, convenient and economic transportation system.

...

II. GOAL XII TRANSPORTATION FINDINGS

The county governing body finds that:

1. Roads and Highways: The principal primary and secondary roads and highways are indicated on the "Road Index Map, Baker County Oregon 1979" as prepared by the Oregon State Highway Division in cooperation with the U.S. Department of Transportation, Federal Highway Administration.
2. The Oregon Department of Transportation has prepared and published a "County Road Inventory Description Record For Baker County, 6/05/80". Such inventory is used in conjunction with the Road Index Map.
3. The City and County of Baker have adopted an "Airport Master Plan, Baker Municipal Airport, December 1978". Such airport is considered to be an economic alternative mode of transportation in the county. Improvements and expansion of the airport are underway as a cooperative function of local, state and federal government.

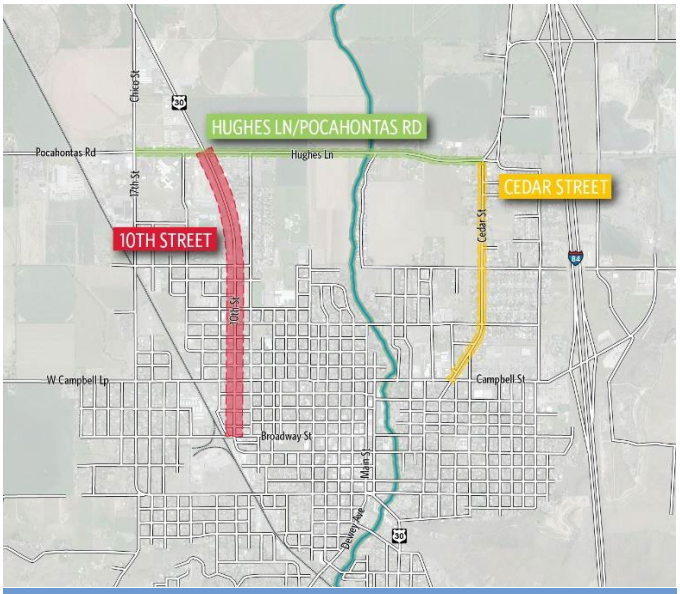
   The County has adopted an Airport Development Zone that limits construction and uses within the area. Furthermore, an Airport Overlay Zone has been adopted to limit uses in approach areas of the airport. Height limitations and restrictions on uses producing interference to aircraft were included in the original Airport Zoning Ordinance of 1975 and whose restrictions are still in effect. These planning documents for the Baker Airport have been reviewed and approved by the Aeronautics Division of the State Department of Transportation. See following page.
4. Mass transit, interstate rail, and bus passenger and freight services in and through the county are considered to be economic alternative modes of transportation.
5. Transportation pipelines existing in the county (natural gas and petroleum distillates) are considered to be economic alternative modes of transportation.
6. The private automobile will continue to be the most practical mode of intra-county transportation in the forseeable future.
7. Bicycle and pedestrian modes are not practical year around methods of transportation outside the boundaries of the cities.
8. The Northern Baker Transportation Improvement Plan identifies improvements along 10th Street, Cedar Street, and Hughes Lane/Pocahontas Road to enhance multi-modal mobility and safety. Identified improvements in unincorporated County areas will require coordination between Baker City and the County before final design and construction.

III. GOAL XII TRANSPORTATION POLICIES

The County Governing Body declares that:

1. Seldom are transportation improvements under the exclusive direction of county government. Therefore, some of the following policies are adopted by the County as recommendations to other public agencies.
    a. The Secretary of Agriculture, pursuant to Section 8(c) of Public Law 94-199, December 31, 1975, should provide improved roads from Baker County to scenic views of and from the Western rim of Hells Canyon. It should be noted that the Hells Canyon National Recreation Area Comprehensive Management Plan is under appeal to the Secretary of Agriculture. The USFS preferred alternative to "C" includes access to P.O. Saddle and beyond to Lookout Mountain. Beyond that to Saddle Creek is non-vehicular access until access begins at Sour Apple Flat and on to Lord Flat. In short, the rim of the canyon does have improved access to and along part of the rim but not its entire length.
    b. Burnt River Canyon Road should be included in the Oregon State Highway System. Such road should provide improved access from Highway 245 on the southern slope of Dooley Mountain to the Interstate Highway at Durkee. It is noted that no plans exist within the State Department of Transportation to include this road in the state system as it does not meet their standards.
    c. Lands surrounding the airport shall be protected from development that is incompatible with the airport.
    d. Serious consideration shall be given to the formation of a broad based Airport Authority or Port District to own and operate the Baker Municipal Airport.
    e. U.S. Forest Service should be encouraged to complete the North Pine Road to an improvement standard similar to the connecting forest service road in Wallowa County.
    f. Local terminals for industrial and commercial consumption of pipeline products should be made available when needed to support economic development of the county.
    g. Interstate rail and bus passenger and freight service should continue to be available in the county.
    h. Local mass transit (private) passenger services shall be expanded as the need and economic practicality becomes apparent.
    i. Public subsidized bus transportation shall be continued for the transportation disadvantaged as the need is demonstrated and budgetary priorities will allow.
    j. The rural nature of Baker County exerts very limited demand for either foot or bicycle paths. To the degree that such demand exists, Baker County will cooperate with the State Department of Transportation in supporting these features.
    k. Baker County supports the attempt to reinstate a regularly scheduled commuter airline serving Baker County residents and businesses.
2. It shall be County policy to plan, construct and maintain county roads to acceptable standards having first considered safety, use, and economics.
3. The Northern Baker Transportation Improvement Plan has been adopted in 2022 as a refinement plan to the County's Transportation System Plan. The Northern Baker Transportation Improvement Plan provides policies and identifies improvements for portions of 10th Street, Cedar Street, Hughes Lane, and Pocahontas Road.

Northern Baker
TRANSPORTATION IMPROVEMENT PLAN



Transportation Improvement Plan (FINAL)

Northern Baker Transportation Improvement Plan

Baker City, Oregon

August 5, 2024

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Acronyms and Abbreviations

ACS	Americans Community Survey
ADA	Americans with Disabilities Act
ADT	average day traffic
APM	Analysis Procedures Manual
BLTS	Bicycle Level of Traffic Stress
CMF	Crash Modification Factor
GC	General Commercial
GI	General Industrial
HAWK	High-Intensity Activated Crosswalk
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HDM	Highway Design Manual
IAMP	Interchange Area Management Plan
LOS	Level-of-Service
LTS	Level of Traffic Stress
mph	Mile Per Hour
MUTCD	Manual on Uniform Traffic Control Devices
NBTIP	Northern Baker Transportation Improvement Plan
NEO Transit	Northeast Oregon Public Transit
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
ORS	Oregon Revised Statue
OTC	Oregon Transportation Commission
PLTS	Pedestrian Level of Traffic Stress
PMT	Project Management Team
R-HD	High Density Residential
R-MD	Medium Density Residential
ROW	Right-of-Way
RRFB	Rectangular Rapid Flashing Beacon
SUP	Shared-Use Path
TAC	Technical Advisory Committee
TSP	Transportation System Plan
US30	U.S. Highway 30
v/c	volume-to-capacity

1 Executive Summary

The Northern Baker Transportation Improvement Plan (NBTIP) provides design concepts for improvements to the three project corridors – 10th Street, Cedar Street, and Hughes Lane/Pocahontas Road. The preferred design concepts are the result of a year-long planning process with multiple iterations of concepts that included extensive stakeholder and public outreach and participation to develop concepts that meet the transportation needs for a wide range of modes, from pedestrians to agricultural equipment, and respect the wishes and desires of the community. The preferred design concepts include proposed improvements to key intersections, enhanced street crossings, facilities for people walking and bicycling along the project corridors, and suggested connections to and enhancements of the larger network of streets and pathways to allow for safe and comfortable travel by all modes. These preferred design concepts provide the City with a template for future projects to improve Baker City's circulation network for all modes.

1.1 Purpose

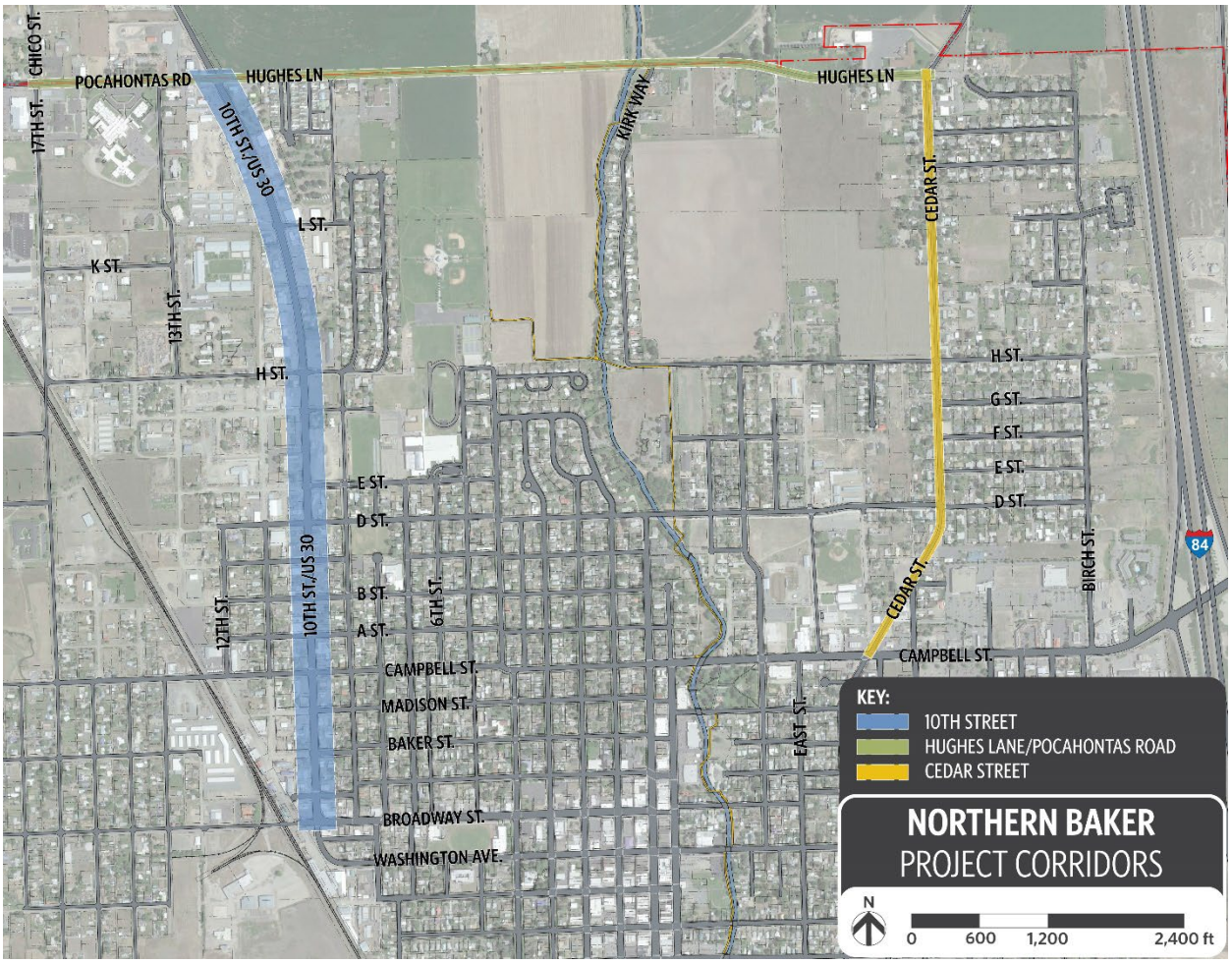
The project developed a vision to revitalize 10th Street (US30) and to improve the walking and bicycling environment on Cedar Street and Hughes Lane/Pocahontas Road. The NBTIP is intended to help address the existing issues along the project corridors, including:

- Lacking or substandard pedestrian facilities
- Lacking or substandard bicycle facilities
- Limited crossing opportunities of 10th Street for people walking and bicycling
- Untapped development potential along 10th Street due to vacant or underdeveloped parcels along the street
- Challenging corridor aesthetics, dominated by automobile-serving facilities (roadways, driveways, parking) and auto-oriented businesses with associated signage

1.2 Study Area

The project area includes approximately 1.3 miles of 10th Street from Broadway Street to Hughes Lane/Pocahontas Road, approximately 1.5 miles of Hughes Lane/Pocahontas Road from 17th Street to Cedar Street, and approximately one mile of Cedar Street from Hughes Lane to Campbell Street. The project's area is shown in Figure 1-1.

Figure 1-1. Project Area



1.3 Guiding Principles

Guiding principles for the study area were developed in collaboration with City staff, stakeholders, and residents. For more information on the vision and guiding principles for the project, refer to Appendix IV. For the entire study area, the guiding principles are:

- Property owners, stakeholders, and the public are meaningfully engaged.
- Public input is respected and considered.
- Safety is improved for people traveling on foot, on bicycle, and by bus, car, or truck.
- All modes of travel are accommodated to provide equitable transportation choices.
- Recommendations focus on context-sensitive/practical design solutions tailored to the existing constrained built environment and mindful of the anticipated mix of modes of travel.

- Recommendations remove barriers for people bicycling and walking, and support an active, healthy lifestyle.
- Recommendations foster environmental stewardship.
- Recommendations reflect the desired community identity.
- Recommendations for intersections meet traveler expectation, avoid unusual or off-set configurations.

In addition, due to the unique characteristics and contexts of the three project corridors, a set of guiding principles for each corridor was also developed.

1.3.1 10th Street Guiding Principles

- East-west connectivity is improved, especially for people walking and bicycling along routes accessing civic uses (e.g., high school, sports complex, hospital, YMCA).
- Business vitality of the corridor is protected and enhanced.
- Continued movement of heavy vehicles, including freight, snowplows, and agricultural equipment is protected.
- Recommendations are flexible enough to allow for future development and redevelopment.
- Corridor aesthetics are improved to provide a unique sense of place and foster vibrant commercial activity.

1.3.2 Cedar Street Guiding Principles

- East-west connectivity is improved to facilitate travel through and across intersections, especially for people walking and bicycling.
- Community livability along the corridor is protected and enhanced.
- Corridor aesthetics are improved to provide a unique sense of place and protect the residential character.
- Travel speeds for safe and secure multimodal travel is encouraged through appropriate design treatments.

1.3.3 Hughes Lane/Pocahontas Road Guiding Principles

- The northern terminus of Leo Adler Memorial Parkway is improved to express a sense of arrival and facilitate safe connectivity for people walking and bicycling.
- Corridor aesthetics are improved to protect and celebrate the rural edge along the corridor.
- Safe connection to and from the sports complex is provided to address ingress and egress from parking facilities to Hughes Lane.

- Recreational use of Powder River Bridge at Hughes Lane is taken into consideration.

1.4 Summary of Recommendations

The preferred design concepts include benefits that range from operational and safety improvements to access improvements and aesthetic enhancements. Proposed improvements include:

- A new intersection alignment at 10th Street and Hughes Lane/Pocahontas Road that features an enhanced bicycle and pedestrian crossing, improved sight distances, new turning lanes to improve traffic operations, and realigned approaches to slow vehicle traffic.
- New shared-use paths (SUP) along Cedar Street and Hughes Lane/Pocahontas Road.
- Enhanced intersections along 10th Street to make it easier for people biking and walking to cross.
- Sidewalk infill along 10th Street to complete the sidewalk network, improve Americans with Disability Act (ADA) access, and enhance the aesthetics of the corridor.
- Crossing improvements at key locations along Cedar Street to make it easier for people biking and walking to cross.

2 Planning and Engagement Background

2.1.1 Local Transportation System Plans

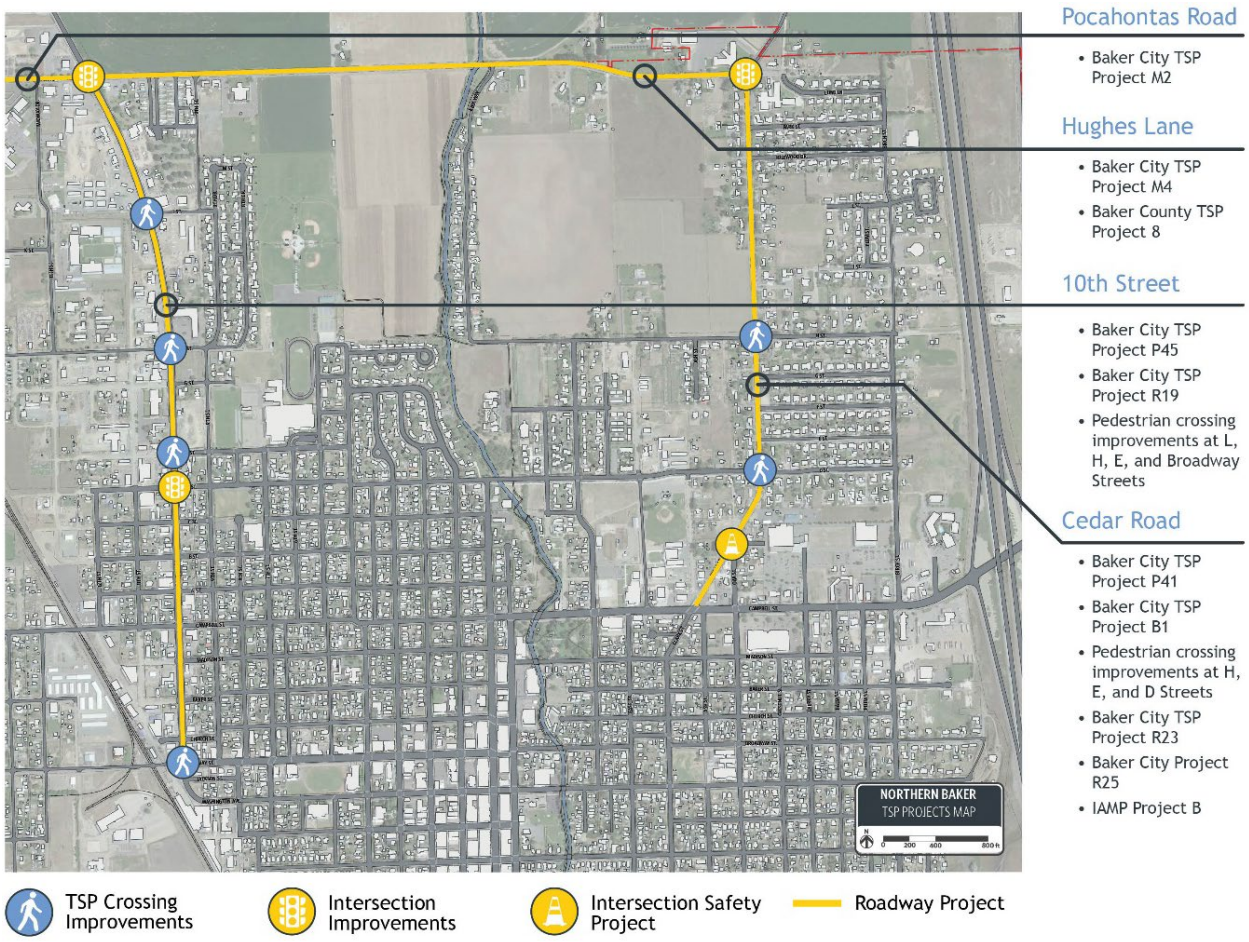
Both the Baker City and Baker County Transportation System Plans (TSP) endorse multiple projects on the three NBTIP corridors. The information in this section is based on the 2013 Baker City TSP, the 2005 Baker County TSP, and the 2016 Interchange Area Management Plan (IAMP). The projects listed below helped inform the design process and subsequent design concepts for this project. The information is summarized in Table 2-1 and in Figure 2-1.

Table 2-1. Previously Identified Projects

Location	Description	Source	Cost Estimate*
10th Street			
Hughes Lane/10th Street	Intersection Signalization	Baker County TSP, Project 8	$200,000
Intersection of L, H, E, and Broadway Streets	Intersection Pedestrian Crossing Improvements	Baker City TSP - Identified in figure 2-1	N/A
10th Street/D Street	Intersection Signalization	Baker City TSP, Project R19	$533,000
10th Street/C Street	Remove half signal	Baker City TSP, Project R19	
10th Street from Broadway to Hughes Lane	Pedestrian network improvement - Sidewalk infill	Baker City TSP, Project P45	$316,000
Hughes Lane/ Pocahontas Road			
17th Avenue from Indiana Avenue to Pocahontas Road	SUP	Baker City TSP, Project M4	$309,000
Hughes Lane/Pocahontas Road from Settlers Loop to Cedar Street	17th Avenue SUP including tie-in to Pocahontas SUP at the intersection with 17th Avenue	Baker City TSP, Project M2	$1,169,000
Cedar Street			
Hughes Lane/Cedar Street	Intersection Improvements: • Phase 1 - Eastbound right turn lane • Phase 2 - Southbound right turn lane • Phase 3 - All-way stop improvement • Phase 4 - Signalization	I-84 IAMP, Project B	• Phase 1 - $160,000 • Phase 2 - $200,000 • Phase 3 - $220,000 • Phase 4 - $300,000
Hughes Lane/Cedar Street	Endorsement of the IAMP intersection improvements above	Baker City TSP, Project R23	$4,723,000
Cedar Street from Campbell Street to Hughes Lane	Sidewalk infill and crossing improvements at H and D Streets	Baker City TSP, Project R23	$754,000
Cedar Street from Campbell Street to Hughes Lane	Bike lane - signing and striping	Baker City TSP, Project R23	$35,000
Cedar Street/B Street	Intersection Safety improvement	Baker City TSP, Project R23	$50,000

*Cost estimates include engineering and construction

Figure 2-1. Past Identified Projects



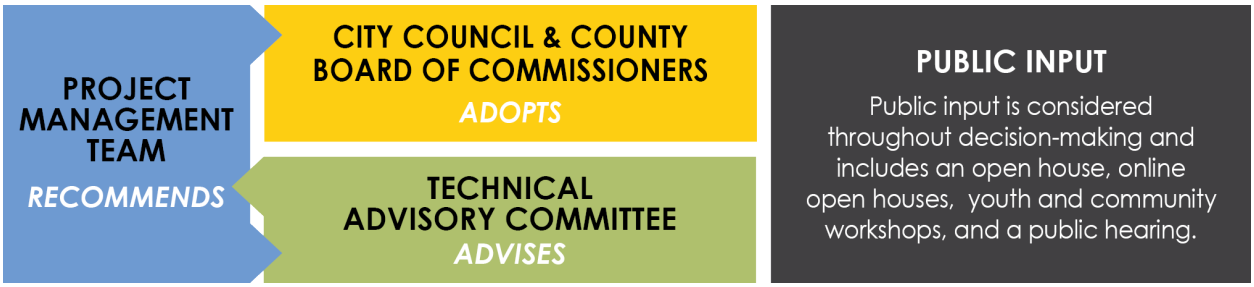
2.1.2 Engagement

Decision-Making Process

The Project Management Team (PMT) made up of City, County, Oregon Department of Transportation (ODOT), and consultant staff made recommendations to the City Council and Board of Commissioners based on technical analysis and stakeholder input. The City Council and County Board of Commissioners were the project's final decision makers and adopted the plan. For more information on public involvement, refer to Appendix I.

Early in the process, the City formed a Technical Advisory Committee (TAC) to review work products and provide technical and inter-jurisdictional guidance. The TAC's purpose was to advise the PMT. Multiple opportunities for public input were provided throughout the project process, as illustrated in Figure 2-2.

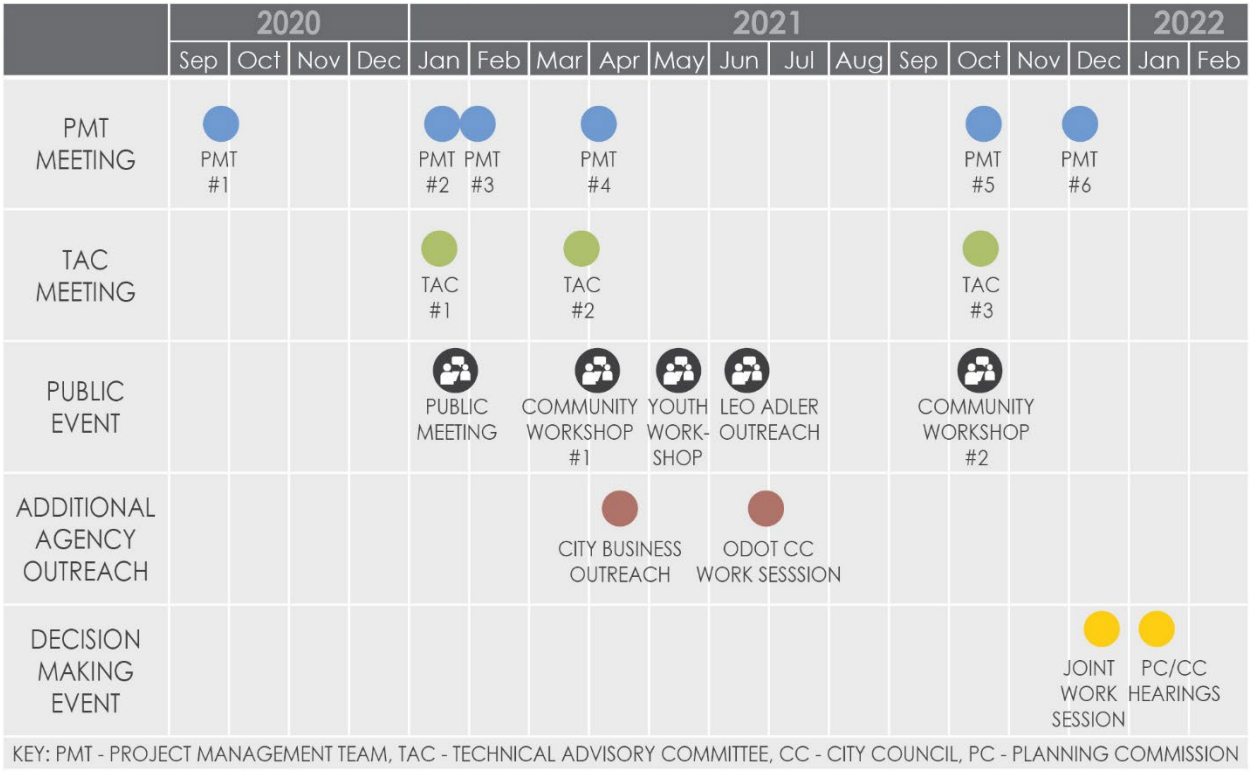
Figure 2-2. Decision-Making Process



Stakeholder and Public Input Process

The following is a summary of the key team, stakeholder, and public outreach events that informed the planning process and guided decisions (see Figure 2-3). Events included PMT meetings held at key junctures to review the project progression and discuss the outcomes of stakeholder or public meetings. Events also included TAC meetings to review work products and provide technical and inter-jurisdictional guidance. A variety of community events provided the public the opportunity to comment and provide feedback, including a virtual public meeting, two virtual community workshops, online open houses on the City's website, a youth workshop, and an outreach event along Leo Adler Memorial Parkway. In addition, City staff conducted targeted stakeholder outreach to hear from businesses on 10th Street, while ODOT staff held a work session with City Council to share recent ODOT project experience with three-lane roads in communities similar to Baker City. Leading up to the adoption by City Council and the County Board of Commissioners was a joint work session including the City Planning Commission, City Council, the County Planning Commission, and County Commissioners. Additionally, hearings were held with the City Planning Commission and City Council, as well as the County Planning Commission and County Commissioners.

Figure 2-3. Project Meetings and Events



PMT Meeting #1

The first PMT meeting took place on September 30, 2020.

TAC Meeting #1

The first TAC meeting took place on January 14, 2021. The project team provided a brief project overview. The team then presented the context and site analysis, followed by TAC member feedback. Members indicated concerns about right-of-way (ROW) and utility constraints in several locations. The project team also presented the draft vision and guiding principles. TAC members generally concurred with the document and provided feedback for modifications, such as adding intersection enhancements and reducing travel speed.

PMT Meeting #2

The second PMT meeting took place on January 19, 2021.

Virtual Public Meeting

A virtual public meeting with 42 participants took place on January 27, 2021. Participants commented on and asked questions about topics such as bike lanes on 10th Street, the possibility of undergrounding utilities, snow removal, and sidewalk improvements.

PMT Meeting #3

The third PMT meeting took place on February 3, 2021.

TAC Meeting #2

The second TAC meeting took place on March 30, 2021. The purpose of this meeting was to present draft design concepts and to provide TAC members the opportunity to comment and ask questions. Members had diverging opinions regarding the concepts for 10th Street, particularly with regard to the number of lanes and accommodation of bikes. Concerns expressed included snow removal, farm equipment, and business access and visibility. Regarding Cedar Street, the discussion focused on details of the proposed SUP, its adjacency to the roadway, and potential conflicts with utilities and mail or garbage trucks.

Virtual Community Workshop #1

The first virtual community workshop took place on April 1, 2021. The purpose of this workshop was to present draft design concepts and provide participants the opportunity to comment and ask questions. Regarding Cedar Street, comments generally supported the proposed paths, though concerns about potential conflicts with utility infrastructure and private site improvements encroaching into the ROW were raised. Regarding Hughes Lane/Pocahontas Road, commenters suggested including rumble strips to help separate the path from the roadway. Regarding 10th Street, a range of opinions were voiced about the lane configuration, and comments included support for more robust bike infrastructure as well as concerns about reduced lane width and snow removal.

PMT Meeting #4

The fourth PMT meeting took place on April 5, 2021.

City 10th Street Business Outreach

In mid-April, 2021, City staff reached out in person to individual business owners along 10th Street to solicit feedback on the proposed concepts. Concerns expressed included maintaining business access, including truck access, and business visibility. Interviewees were in favor of improving sidewalks and street lighting along the corridor.

Virtual Youth Workshop

A virtual youth workshop with five Baker City students took place on May 13, 2021. The purpose of the workshop was to solicit feedback about the preliminary design concepts specifically from the perspective of younger users of the project corridors. Participants discussed frequent destinations on 10th Street, which include the bowling alley and various nearby food establishments, all a short walk from the high school. Regarding Cedar Street, participants liked the idea of providing a pathway as they felt that walking or biking on the corridor currently does not feel safe. Similarly, participants thought Hughes Lane was uncomfortable to walk or bicycle on and endorsed the idea of the path. Regarding 10th Street, there were comments in support of adding bike lanes, which participants thought would get used, but also some concerns about only providing three travel lanes because of the farm equipment.

Leo Adler Memorial Parkway Outreach

An outreach event at Leo Adler Memorial Parkway took place on June 21, 2021, and included four participants who stopped by the information table. Regarding Cedar Street,

participants mostly felt that including a bike facility on Cedar Street was very important. Providing a safe crossing near the senior center was mentioned. Regarding Hughes Lane/Pocahontas Road, the corridor was seen as unsafe and there was an interest in providing access for pedestrians and bicyclists. Regarding 10th Street, participants expressed an interest in improved access for pedestrians and bicyclists, including a connection to Leo Adler Memorial Parkway near H Street, and in reduced travel speed. Improved sidewalks and crossings were mentioned as well.

ODOT Work Session with City Council

ODOT hosted an in-person work session with City Council members on June 30, 2021. The purpose was to share recent ODOT project experience with three-lane roadways in Oregon communities similar in scale and character to Baker City. A lively discussion with three councilors took place about the merits of lane reduction projects.

Community Workshop #2

The second virtual community workshop took place on October 13, 2021. The purpose of the workshop was to review the preferred design concepts and provide participants the opportunity to comment and ask questions. Participant questions included clarification of the access to the high school property from Hughes Lane, specific details on the proposed crossings on 10th Street, and snow removal. The proposed intersection layout at 10th Street and Hughes Lane/Pocahontas Road was seen favorably.

TAC Meeting #3

The third TAC meeting took place on October 14, 2021. The purpose of the meeting was to review the preferred design concepts and the transportation solutions analysis. Regarding Cedar Street, some members raised concerns about constraints along the east side and the feasibility of the proposed path. Other concerns include the intersection design at D Street and the overall cost of improvements on Cedar Street. Regarding Hughes Lane, discussion included the need to clarify who will pay for the proposed new bike/pedestrian bridge. Regarding 10th Street, there was a variety of opinions about bike lanes, curb extensions, traffic signals, and the proposed realignment of the intersection at Hughes Lane/Pocahontas Road.

PMT Meeting #5

The fifth PMT meeting took place on October 19, 2021.

PMT Meeting #6

The sixth and final PMT meeting took place on December 7, 2021.

Subsequently, the project went through the City Planning Commission and Council approval process as well as the County Planning Commission and County Commission approval process.

3 Existing Conditions

This section provides an overview of the existing conditions in the project area. It describes socioeconomic conditions, identifies any cultural and historic sites, looks at land uses along 10th Street, and provides an overview of transportation conditions along all three project corridors. For more information on existing conditions, refer to Appendix III. Information on the analysis methodology employed can be found in Appendix II.

3.1 Socioeconomic Conditions

The potential for high concentrations of low-income and/or minority populations in or near the project area was assessed by identifying the Census blockgroups with low-income or minority populations overrepresented by 50 percent or more compared to surrounding blockgroups in Baker County. Census data was reviewed from the study area, which includes ten blockgroups. Data from each blockgroup was compared against census data for Baker County to determine presence of meaningfully greater populations of minority, low-income, elderly, handicapped, and transit-dependent populations. In summary:

- Of the households in 2018 in Baker County, 14.7 percent were below the poverty level.
- Minority populations from 2010 and 2020 in Baker County were 7.4 percent and 10.3 percent, respectively.
- In 2020, the senior population in Baker County was equal to 26.9 percent.
- In 2018, 39.1 percent of households in Baker County had at least one person with a disability.
- In 2018, owner households with no vehicles in Baker County was 2.1 percent and renter households with no vehicles was 18.2 percent. Additional research to confirm presence of environmental justice populations in the study area may be required.

3.2 Cultural and Historic Sites

Downtown Baker City is a designated Historic District and is nearby, but it does not overlap the study area. There may be buildings or sites located within the study area that have not been evaluated for historic eligibility, requiring a historic resources survey for further investigation.

A search for cultural resources from the City of Baker City and Baker County did not reveal any documented sites or resources in the study area. Most of the study area is developed, and the probability of encountering intact archaeological artifacts is low in those areas. The probability is higher in the undeveloped portions of the study area. Further investigation, including a cultural resources survey, would be required to determine areas of concern.

In addition to cultural and historic resources, Section 4(f) and Section 6(f) resources need to be investigated. Section 4(f) resources are recreation areas, parks, and wildlife refuges that are publicly owned or open to the public. Section 6(f) resources are those properties that were acquired or developed with grants from the Land and Water Conservation Fund and are prohibited from conversion to a non-recreational purpose. It does not appear that any existing Section 4(f) or Section 6(f) recreation resources overlap with the study area.

3.3 Land Use

The land use surrounding the 10th Street corridor was assessed to make recommendations on land use changes along 10th Street to encourage development. Land use changes to properties along Cedar Street or Hughes Lane/Pocahontas Road are not being considered.

10th Street is primarily a commercial corridor that features automotive-oriented types of development. Commercial corridors are typically characterized as commercial areas located outside of the downtown area and oriented to main thoroughfares. These areas are developed in a linear fashion, as opposed to nodal or compact development, and attract uses that depend on access to an arterial or that benefit from drive-by traffic. Site and building design are generally scaled to cater to automobiles with design features such as drive-through facilities, medium or large parking areas, and greater separation between buildings and the streets. Automotive-oriented development areas may also successfully accommodate other modes of transportation such as transit, bicycling or walking, and depending in part on public investments, the regulatory environment and how recent the area was developed.

3.3.1 Zoning Designations along 10th Street and Pocahontas Road

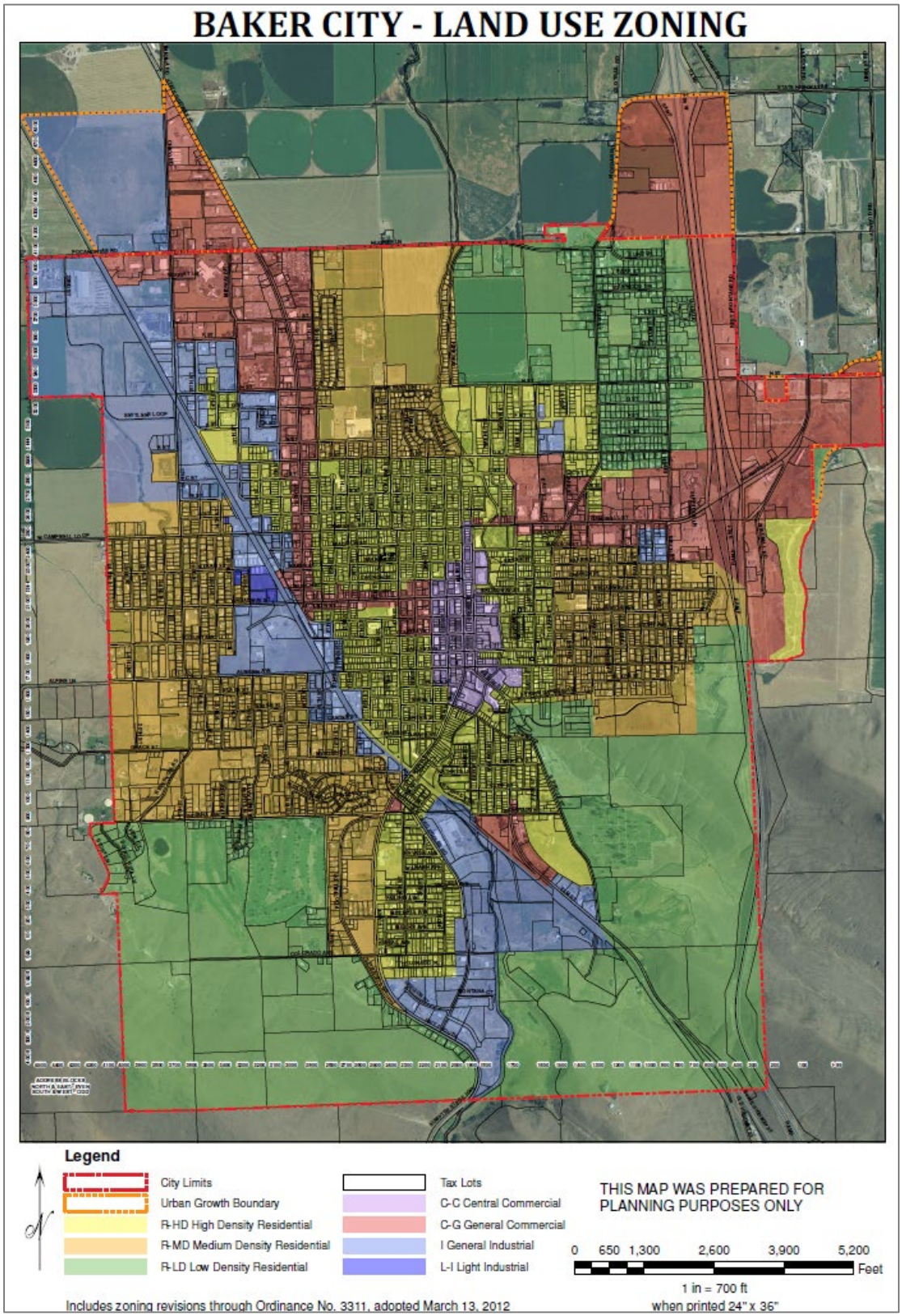
Commercial uses comprise most of the current uses adjacent to 10th Street and Pocahontas Road. Every block along the 10th Street corridor includes at least one commercial use, while some blocks consist entirely of commercial uses. Residential and institutional/other uses are not concentrated in any particular area along 10th Street; they are found sporadically and typically not adjacent to other like uses. Adjacent to Pocahontas Road are primarily institutional uses with some commercial uses present. There are no residential uses along Pocahontas Road.

The City's Development Code implements the policies established in the City's Comprehensive Plan. It regulates development through zoning and provisions that apply generally to all development and specifically to land divisions within the City. The City's zoning requirements establish allowed uses and associated development regulations, permitted uses, and lot standards.

Figure 3-1 shows the location of zoning districts within the project area. Lots adjacent to 10th Street and Pocahontas Road are all zoned General Commercial (C-G). There is a mix of zones near 10th Street, including General Industrial (GI), High Density Residential (R-HD), Medium Density Residential (R-MD), and additional C-G zoning. While these zones are not directly adjacent to 10th Street nor reviewed as part of this assessment,

they speak to the character of land uses in the area and indicate the types of trips through the corridor.

Figure 3-1. Baker City Zoning Map



3.3.2 Use Standards

All lots adjacent to 10th Street and Pocahontas Road are zoned C-G, which accommodates a range of commercial uses in the community generally. The C-G zone is intended to:

- Support commercial areas outside or adjacent to the central business area.
- Promote efficient use of land and urban services.
- Create a mixture of land uses that encourages employment and housing options near one another.
- Provide formal and informal community gathering places and opportunities for socialization.
- Encourage pedestrian-oriented development.
- Provide connections to, and appropriate transitions between, residential areas and commercial areas.
- Accommodate automobile-oriented uses with appropriate design standards.

The C-G zone conditionally permits or allows a wide range of uses under the residential, commercial, industrial, and institutional use categories. Permitted residential uses include dwellings built in conjunction with commercial use. Stand-alone duplex and multi-family residential development are allowed conditionally. New single-family development is not permitted.

Permitted commercial uses in the zone include offices, retail sales and services, vacation rentals, commercial educational services, and parking facilities. Permitted uses that are subject to standards include drive-through or similar facilities, quick vehicle servicing, or vehicle repair. Uses that are allowed conditionally include shopping centers with three or more establishments, commercial uses with 80,000 square feet or more of building space, major event entertainment, and commercial outdoor recreation uses.

Industrial uses that are fully enclosed are also permitted in the C-G zone. Industrial uses that are not fully enclosed or wholesale sales that are fully enclosed and larger than 40,000 square feet of floor area are allowed conditionally in the zone. All institutional uses except for detention facilities, new religious institutions, and new schools are permitted in the C-G zone.

3.3.3 Zone Development Standards

There is no minimum lot size requirement for non-residential uses in the C-G zone, however development must conform to minimum lot width (20 feet) and depth (twice the width) requirements. Structures are limited to 40 feet in height unless upper floor residential uses are also proposed, in which case the height restriction is 50 feet. Up to 93 percent of a site can be built with buildings. A minimum of 7 percent of the site is required to be landscaped. The zone does not have a minimum or maximum setback requirement for new buildings.

Development Status

Table 3-1 shows how many tax lots that are vacant in each use category and thereby has the potential for development, or if there is an opportunity for redevelopment pursuant to the criteria explained above. As shown, most of the tax lots on 10th Street are currently developed. Commercial uses comprise most current uses on 10th Street and over 80 percent of these tax lots are developed. The remainder includes a mix of residential and institutional/other uses found in the corridor. Approximately 19 percent of tax lots on 10th Street are considered vacant or redevelopable based on the definitions above.

Table 3-1. Development Status of Current Use

Current Use	Developed	Redevelopable	Vacant	Total
	Number of Tax Lots			
Single-family Residential	15	0	0	**15**
Multi-family Residential	1	0	0	**1**
Commercial	62	5	14	**81**
Institutional/Other	9	0	1	**10**
Total	**87**	**5**	**15**	**107**

Development Potential

Areas that are mostly vacant have a high degree of transformational potential, largely due to the lack of barriers associated with the built environment. Conversely, areas with a lack of vacant or redevelopable areas will likely remain unchanged over the planning horizon, particularly if it includes recently developed parcels and/or the improvement value of the development in the area is relatively high. In situations with a lack of vacant or redevelopable areas, rising land values and public investments can contribute towards making portions of the area more likely to redevelop in the longer term.

Only a few vacant or redevelopable parcels exist adjacent to 10th Street and Pocahontas Road. These areas comprise less than one-fifth (approximately 16 acres) of tax lots in the corridor. Most of the identified vacant or redevelopable properties consist of outdoor storage or parking areas used in connection with adjacent business. Only two lots were identified as vacant or redevelopable and over two acres in size. Vacant and redevelopable lots represent the greatest potential for new development to occur in the area. The type and intensity of the uses allowed are determined by the use and development standards as provided in the City's zoning regulations and are described in the following section.

3.4 Transportation Conditions

3.4.1 Existing Cross Sections

10th Street

Currently, 10th Street provides two travel lanes in each direction with curbside parking provided approximately between Broadway Street and H Street. While the ROW is consistent at approximately 80 feet, the curb-to-curb distance changes at H Street. The curb-to-curb distance is approximately 66 feet south of H Street (Figure 3-2) and narrows slightly to approximately 60 feet north of H Street (Figure 3-3).

Figure 3-2. Existing Typical Condition South of H Street

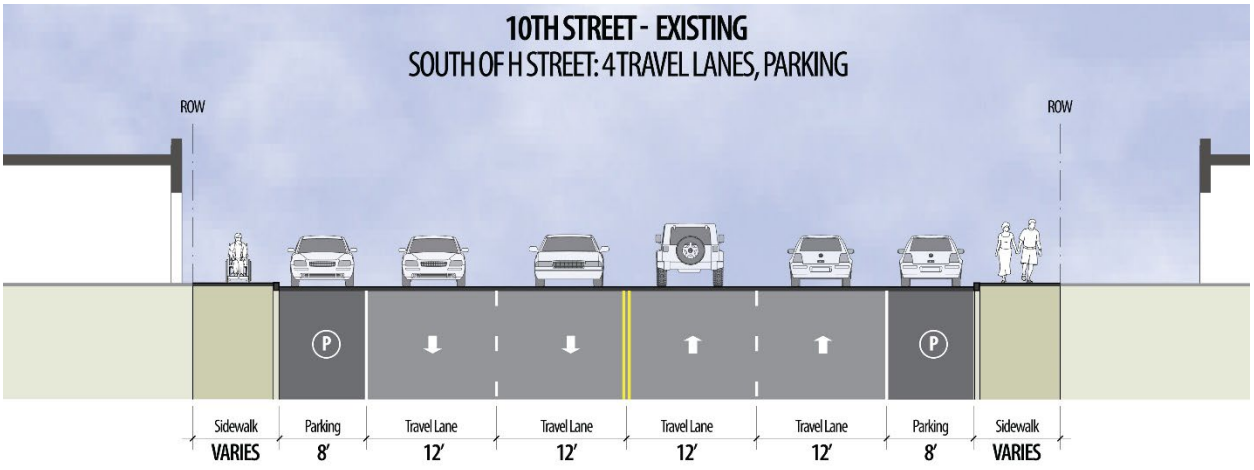
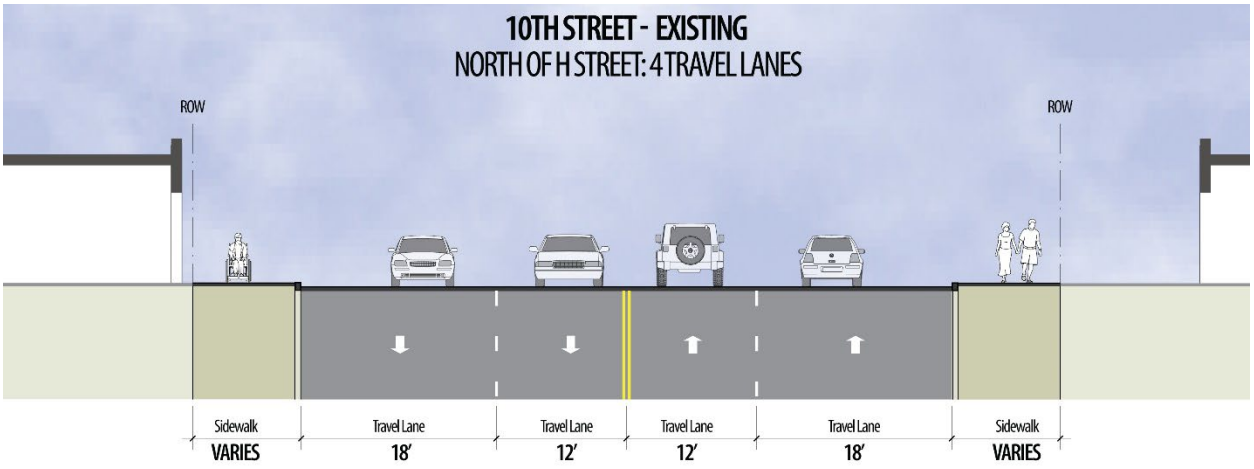


Figure 3-3. Existing Typical Condition North of H Street



Between H Street and Broadway Street, 10th Street intersections are generally provided at regular intervals of approximately 330 feet. There are limited street intersections on 10th Street between H Street and Hughes Lane/Pocahontas Road; the space between intersections exceeds 1,000 feet. Intersection spacing for the portion of Pocahontas Road within the Sub-area ranges between 500 and 1,000 feet.

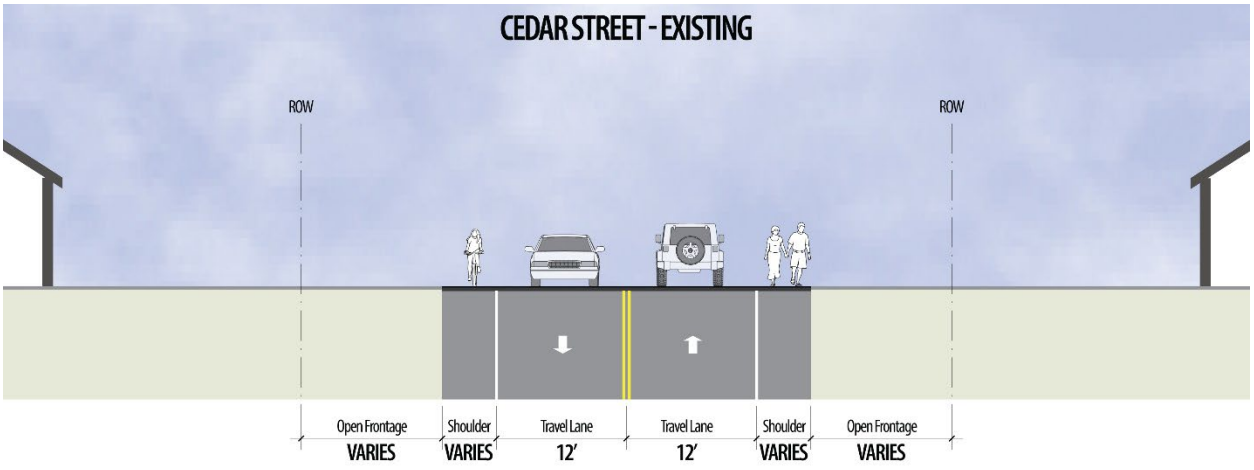
Most lots adjacent to 10th Street have direct access to the street via one or more driveways. Lots with more than one driveway access are generally located north of H Street. The size and spacing of driveways vary between lots. Consolidated access between multiple lots is uncommon due in part to a combination of modest building setbacks and smaller parking areas.

Curbing is provided along 10th Street; however, the availability of sidewalks is limited in terms of consistency and design. Available sidewalks on 10th Street are usually curb-tight and not separated from the street by a planter strip or other form of buffer. Some parking areas are located directly adjacent to 10th Street, interrupting the continuity of the sidewalk network and reducing pedestrian circulation and safety. On-street parking is provided along the 10th Street corridor without signage or street markings.

Cedar Street

Currently, Cedar Street provides one travel lane in each direction along with paved shoulders of varying width (see Figure 3-4). People on foot or bike utilize the shoulder to walk or ride. Outside of the paved section there is open frontage along both sides. The ROW is consistent at approximately 60 feet.

Figure 3-4. Existing Typical Condition on Cedar Street



Hughes Lane/Pocahontas Road

Currently, Hughes Lane provides one travel lane in each direction along with paved shoulders of varying width (see Figure 3-5). People on foot or bike utilize the shoulder to walk or ride. Outside of the paved section there is open frontage along both sides. The ROW is consistent at approximately 60 feet.

Pocahontas Road provides one travel lane in each direction and a center turn lane along with paved shoulders of varying width (see Figure 3-6). People on foot or bike utilize the shoulder to walk or ride. Outside of the paved section, there is open frontage along both sides. The ROW is consistent at approximately 60 feet.

Figure 3-5. Existing Typical Condition on Hughes Lane

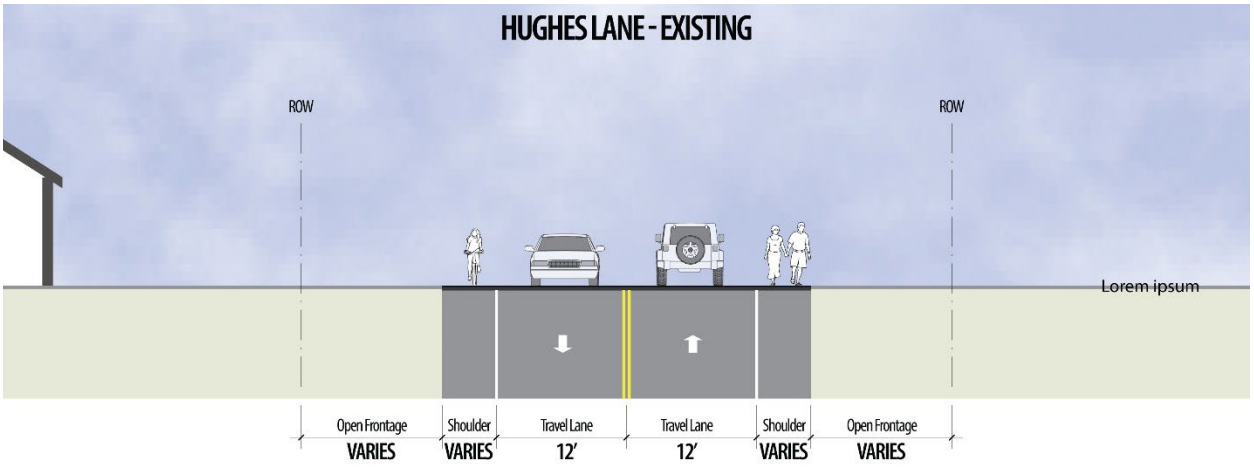
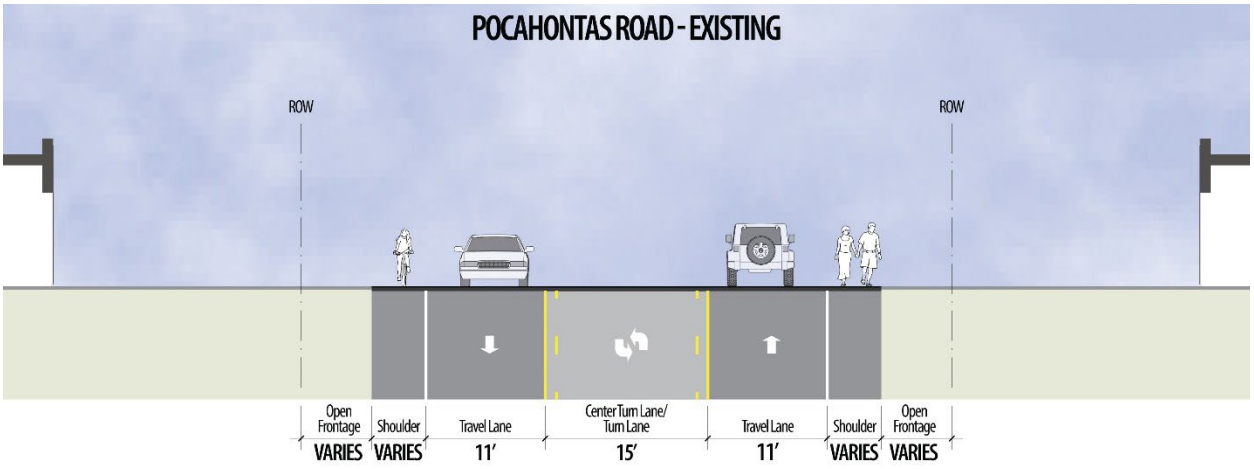


Figure 3-6. Existing Typical Condition on Pocahontas Road



3.4.2 10th Street Traffic Operations

Traffic analysis was performed to determine volume-to-capacity (v/c) ratios for comparison to ODOT mobility thresholds consistent with Action 1F.1 of the Oregon Highway Plan (OHP). ODOT mobility standards provide acceptable v/c ratios for project

development and design. Every intersection has a theoretical capacity (measured in vehicles per time period) as a function of the number of lanes (through and turning), type of control (e.g., two-way stop control, all-way stop control, or traffic signal), mix of vehicles and many other factors.The v/c ratio compares peak period traffic volume to the theoretical capacity of the intersection during that period. A lower v/c ratio is better.

The 10th Street corridor is located within the limits of Baker City and designated as a District Highway by the OHP. The OHP mobility targets for existing conditions are an overall intersection v/c ratio of 0.95 for the signalized intersection at 10th Street/Campbell Street, and a 0.95 v/c ratio for the unsignalized state highway and local street approaches at the Broadway Street, E Street, and Hughes Lane intersections. Highway Capacity Manual (HCM) compliant Level-of-Service (LOS) results have also been provided. Level of service is a measure of average vehicle delay (in seconds) at an intersection. This is a second way to look at the performance of an intersection and is calculated as a function of many of the same variables as the v/c ratio. The performance measure is reported from A to F; where A is good.

Table 3-2 summarizes the existing year peak hour operational results. Based on the existing conditions analysis, all study area intersections currently meet OHP mobility targets. The unsignalized intersections are also operating at LOS C or better, and the signalized intersection at Campbell Street is operating at LOS A. These conditions indicate no to very minor issues related to traffic congestion.

Table 3-2. Existing Year (2020) Peak Hour Operations

Unsignalized Intersection[1]	Major Street v/c	Minor Street		LOS
		v/c	Delay (s)	
10th Street & Hughes Lane	0.09	0.49	22.8	C
10th Street & E Street	0.08	0.21	14.3	B
10th Street & Broadway Street	0.14	0.15	11.6	C
Signalized Intersection[2]	**v/c**		**Delay (s)**	**LOS**
10th Street & Campbell Street	0.26		6.2	A

[1] Unsignalized intersection LOS based on worst stop-controlled movement.
[2] Signalized intersection LOS based on overall intersection operations.

3.4.3 Freight Operations

The 24-hour vehicle classification counts were collected on each of the project corridors. Table 3-3 shows medium and heavy truck volumes taken from the 24-hour counts. Medium trucks include farm equipment, buses, trucks pulling horse trailers, RVs, and dual axle pickup trucks; heavy trucks are trucks with four or more axles. As shown, medium trucks represent approximately 20 percent of vehicle volumes for the three corridors while heavy trucks range from 3 to 7 percent of vehicle volumes.

Table 3-3. 24-hour Classification Counts

Location	Direction	Total Volume	Medium Truck Volume	Medium Truck %	Heavy Truck Volume	Heavy Truck %
10th Street south of Hughes Lane	NB	2,453	434	18%	100	4%
	SB	2,527	481	19%	95	4%
	Total	**4,980**	**915**	**18%**	**195**	**4%**
Cedar Street south of Hughes Lane	NB	1,424	228	16%	41	3%
	SB	1,499	227	15%	37	2%
	Total	**2,923**	**455**	**16%**	**78**	**3%**
Hughes Lane east of 10th Street	EB	1,592	288	18%	136	9%
	WB	1,425	338	24%	76	5%
	Total	**3,016**	**626**	**21%**	**212**	**7%**

3.4.4 Active Transportation

Baker City's bicycle and pedestrian networks are comprehensive for the size of the community. A generally well-connected street grid supports direct active transportation connections through most parts of the community, while off-street assets (e.g., Leo Adler Memorial Parkway) provide additional links to key destinations. Most roadways are designated local streets with relatively low vehicle volumes. Gaps in the network primarily occur on streets designated as collectors and arterials.

The 2013 TSP concentrated a large portion of analysis and project dollars towards building out a full active transportation network. Overall, the TSP identified 45 individual pedestrian, four bicycle, and 14 multi-use projects for funding.

Corridor Overviews

10th Street (US30)

- Classified as an Urban Business Arterial, the roadway features vehicle volumes just under of 5,000 average daily traffic (ADT) and four general purpose travel lanes along the entire corridor length.
- Bike lanes are missing from the entire length of the corridor.

- North of E Street, sidewalks are almost completely missing on both sides of 10th Street. South of E Street, the sidewalk network is more complete with only sporadic gaps in the curb tight sidewalks.
- Most sidewalks are not ADA compliant because ADA-compliant curb ramps are lacking at most intersections.

Hughes Lane/Pocahontas Road

- Classified as an arterial, the roadway features vehicle volumes of 3,000 ADT.
- No sidewalks are present, however a striped bike lane measuring approximately five feet wide is present along Hughes Lane in both east and west directions. A 10-foot-wide gravel shoulder is also present.
- A connection to the Leo Adler Memorial Parkway exists at the intersection with Kirkway Street. No crossing improvements are present.

Cedar Street

- Classified as a collector, vehicle volumes are approximately 3,000 ADT.
- The intersection with Hughes Lane features geometries that allow turning movements at relatively high speeds, presenting potential safety issues for people walking and bicycling. In addition to the geometry, the speed limit north of the intersection is marked as 45 miles per hour (mph) and vehicles may still be traveling at these higher speeds when approaching the intersection in the southbound direction.
- The entire length of the roadway is missing bike lanes and sidewalks, both sides of the street feature a paved and gravel shoulder up to 10 feet wide that is useable by people walking and bicycling.
- The speed limit from Hughes Lane to H Street is 35 mph. South of H Street the speed limit is 25 mph providing a potentially greater level of comfort for vulnerable roadway users.

BLTS and PLTS

Level of Traffic Stress (LTS) is a key indicator in measuring how comfortable a roadway segment or intersection is for an active transportation user to navigate. LTS objectively measures several roadway factors including traffic volumes, speeds, and the presence and quality of bicycle and pedestrian facilities to produce an LTS rating. Ratings are measured 1 through 4 with 1 representing the most comfortable environment for active transportation users.

Table 3-4 reports the Bicycle LTS (BLTS) and Pedestrian LTS (PLTS) ratings for roadway segments and intersections. The LTS ratings for segments are scored based on the worst performing roadway characteristic. For example, a roadway may score BLTS 2 based on volumes but BLTS 4 based on bicycle facility type and thus the segment would receive an overall score of BLTS 4.

Table 3-4. BLTS and PLTS Ratings

Location	BLTS Rating	BLTS Approach Rating	PLTS Rating	PLTS Crossing Rating
10th Street (US 30)				
Hughes Lane to E Street	3	-	4	-
E Street to Campbell Street	3	-	3	-
Campbell Street to Broadway	3	-	3	-
Hughes Lane/Pocahontas Road				
17th Street to 10th Street	3	-	4	-
10th Street to Kirkway Street	3	-	4	-
Kirkway Street to Cedar Street	3	-	4	-
Cedar Street				
Hughes Lane to H Street	3	-	4	-
H Street to D Street	3	-	4	-
D Street to Campbell Street	3	-	4	-
Intersections				
10th Street/Hughes Lane	-	4	-	4
10th Street/E Street	-	3	-	4
10th Street/Campbell Street	-	3	-	3
10th Street/Broadway Street	-	3	-	4
Pocahontas Road/17th Street	-	4	-	3
Hughes Lane/Kirkway Street	-	3	-	3
Hughes Lane/Cedar Street	-	3	-	3
Cedar Street/H Street	-	1	-	2
Cedar Street/D Street	-	1	-	1
Cedar Street/Campbell Street	-	1	-	1

The analysis showed that roadway segments generally rank LTS 3 and 4 for both bicycles and pedestrians primarily due to a combination of higher speeds and missing active transportation infrastructure. Key findings include the following:

- 10th Street – The lack of ADA-compliant curb ramps at intersections limits the corridor south of E Street from scoring higher than PLTS 3. The lack of marked bike lanes adjacent to multiple vehicle lanes in each direction limits the BLTS rating to 3.
- Cedar Street – Despite the lack of bike lanes and sidewalks, intersection ratings south of H Street perform well due of the lower vehicle speeds and less-complex intersection configurations. The lack of sidewalks results in a PLTS 4 score for the corridor's entirety.
- Hughes Lane – The lack of sidewalks results in a PLTS 4 score for the corridor's entirety.

3.4.5 Transit

Baker City features both local and regional transit services. This section provides a summary of those transit services, their relation to the primary corridors focused on in this project and existing facilities along those corridors.

Regional Service

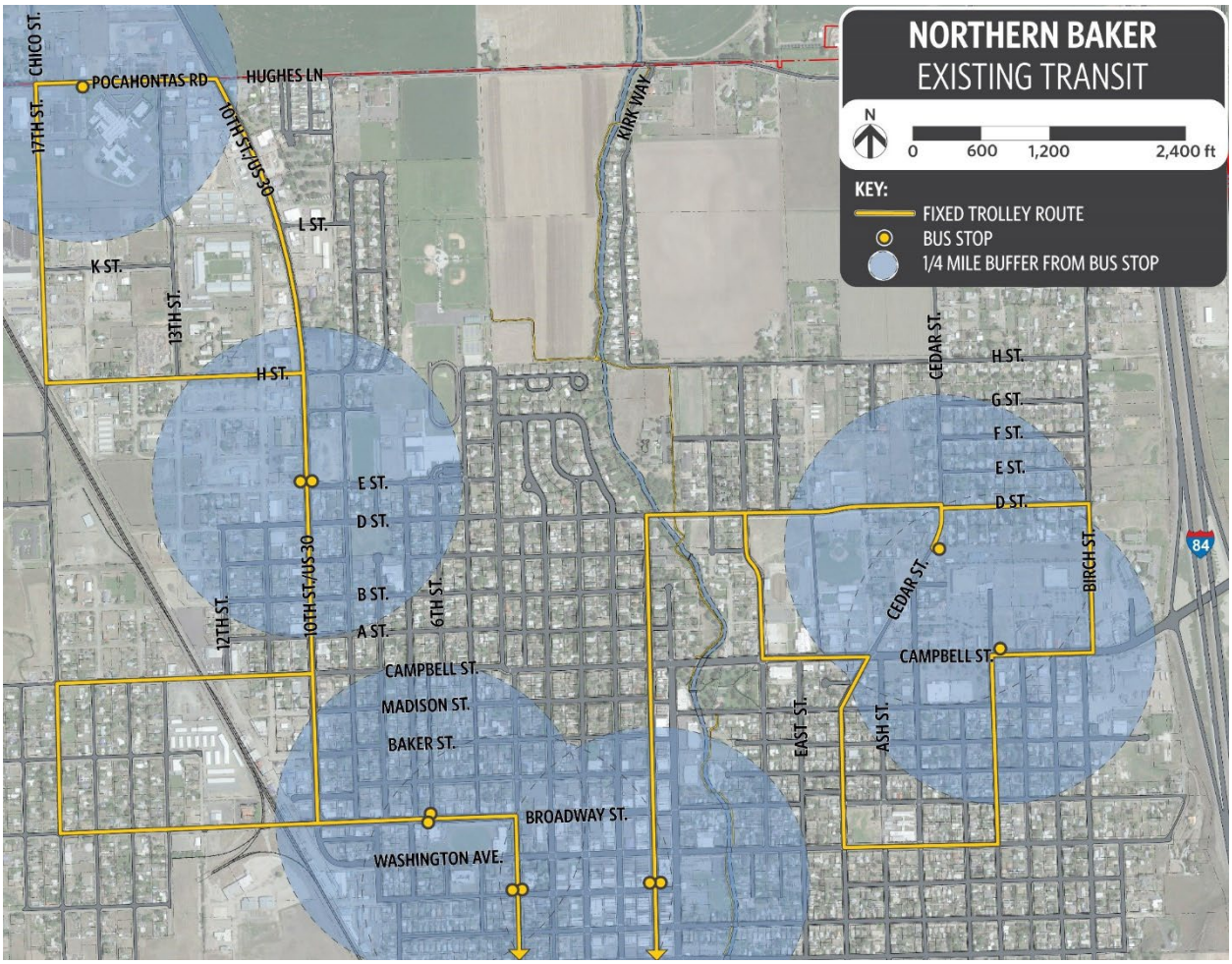
Baker City is connected to the wider Eastern Oregon region through several regional transit services. Northeast Oregon Public Transit (NEO Transit) operates the Baker City Connector service, a shuttle service providing once per week service between Baker City and several other Eastern Oregon communities including Haines, North Powder, La Grande and Halfway.

Local Service

NEO Transit operates a fixed route trolley bus service that provides connections throughout Baker City. Figure 3-7 shows the fixed route service and the nine primary stops in town. Three of the stops are on the study corridors: 10th Street/E Street intersection, Pocahontas Road at Saint Alphonsus Medical Center, and Cedar Street at NEO Transit offices. The stop at the NEO Transit offices functions as a park-and-ride transit center connecting to the regional shuttle services operated by NEO Transit. With only a handful of stops, service coverage for the city is relatively high as the bus can be waved down at any point along its route. This means that a large portion of Baker City residents are within a 0.25-mile walk or ride of transit service.

The fixed route service operates from 8 AM through 5 PM on weekdays with a headway of 50 minutes in each direction. A single ride costs $1.00, an all-day pass $3.00, and a monthly pass $35.00. NEO Transit operates additional flexible route services within Baker City, including Paratransit and a dial-a-ride service. The cost for the flexible services is the same as for the fixed route service.

Figure 3-7. Existing Baker City Fixed-Route Transit Service



Transit Facilities

The stops generally feature only the signs, gravel waiting areas and overhead lights. There are generally no benches, shelters, or bike racks. Outside of downtown, the lack of complete sidewalks and low level of stops make most of the stop locations less than inviting and difficult to see.

Transit Use and Demographic Findings

According to NEO Transit, the average yearly ridership for the fixed route service was approximately 19,000 people over the last four years. This is the equivalent of approximately two rides per year for each person living in Baker City.

Table 3-5 shows a summary of mode of travel and travel time data for Baker City. This data is from the Census Bureau's five-year American Communities Survey (ACS). According to the survey, 5.5 percent of households do not have access to a vehicle, and 82 percent of work commutes are under 15 minutes. The primary mode to work is drive alone; transit is not used for commute trips in Baker City.

Table 3-5. Summary of Transportation Related Data – 5-year ACS

Field	Estimate
Baker City	
Total Population	9,738
Workers 16 and over	3,730
Total Employees	4,264
No Vehicle Households	5.5%
Commute Mode to Work	
Drove Alone	71%
Carpooled	14%
Public Transit	0%
Walked	7%
Bicycled	1%
Travel Time to Work (All Modes)	
< 5 minutes	14. 5%
5 – 9 minutes	48.6%
10 – 14 minutes	19%
15 – 24 minutes	8.9%
> 25 minutes	9%

3.4.6 Crash History

As shown in Table 3-6, there were 52 crashes within the project area between 2014 and 2018. Just over 50 percent of crashes happened along 10th Street; 28 percent occurred on Cedar Street and 23 percent on Hughes Lane/Pocahontas Road. Overall, the highest number of crashes occurred on Wednesdays (32 percent of the total). In addition, the highest number of crashes per day was between 12:00 PM to 2:00 PM (28 percent). The time-of-day concentration matches the single peak hour weekday traffic counts for the project area. Crashes in the table below may show up twice and recorded as occurring on two streets.

Table 3-6. Total Crashes by Roadway (intersections and segments)

Corridor	Crashes	Fatal (K)	Serious Injury (A)	Moderate Injury (B)	Minor Injury (C)	Property Damage Only
Project Area	52	0	2	12	14	24
10th Street*	28	0	2	9	6	11
Cedar Street*	12	0	0	2	7	3
Hughes Lane/Pocahontas Road*	12	0	0	1	1	10

*Crashes may be reported on multiple project roadways, for example a crash at the intersection of Cedar Street and Hughes Lane is recorded on both streets.

Two serious injury crashes occurred within the project area, both of which took place on 10th Street. Property Damage Only are the largest portion of crashes at 42 percent while 27 percent feature minor injury crashes and 23 percent feature moderate injury crashes. Most moderate injuries occurred on 10th Street while Cedar Street featured the most crashes resulting in minor injuries.

The three most common collision types were turning movement at 32 percent, angle at 25 percent and rear-end crashes at 19 percent. Failing to yield the ROW was the most common contributing factor at 35 percent, followed by driving too fast at 14 percent, and following too closely at 10 percent.

10th Street Crash Summary

Table 3-7 summarizes the crashes along 10th Street by segment (excluding intersections). As shown, 46 percent of all crashes along 10th Street occurred between Broadway Street and Campbell Street. The highest concentration of moderate injury crashes occurred on segment 3, representing 25 percent of all crashes along 10th Street.

The most common crash types were turning movement (36 percent) and angle collisions (32 percent). Most of the turning movement crashes occurred between Broadway Street and Campbell Street with failure to yield (22 percent) the most contributing factor of all crashes.

Table 3-7. 10th Street Segment Crash Summary

Reported Stat	10th Segment 1: Broadway to Campbell	10th Segment 2: Campbell to E St	10th Segment 3: E St to Hughes Ln
Fatal	0	0	0
Injury A (Incapacitated)	0	1	1
Injury B (Moderate Injury)	0	0	2
Injury C (Minor Injury)	0	3	0
No Injury (Complaint of Pain)	0	0	0
Property Damage	2	1	2
Total	**2**	**5**	**4**

Crash Rate Assessment

Local crash rates for all the locations examined are lower than the average crash rate for similar facility types across Oregon. Crash rates for the project roadways and four study intersections were calculated using the ODOT Analysis Procedures Manual (APM) methodology. The local rates are shown in Table 3-8 and compared to ODOT statewide critical crash rates taken from the ODOT Crash Rate Table II for the roadway segments and Exhibit 4-1: Intersection Crash Rates for intersections.

Table 3-8. Calculated Crash Rates

Location	Crash Rate	Intersection Type	Roadway Class-ification	Statewide Critical Crash Rate	Δ between Crash Rates	Over or Under Critical Crash Rate
Roadway Segments						
Cedar Street	0.56	-	Urban Minor Arterial	1.93*	-1.37	Under
Hughes Lane/Pocahontas Road	0.37	-	Urban Minor Arterial	1.93*	-1.56	Under
10th Segment 1: Broadway Street to Campbell Street	0.74	-	Urban Minor Arterial	1.93*	-1.19	Under
10th Segment 2: Campbell to E Street	1.04	-	Urban Minor Arterial	1.93*	-.89	Under
10th Segment 3: E Street to Hughes Lane	0.63	-	Urban Minor Arterial	1.93*	-1.30	Under
Intersections						
10th Street/Hughes Lane	0.12	Urban 4ST†	-	0.198**	-0.08	Under
10th Street/Campbell Street	0.11	Urban 4SG††	-	0..477**	-0.37	Under
10th Street/Broadway Street	0.06	Urban 4ST†	-	0.198**	-0.14	Under
10th Street/E Street	0	Urban 4ST†	-	0.198**	-0.20	Under

*Rates from ODOT Crash Rate Table
**Rates from Exhibit 4-1: Intersection Crash Rates found in Chapter 4 of the ODOT APM
†Urban, four-legged, minor stop-controlled intersection
††Urban, four-legged signalized

3.4.7 Summary of Transportation Findings

The existing conditions findings are summarized below. These are high-level takeaways based on the detailed analysis presented throughout Section 3.

- Traffic Operations – Existing year (2020) traffic operations meet ODOT volume-to-capacity ratio mobility targets and LOS C or better.
- Freight – Medium trucks represent approximately 20 percent of vehicle volumes for the three corridors while heavy trucks range from 3 to 7 percent of vehicle volumes.. As a District Highway, 10th Street (US30) is not designated as a National Freight, Oregon Highway Freight, High Clearance or Reduction Review Route. However, due to agricultural activity and related farm equipment movement along the corridor, the hole-in-the-air[1] should still be considered during the design phase.
- Active Transportation – Most roadways examined within the BLTS and PLTS analysis found LTS ratings of 3 and 4, which represent moderate to high stress environments for active users.
- Transit – Local fixed route service provides a high level of community coverage and links important community resources together.
- Safety – No fatalities were recorded in the project area. The crash rate calculations did not identify any crash hot spots using ODOT's crash rate rating system.

[1] Hole-in-the-air describes the area needed to accommodate legal and permitted over-dimension loads. The hole-in-the-air refers to the entire roadway, not just the load on the road at any particular moment.

4 Alternatives Development and Evaluation

The design team developed several concepts to address the issues identified during the existing conditions assessment. Each of the design concepts was presented to the TAC and the public for feedback and was evaluated using a set of evaluation criteria developed with the help of the TAC. The evaluation criteria were further informed by the guiding principles developed at the outset of the project. For more information on the process for developing and evaluating the concept designs, refer to Appendix V.

4.1 Evaluation Process and Criteria

The three project corridors, 10th Street, Hughes Lane/Pocahontas Road, and Cedar Street are distinct in terms of transportation function, location within the urban fabric, and character of the built (or unbuilt) context. Therefore, not all criteria are equally applicable or relevant for all three corridors. The project evaluation criteria described here reflect the unique character of each project corridor.

The criteria are considerations intended to gauge the degree to which the proposed design recommendations achieve the goals encapsulated in the project vision and guiding principles. The evaluation criteria are as follows:

- Feasibility of implementation
  - Can the proposed design easily be phased and constructed?
- ROW constraints
  - Does the proposed design require additional ROW?
- Built environment constraints
  - Are there buildings or other structures that may obstruct the proposed design?
- Environmental impacts and mitigation
  - Does the proposed design address environmental impacts and include necessary mitigation measures such as stormwater facilities?
- Conceptual cost estimate
  - Are cost and benefits of the proposed design commensurate?
- Safety and comfort for all modes of travel
  - Does the proposed design enhance the safety and comfort of all users?
- Connectivity across corridor
  - Does the proposed design allow people to cross the street comfortably?
- Level of public and stakeholder support
  - Have outreach event participants been supportive of the proposed design?
- Community identity and aesthetics

  - Does the proposed design enhance corridor aesthetics and contribute to the community identity?

- Business vitality/community livability
  - Does the proposed design help businesses along 10th Street or make the neighborhoods along Cedar Street and Hughes Lane/Pocahontas Road more livable?

The team completed a Project Evaluation Criteria Matrix for each alternative, listing the criteria, providing a qualitative score of good, average, or poor, and providing comments elaborating on and justifying the scoring.

4.2 Concepts Considered

This section describes and depicts design concepts for all three corridors, includes typical cross sections of the existing conditions for reference, and provides initial evaluations of the concepts based on the evaluation criteria. The preliminary design concepts proposed improvements intended to ensure equitable access to transportation options for all ages and abilities. These improvements include facilities for people walking and bicycling along the project corridors, and suggested connections to and enhancements of the larger network of streets and pathways to allow for safe and comfortable travel by all modes.

4.2.1 10th Street Design Concepts

Two concepts were developed for 10th Street. The network concept, which relies on improvements to cross streets and parallel streets to provide for non-motorized circulation and access, and the complete streets concept, which includes all modes of travel on 10th Street.

Network Concept

The network concept proposes different approaches for the segments north and south of H Street due to the change in curb-to-curb width and the level of interconnectedness of the surrounding street grid. The network concept maintains the existing four travel lanes, but instead of accommodating bicycles for the entirety of the corridor, the concept relies on improvements to cross streets and parallel streets to provide for non-motorized circulation and access south of H Street (see Figure 4-1).

South of H Street, the network concept keeps the existing cross section largely unchanged (see Figure 4-2). The parallel streets, 9th Street and 11th Street, serve as low-stress bicycle routes in the form of bicycle boulevards; low volume and low speed neighborhood streets with signage and pavement markings that indicate to motorists and cyclists alike that the street is to be shared by all modes.

The network concept also proposes connecting to the larger non-motorized network. This could be achieved by designating Campbell Street as a bicycle boulevard between 17th Street and Main Street to create links to the planned SUP along 17th Street to the west and Leo Adler Memorial Parkway to the east. Similarly, designating H Street as a

bicycle boulevard from 17th Street to 8th Drive would create a connection to the planned 17th Street SUP and could create a link to Leo Adler Memorial Parkway with a suggested trail connection around the north end of Baker City High School.

To provide adequate access to destinations on 10th Street, frequent and enhanced crossings would improve the street network's east/west connectivity and minimize out of direction travel for non-motorized travelers.

The network concept proposes to include buffered bicycle lanes on 10th Street between Pocahontas Road/Hughes Lane and H Street (see Figure 4-3). Buffered bicycle lanes can be accommodated within the existing roadway width by slightly narrowing the inside travel lanes. Network Concept Considerations:

- Transition of bicycle traffic from parallel routes south of H Street to on-street north of H Street.
- Concept requires capital investment to pave and improve neighborhood streets to function as bicycle boulevards. Further studies may be needed to identify connections to the larger non-motorized network, including additional designated bicycle boulevards or new pathway links (elements that are beyond the scope of this project and would require additional funding sources to plan, design, and construct).

Figure 4-1. 10th Street Network Concept

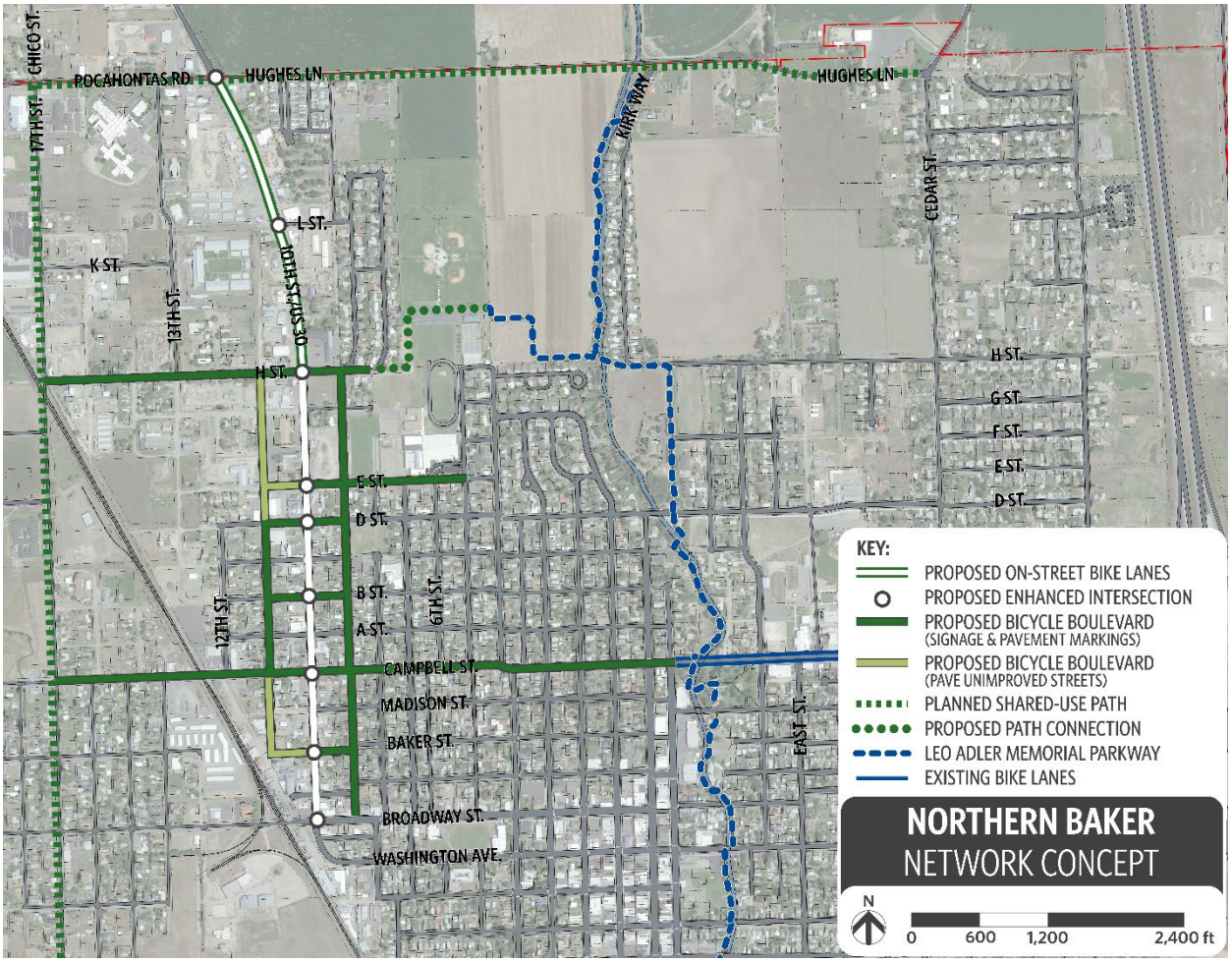


Figure 4-2. Proposed Network Concept Condition South of H Street

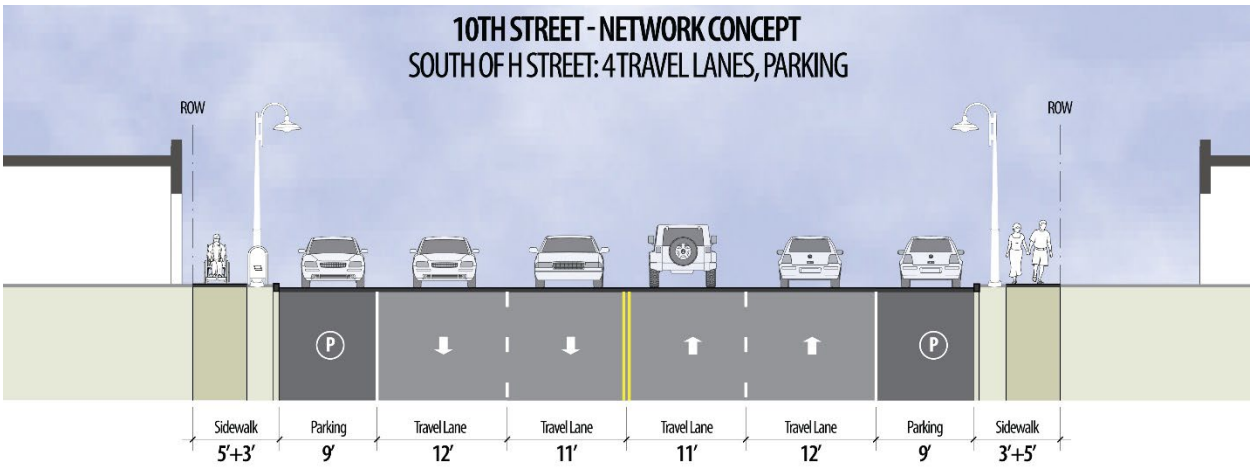
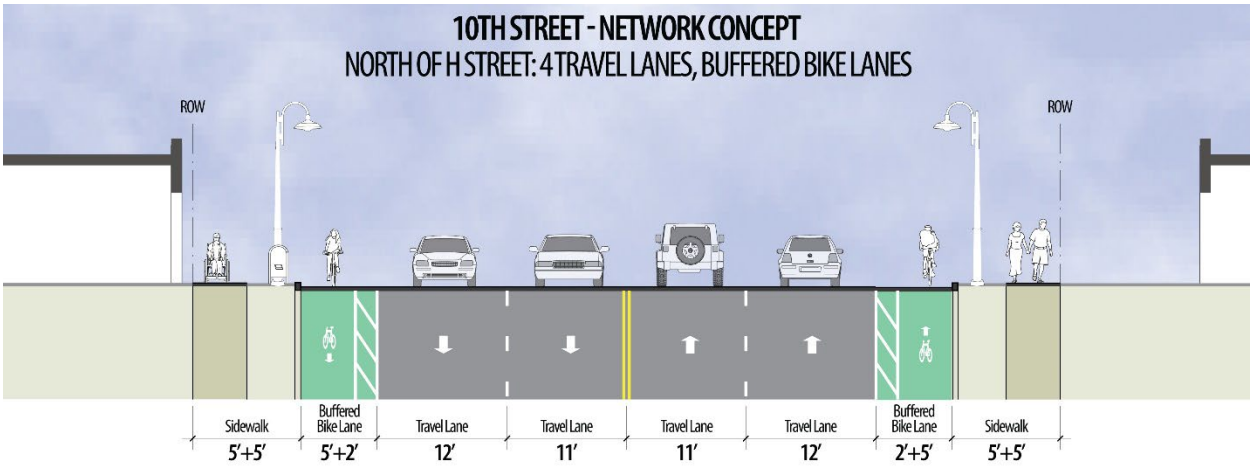


Figure 4-3. Proposed Network Concept Condition North of H Street



Network Concept Evaluation

Table 4-1 provides an initial evaluation of the concept based on the evaluation criteria.

Table 4-1. 10th Street Network Concept Evaluation

	Criteria	Network Concept	Comments
1	Feasibility of implementation	●	Minimal impacts on 10th Street – restriping and intersection improvements; does rely on improving adjacent streets
2	ROW constraints	●	No ROW impacts anticipated
3	Built environment constraints	●	No impacts on 10th Street anticipated; required improvements on adjacent streets may impact access (e.g., on 11th Street between D Street and H Street)
4	Environmental impacts and mitigation	●	No impacts anticipated
5	Conceptual cost estimate	◐	Major cost factors include intersection enhancements and improving adjacent streets; requires additional funding sources
6	Safety and comfort for all modes of travel	◐/○	Lack of direct bike access to destinations on 10th Street south of H Street requires out of direction travel
7	Connectivity across corridor	●	Improved quality and frequency of crossings
8	Level of public and stakeholder support	●	Stakeholders preferred four lane concept
9	Community identity and aesthetics	◐	Largely maintains status quo with some opportunities at enhanced intersections
10	Business vitality/community livability	◐	No measurable change to existing conditions

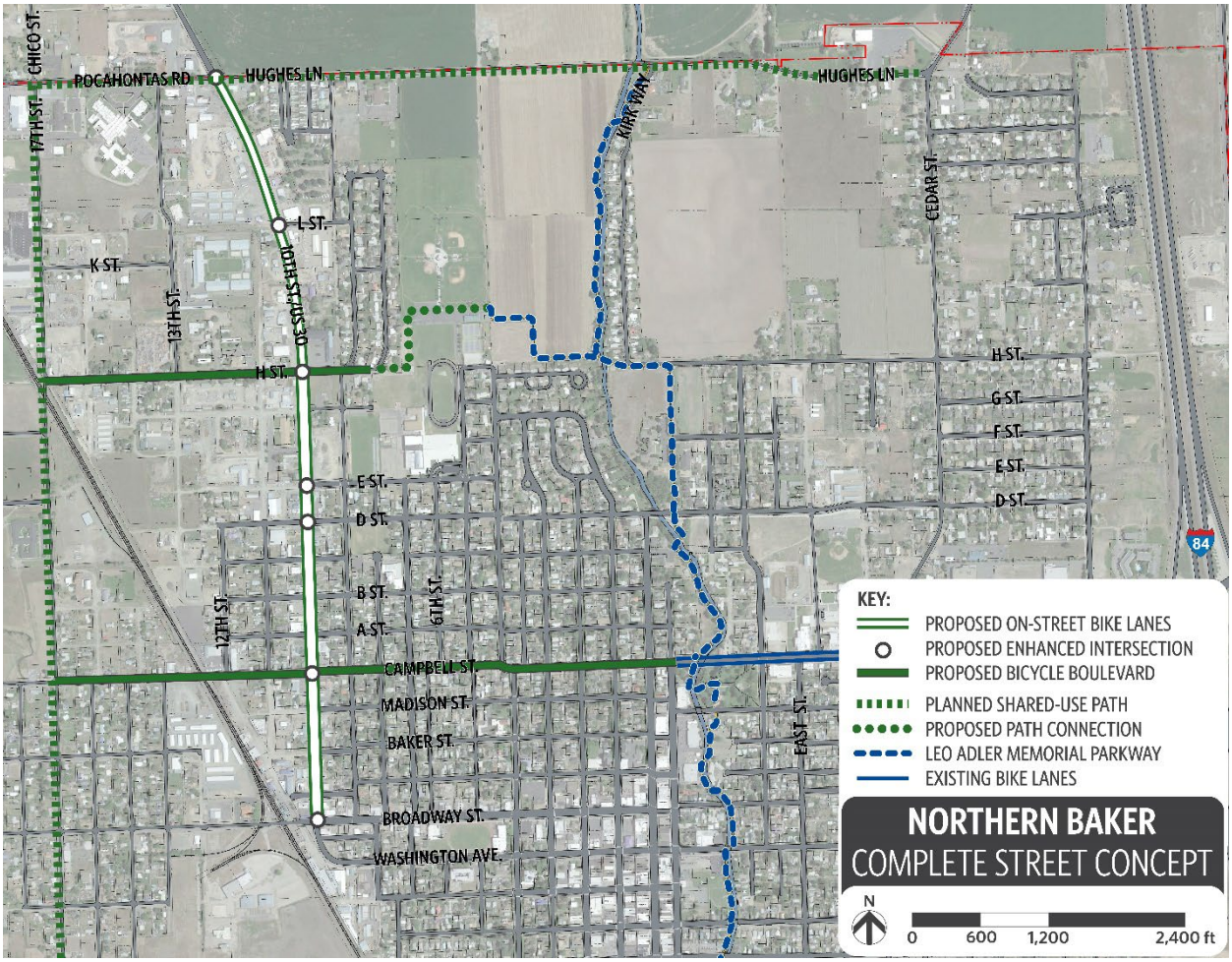
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply

Complete Street Concept

The complete street concept includes all modes of travel on 10th Street and proposes to maintain the existing curb-to-curb distance. Like the network concept, the complete street concept also proposes connections to the larger non-motorized network, which could be achieved by designating H Street and Campbell Street as bicycle boulevards to provide links to the planned 17th Street SUP and Leo Adler Memorial Parkway. Further studies may be needed to identify connections to the larger non-motorized network, including additional designated bicycle boulevards or new pathway links. The complete street concept also proposes enhanced crossings, however at a greater spacing as this concept is less reliant on east/west connectivity than the network concept. Figure 4-4 provides an overview of the proposed improvements and connections.

The complete street concept includes a three-lane cross section with one travel lane in each direction and a center turn lane or left turn lane. Three options of the complete street concept, discussed below, include different bicycle facilities.

Figure 4-4. 10th Street Complete Street Concept



Complete Street Concept - Option 1

This option proposes parking protected bike lanes which are bike lanes located on the curb side of the parking lane placing parked cars as physical barriers between moving traffic and bicyclists. A striped buffer between parked cars and the bike lane provides space for passengers to open the car door and step in or out of the vehicle (see Figure 4-5).

Due to the narrower roadway width north of H Street, this concept proposes parking on one side only, with a buffered bike lane provided on the other side (see Figure 4-6).

COMPLETE STREET CONCEPT - OPTION 1 CONSIDERATIONS:

- Location of parking north of H Street could be on either side of the street and subject to land-use context. Removing parking from one side of the street could have negative impacts to business operators.
- Buffered bike lane north of H Street lacks protection from parked cars. A protective barrier could be added but might complicate maintenance/snow removal.
- Three lane concept is generally not preferred by local business proprietors and property owners on 10th Street north of H Street.

Figure 4-5. Proposed Complete Street Concept - Option 1 Condition South of H Street

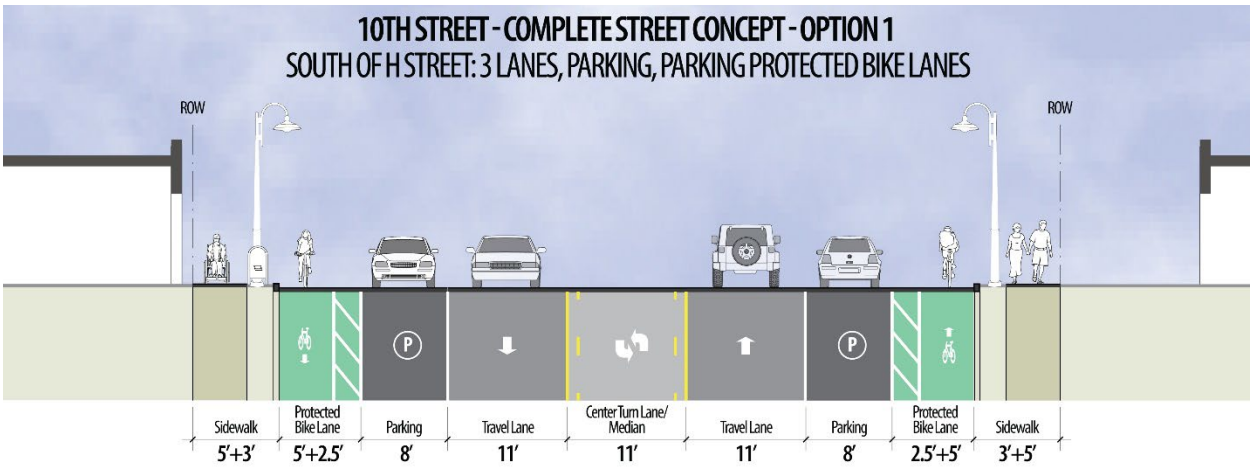
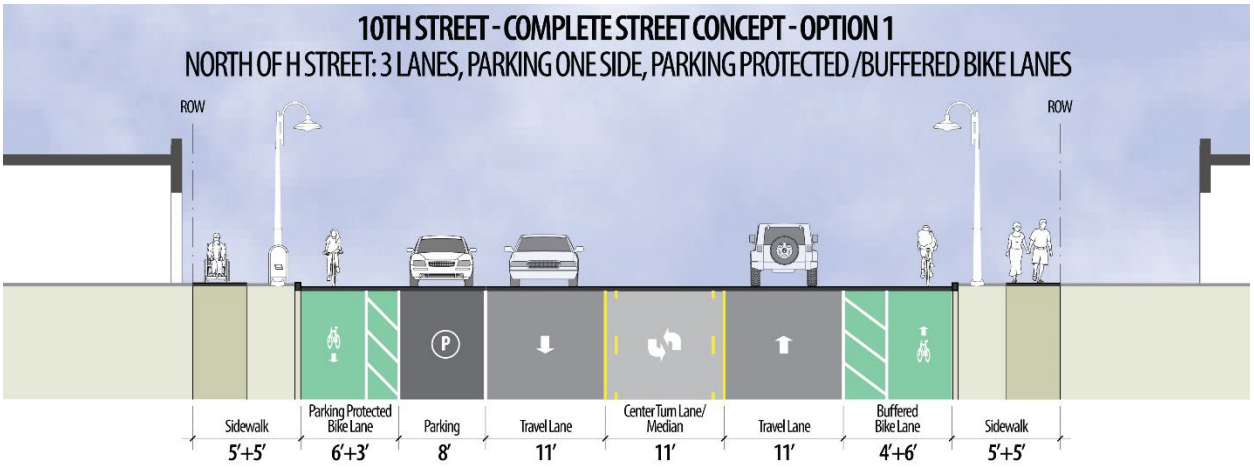


Figure 4-6. Proposed Complete Street Concept - Option 1 Condition North of H Street



Complete Street Concept - Option 2

This option proposes raised bike lanes which are bike lanes physically separated by a low curb located on the curb side of the parking lane. A buffer between parked cars and the raised bike lane provides physical space for passengers to open the car door and step into or out of the vehicle (see Figure 4-7).

Due to the narrower roadway width north of H Street, this concept proposes parking on one side only (see Figure 4-8).

COMPLETE STREET OPTION 2 CONSIDERATIONS

- Stormwater and snow removal to be considered due to the new raised curb line.
- Location of parking north of H Street could be on either side of the street subject to land-use context. Removing parking from one side of the street could have negative impacts to business operators.
- Three lane concept is generally not preferred by local business proprietors and property owners on 10th Street north of H Street.

Figure 4-7. Proposed Complete Street Concept - Option 2 Condition South of H Street

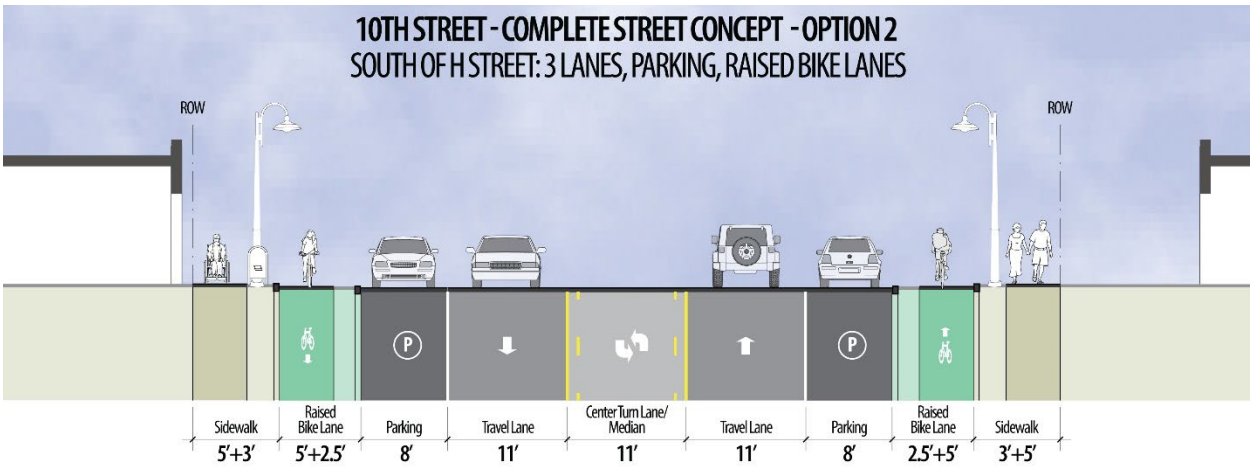
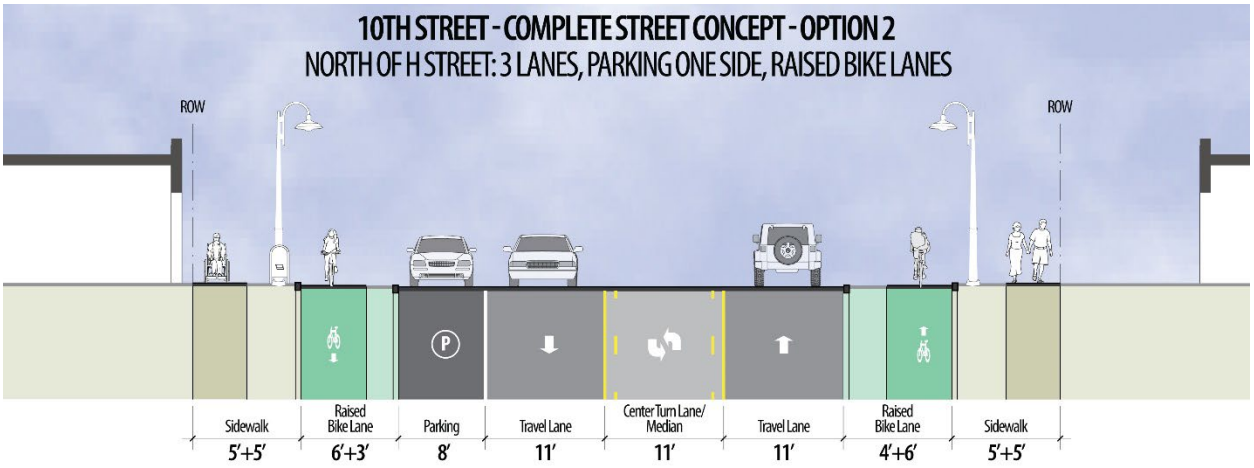


Figure 4-8. Proposed Complete Street Concept - Option 2 Condition North of H Street



Complete Street Concept - Option 3

This option proposes a two-way raised cycle track on the west side of 10th Street. The cycle track would be separated from the roadway by a planted buffer, wide enough to accommodate street trees. South of H Street, parking is provided on both sides (see Figure 4-9), whereas north of H Street, parking would be provided on the east side only (see Figure 4-10).

COMPLETE STREET CONCEPT - OPTION 3 CONSIDERATIONS:

- Intersection and driveway cuts need to be designed to minimize conflicts and alert drivers to expect bicyclists traveling in both directions.
- Intersections need to be designed to facilitate intuitive turn movements of bicyclists and minimize conflicts; treatments may include bike boxes, two-stage turn queue boxes, or protected waiting areas.

- Three lane concept is generally not preferred by local business proprietors and property owners on 10th Street north of H Street.
- Location of parking north of H Street could be on either side of the street subject to land-use context. Removing parking from one side of the street could have negative impacts to business operators.

Figure 4-9. Proposed Complete Street Concept - Option 3 Condition South of H Street

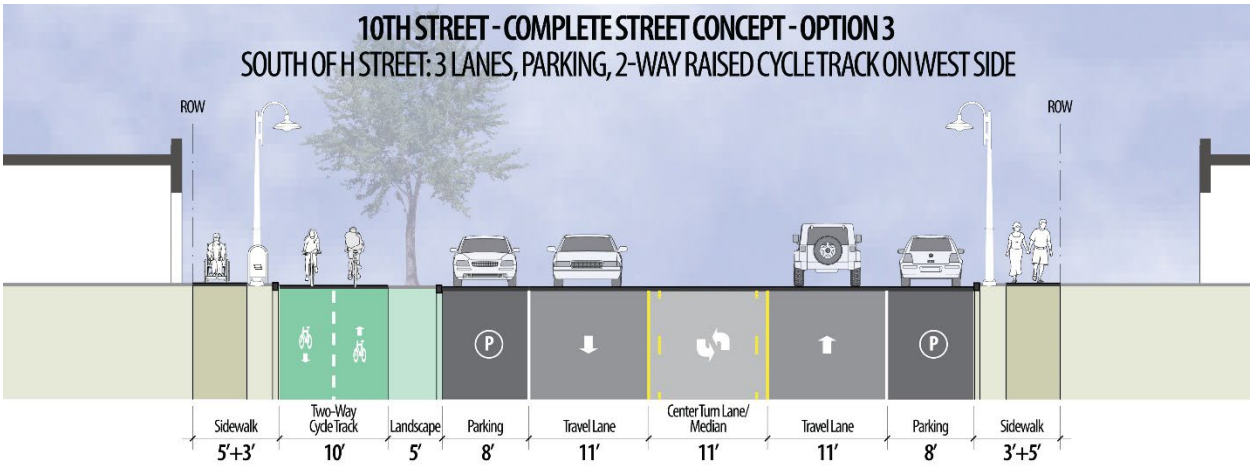
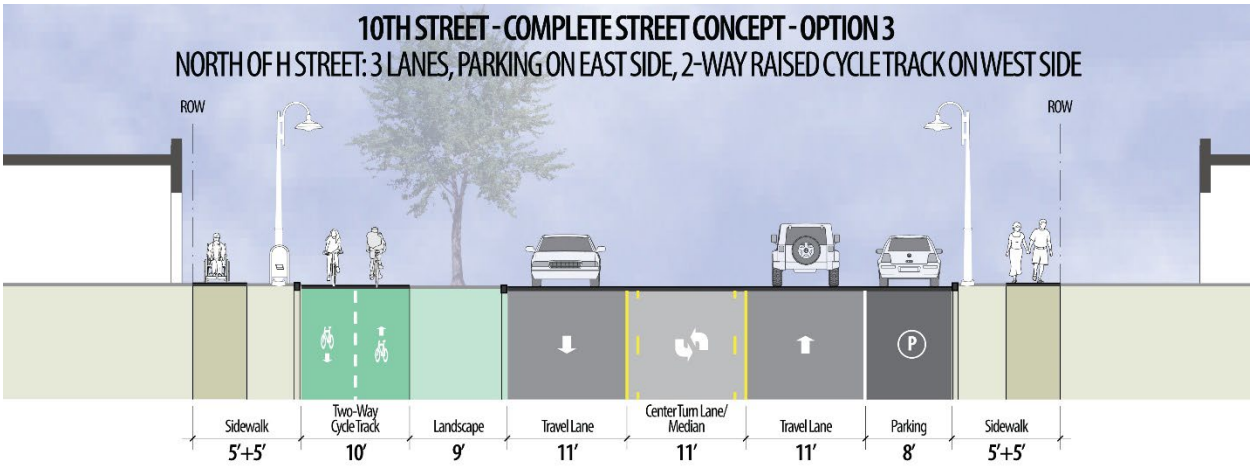


Figure 4-10. Proposed Complete Street Concept - Option 3 Condition North of H Street



Complete Street Concept Evaluation

Table 4-2 provides an initial evaluation of the complete street concept options based on the evaluation criteria.

Table 4-2. 10th Street Complete Street Concept Evaluation

Criteria		Option 1	Option 2	Option 3	Comments
1	Feasibility of implementation	●	◐	◐	Options 2 and 3 require new curbs for raised bike facilities/buffers
2	ROW constraints	●	●	●	No ROW impacts anticipated
3	Built environment constraints	●	●	◐	Constraints to access on west side in Option 3 to be expected
4	Environmental impacts and mitigation	●	●	●	No impacts anticipated; Option 3 allows for addition of street trees
5	Conceptual cost estimate	●	◐	◐	Low cost in Option 1 (restriping); Options 2 and 3 include new curbs with potential implications on stormwater
6	Safety and comfort for all modes of travel	●	●	●	All three options provide significantly enhanced safety and comfort; intersection design will be key
7	Connectivity across corridor	●	●	●	Improved quality and frequency of crossings
8	Level of public and stakeholder support	○	○	○	Three lane concept is not preferred by local business proprietors and property owners on 10th Street north of H Street
9	Community identity and aesthetics	●	●	●	Substantial opportunities for aesthetic enhancements, especially in Option 3
10	Business vitality/community livability	○	○	○	Removing parking from one side of the street could have negative impacts to business operators

Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply

4.2.2 Design Concepts for Cedar Street

Two concepts were developed for Cedar Street.

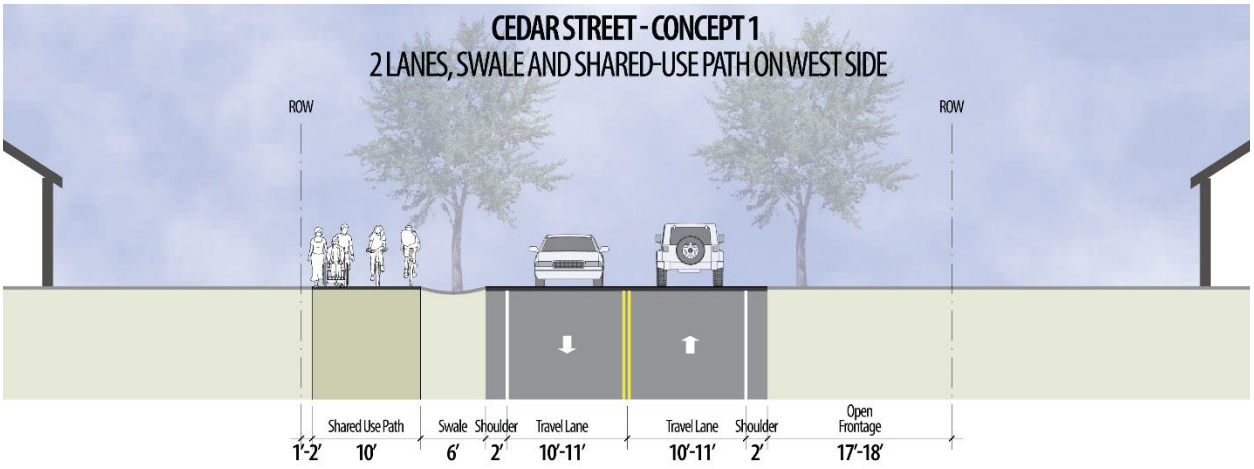
Concept 1

Concept 1 maintains the two-lane cross section and proposes a paved SUP on the west side, separated from the roadway by a landscaped swale (see Figure 4-11).

CONCEPT 1 CONSIDERATIONS:

- Exact location of the existing street centerline within the ROW is unclear; exact roadway location needs to be confirmed to determine the remaining available width.
- Physical obstacles, such as mature trees in the open frontage, may complicate the addition of the path.

Figure 4-11. Proposed Concept 1 Condition



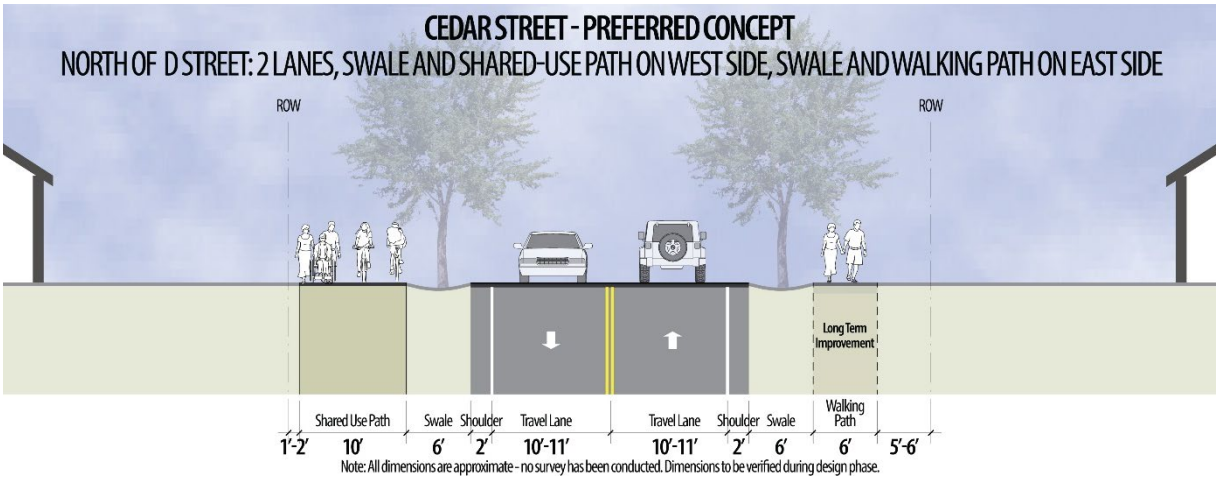
Concept 2

Concept 2 maintains the two-lane cross section and proposes a paved walking path on the east side and includes the paved SUP on the west side proposed in Concept 1. Both paths are separated from the roadway by a landscaped swale (see Figure 4-12).

CONCEPT 2 CONSIDERATIONS:

- Exact location of the existing street centerline within the ROW is unclear; exact roadway location needs to be confirmed to determine the remaining available width.
- Physical obstacles, such as mature trees in the open frontage, may complicate the addition of the paths,

Figure 4-12. Proposed Concept 2 Condition



Cedar Street Concept Evaluation

Table 4-3 provides an initial evaluation of the concept based on the evaluation criteria.

Table 4-3. Cedar Street Concept Evaluation

Criteria		Concept 1	Concept 2	Comments
1	Feasibility of implementation	●	●	Subject to determination of centerline location and physical obstacles
2	ROW constraints	●	●	No or minimal impacts anticipated
3	Built environment constraints	◐	◐	Some impacts may occur where private improvements extend into the ROW
4	Environmental impacts and mitigation	●	●	Some loss of tree canopy anticipated; swales provide opportunity for additional trees/plantings
5	Conceptual cost estimate	●	●	
6	Safety and comfort for all modes of travel	◐	●	Concept 2 provides walking routes on both sides; Concept 1 requires crossing the street
7	Connectivity across corridor	◐	◐	Some intersection enhancements anticipated; locations TBD
8	Level of public and stakeholder support	◐	◐	Concern about possible future walkway on east side of street – possible ROW constraints and mail/garbage access.
9	Community identity and aesthetics	●	●	Swales provide opportunity for street trees and public art
10	Business vitality/community livability	●	●	Improved livability by providing walking/biking amenities
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply				

4.2.3 Hughes Lane/Pocahontas Road Design Concepts

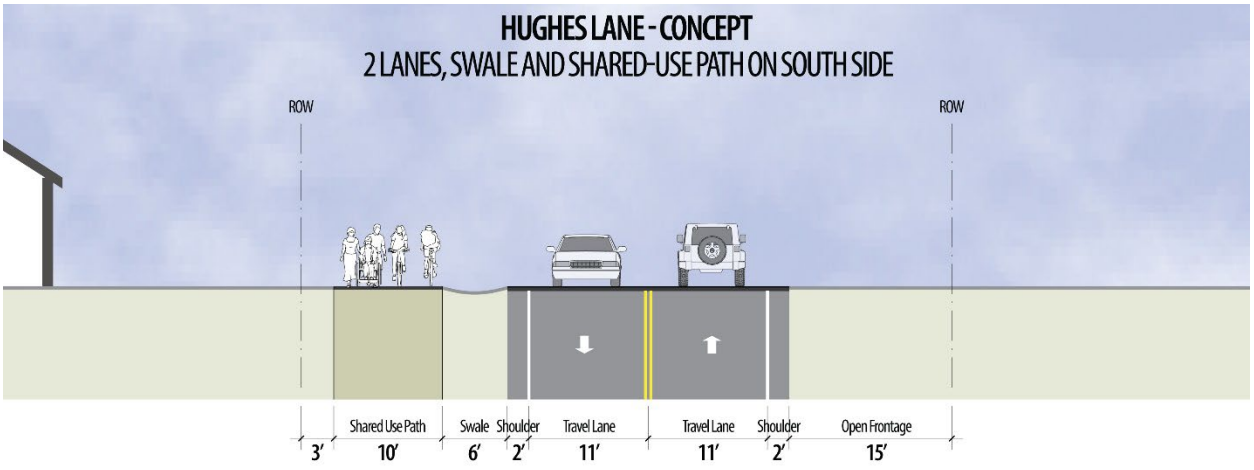
Hughes Lane Concept

The proposed concept maintains the two-lane cross section and includes a paved SUP on the south side, separated from the roadway by a landscaped swale (see Figure 4-13).

CONCEPT CONSIDERATIONS:

- Exact location of the existing street centerline within the ROW is unclear; exact roadway location needs to be confirmed to determine the remaining available width.
- Physical obstacles, such as transmission poles in the open frontage, may complicate the addition of the path.
- The existing bridge crossing the Powder River lacks the width to accommodate the SUP. A new ped/bike bridge across the river has been discussed, and this concept should be designed to connect with the new proposed crossing.

Figure 4-13. Proposed Concept Condition



Hughes Lane Concept Evaluation

Table 4-4 provides an initial evaluation of the concept based on the evaluation criteria.

Table 4-4. Hughes Lane Concept Evaluation

Criteria		Concept	Comments
1	Feasibility of implementation	●	Subject to determination of centerline location and transmission line pole locations
2	ROW constraints	●	No impacts anticipated
3	Built environment constraints	◐	Some impacts may occur where private improvements extend into the ROW
4	Environmental impacts and mitigation	●	Minimal impacts anticipated; the proposed swale would likely be an improvement over existing conditions
5	Conceptual cost estimate	●	Subject to determination of transmission line pole locations
6	Safety and comfort for all modes of travel	●	Provides off-street facility for non-motorized travelers
7	Connectivity across corridor	◐	Minimal change
8	Level of public and stakeholder support	◐	Concern expressed about large vehicle travel and interaction with swale/pathway.
9	Community identity and aesthetics	●	Swales provide opportunity for street trees and public art
10	Business vitality/community livability	●	Improved livability by providing walking/biking amenities
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply			

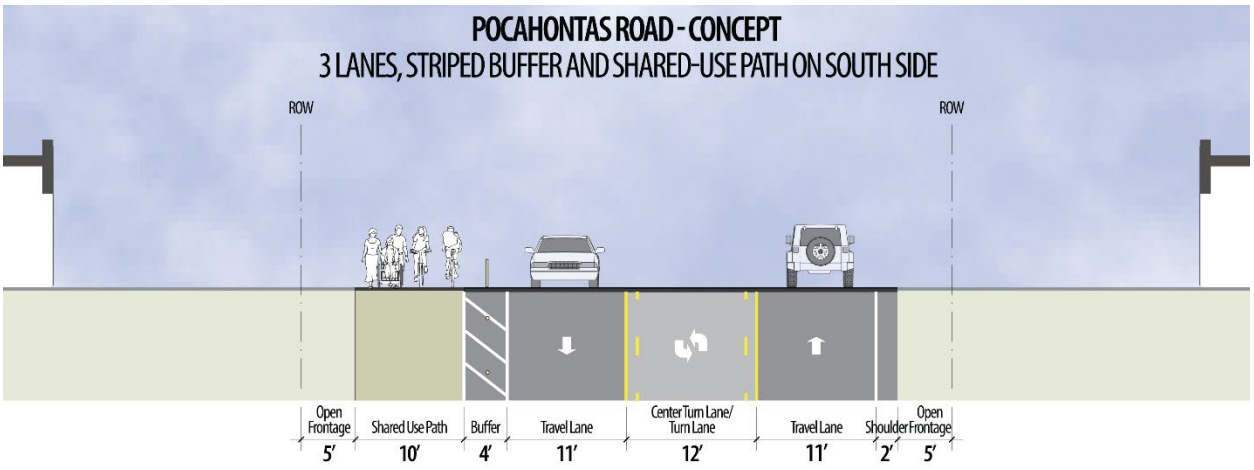
Pocahontas Road Concept

The proposed concept maintains the three-lane cross section, though slightly narrowed and shifted northward, and includes a paved SUP on the south side separated from the roadway by striped buffer enhanced with physical separators, such as delineator posts or concrete curbs (see Figure 4-14).

CONCEPT CONSIDERATIONS:

- Exact location of the existing street centerline within the ROW is unclear; exact roadway location needs to be confirmed to determine the remaining available width.
- Physical obstacles, such as transmission poles in the open frontage, may complicate the addition of the path.
- Enhancements to the striped buffer with physical elements should be considered to enhance comfort and safety of path users. These elements may be permanent or removable barriers or delineators. The desired visual or physical separation of path users from vehicular traffic should be balanced with space requirements of overly wide farming equipment traveling the corridor and path access for snowplows.

Figure 4-14. Proposed Concept Condition



Pocahontas Road Lane Concept Evaluation

Table 4-5 provides an initial evaluation of the concept based on the evaluation criteria established in TM #3.

Table 4-5. Pocahontas Road Concept Evaluation

Criteria		Concept	Comments
1	Feasibility of implementation	●	Subject to determination of centerline location and transmission line pole locations
2	ROW constraints	●	No impacts anticipated
3	Built environment constraints	◐	Some impacts may occur where private improvements extend into the ROW
4	Environmental impacts and mitigation	●	Minimal change
5	Conceptual cost estimate	◐	Subject to determination of transmission line pole locations; requires shifting roadway and restriping to fit the SUP between the roadway and transmission poles
6	Safety and comfort for all modes of travel	◐	Provides facility for non-motorized travelers; comfort and safety subject to additional protective barriers, balanced with space needs of farming equipment
7	Connectivity across corridor	◐	Minimal change
8	Level of public and stakeholder support	◐	Concern expressed regarding snow removal challenges that are created with raised delineators.
9	Community identity and aesthetics	◐	
10	Business vitality/community livability	◐	Modest improvements by providing walking/biking amenities

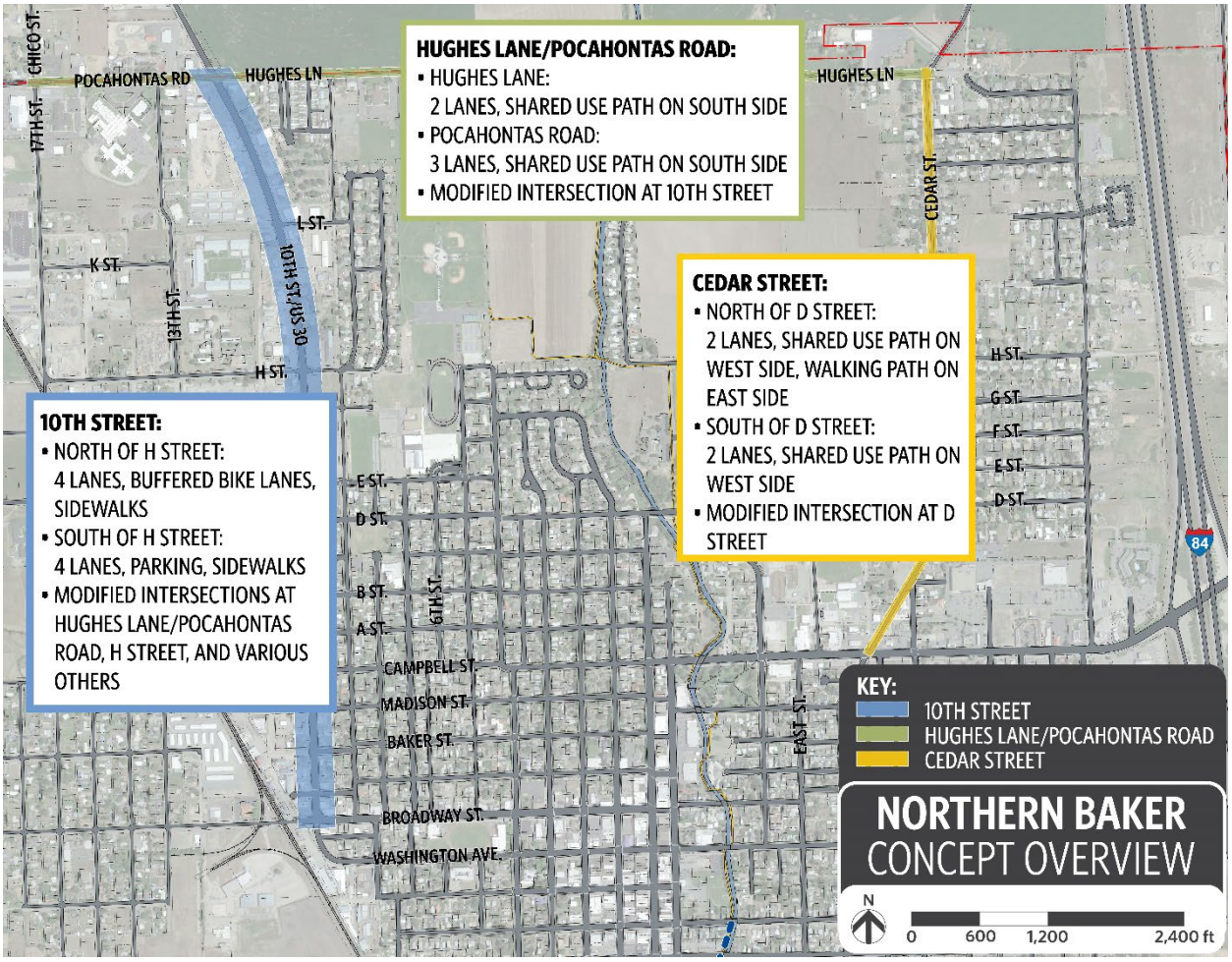
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply

5 Preferred Concepts

The preferred design concepts propose improvements intended to ensure equitable access to transportation options for all ages and abilities while maintaining corridor functions Baker City residents rely on. These concepts include improvements to key intersections, enhanced street crossings, facilities for people walking and bicycling along the project corridors, and suggested connections to and enhancements of the larger network of streets and pathways to allow for safe and comfortable travel by all modes.

Figure 5-1 provides an overview of the preferred design concept proposed for each corridor.

Figure 5-1. Concept Overview



5.1 10th Street Preferred Concept

5.1.1 Preferred Concept Description

Keeping four-lanes on 10th Street is the preferred concept due to stakeholder support, maintaining parking supply and maintaining larger vehicle access preferences. The preferred 10th Street concept proposes different approaches for the segments north and south of H Street due to the different curb-to-curb width and the level of interconnectedness of the surrounding street grid. The concept maintains the existing four travel lanes for the entirety of the corridor. Final plans for the corridor will incorporate accommodations for turning movements and through travel movements of large truck and farm vehicles which regularly use the corridor. Bicycles are accommodated on 10th Street north of H Street while south of H Street, the concept proposes that 9th Street serve as low-stress bicycle route in the form of a bicycle boulevard; a low volume and low speed neighborhood street with signage and pavement markings that indicate to motorists and cyclists alike that the street is to be shared by all modes.

The concept also proposes connecting to the larger existing and planned non-motorized network (see Figure 5-2). This could be achieved by designating Campbell Street as a bicycle boulevard (similar to Baker City's neighborhood route designation) between 17th Street and Main Street to create links to the planned SUP along 17th Street to the west and Leo Adler Memorial Parkway to the east. Similarly, designating H Street as a bicycle boulevard from 17th Street to 8th Drive would create a connection to the planned 17th Street SUP and could create a link to Leo Adler Memorial Parkway with a suggested trail connection around the north end of Baker City High School. It should be noted that the proposed improvements to the local street and path network would not be funded and implemented as part of this project.

The concept proposes to include buffered bicycle lanes on 10th Street between Pocahontas Road/Hughes Lane and H Street (see Figure 5-3 and Figure 5-5). Buffered bicycle lanes can be accommodated within the existing roadway width by slightly narrowing the inside travel lanes. South of H Street, the preferred concept keeps the existing cross section of 10th Street largely unchanged (see Figure 5-4 and Figure 5-6).

To provide adequate access to destinations on 10th Street, frequent and enhanced crossings would improve the street network's east/west connectivity and minimize out of direction travel for non-motorized travelers. To provide enhanced crossings, the preferred concept proposes modifications to several intersections along 10th Street, as identified in Figure 5-4. Any enhancements will accommodate turning radius requirements of large vehicles.

It should be noted that while the preferred concept maintains the current four-lane cross section, ODOT has expressed an interest in a design solution that allows for a potential future conversion to a three-lane roadway. As explored during the evaluation phase, the three-lane section would offer safety benefits, particularly for pedestrians, and current and projected traffic volumes could well be accommodated with three lanes without causing any delay for motorists.

Figure 5-2. 10th Street Concept – Network Connectivity

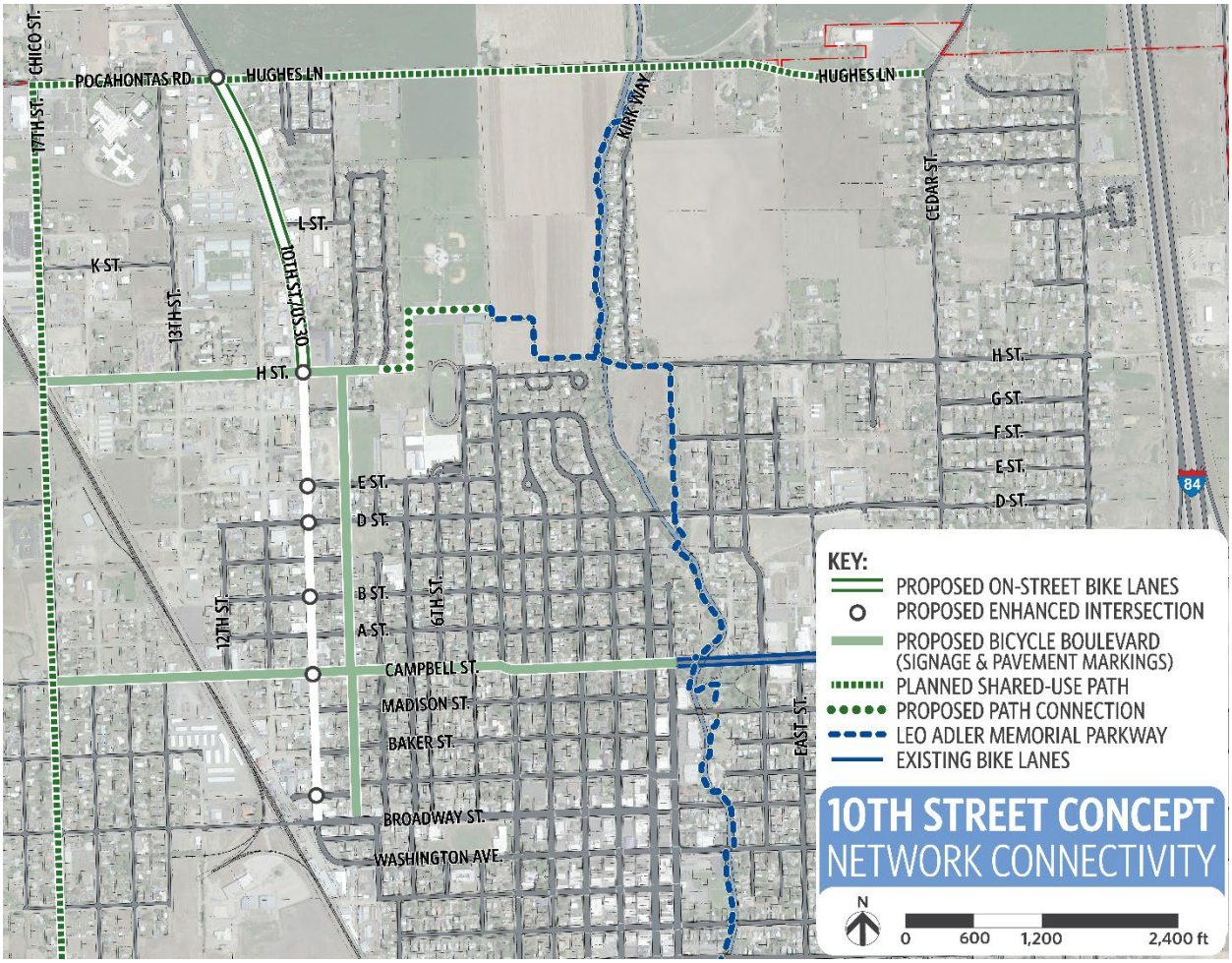


Figure 5-3. 10th Street Concept – North Segment

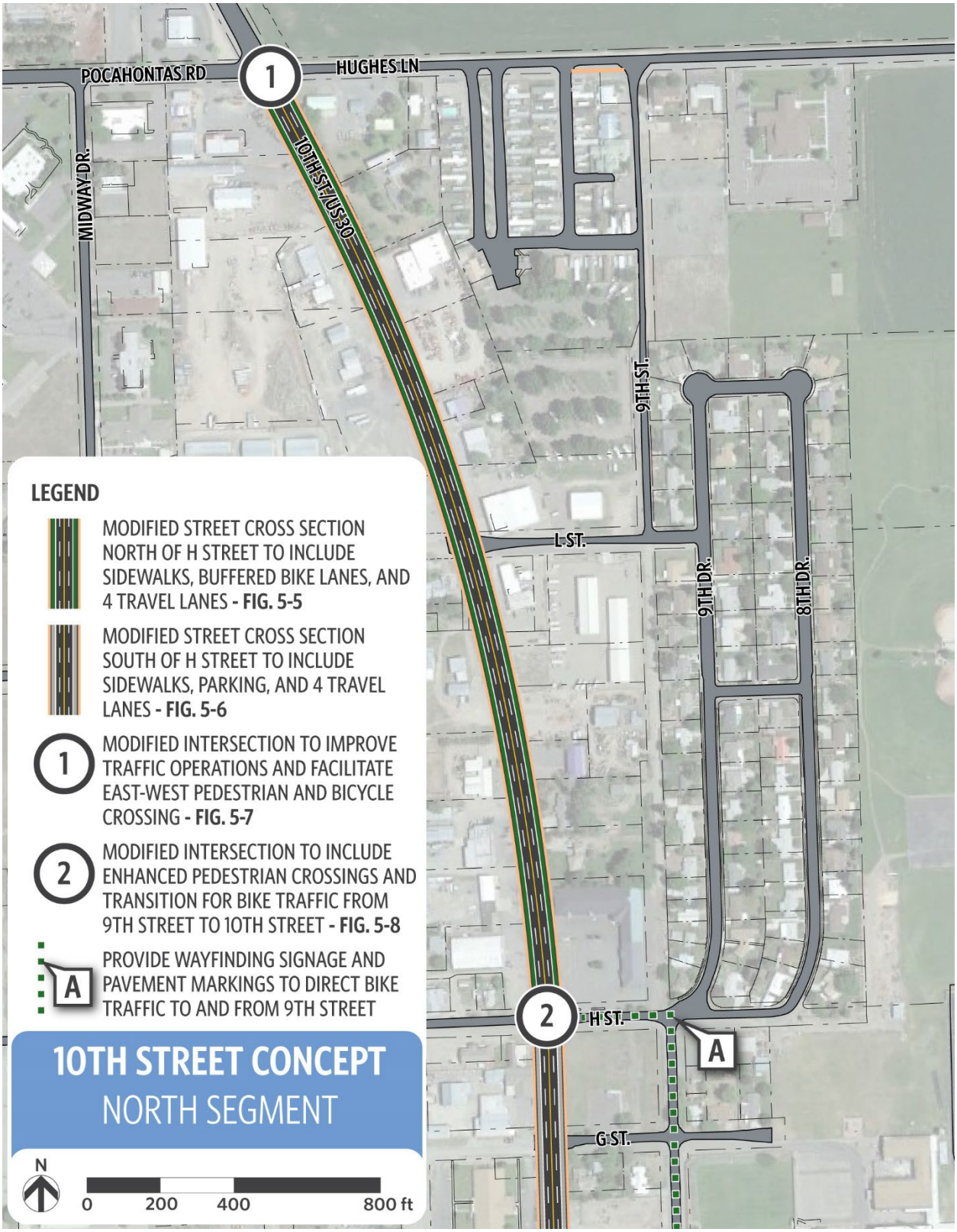


Figure 5-4. 10th Street Concept – South Segment

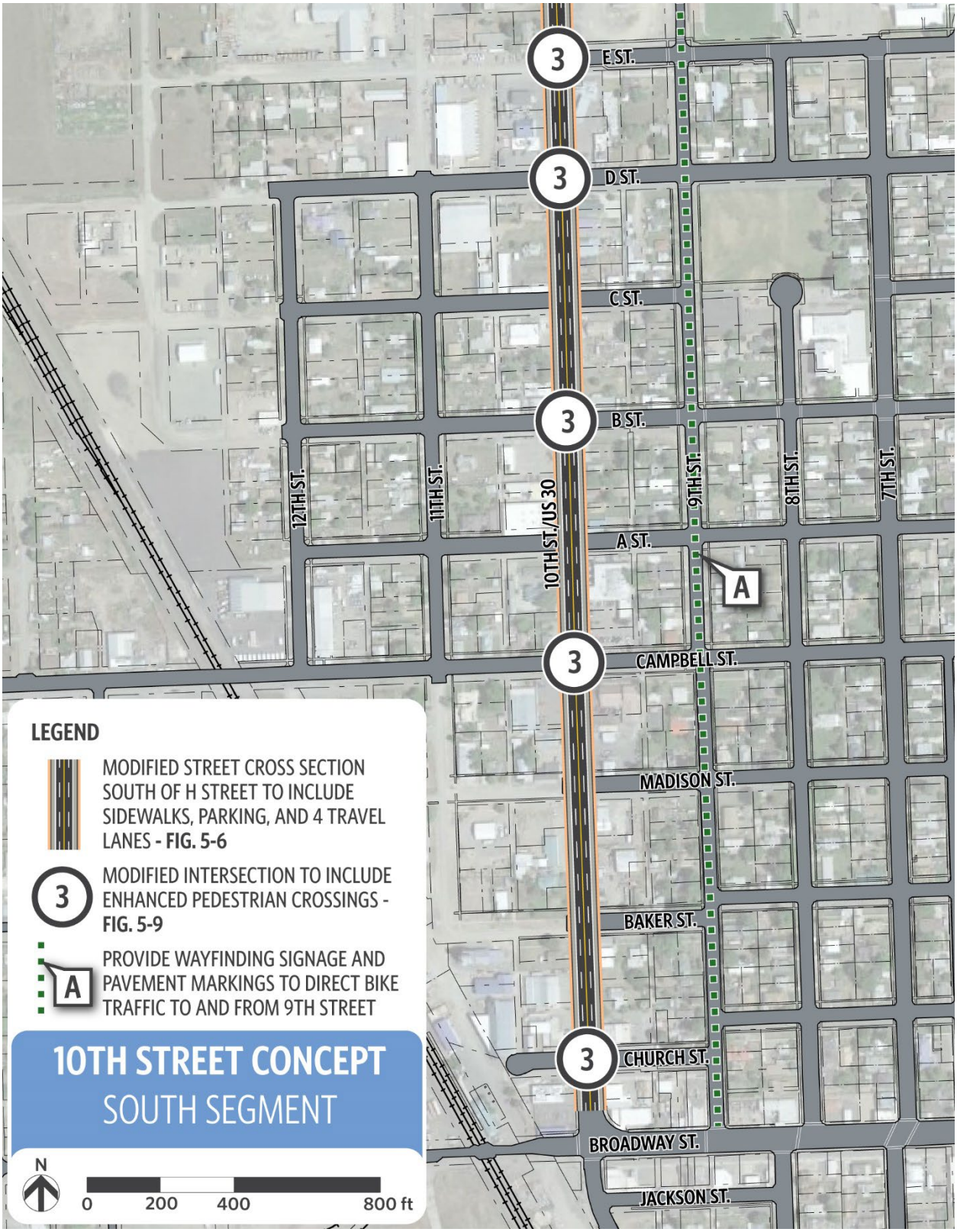


Figure 5-5. Proposed Typical Condition North of H Street

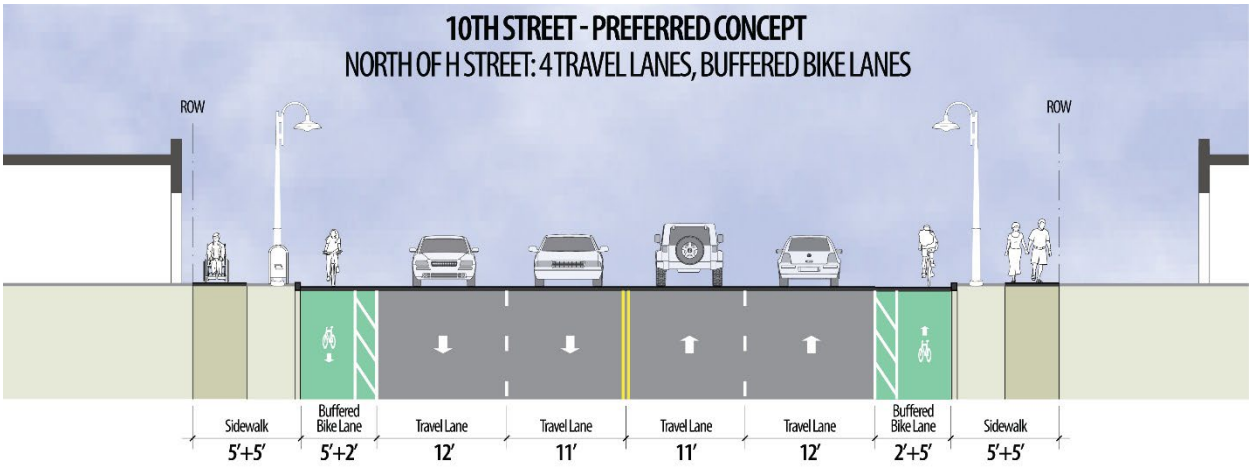
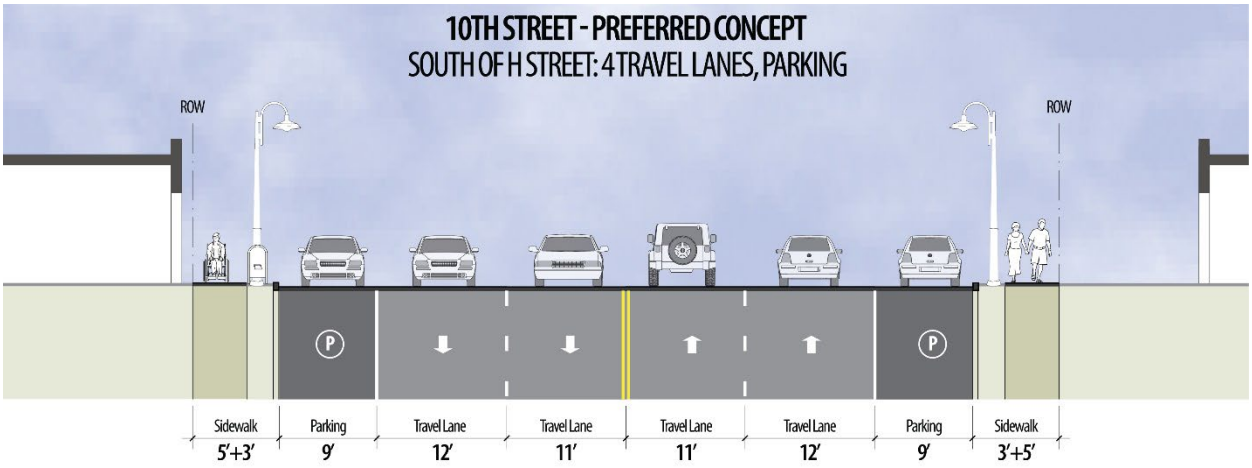


Figure 5-6. Proposed Typical Condition South of H Street



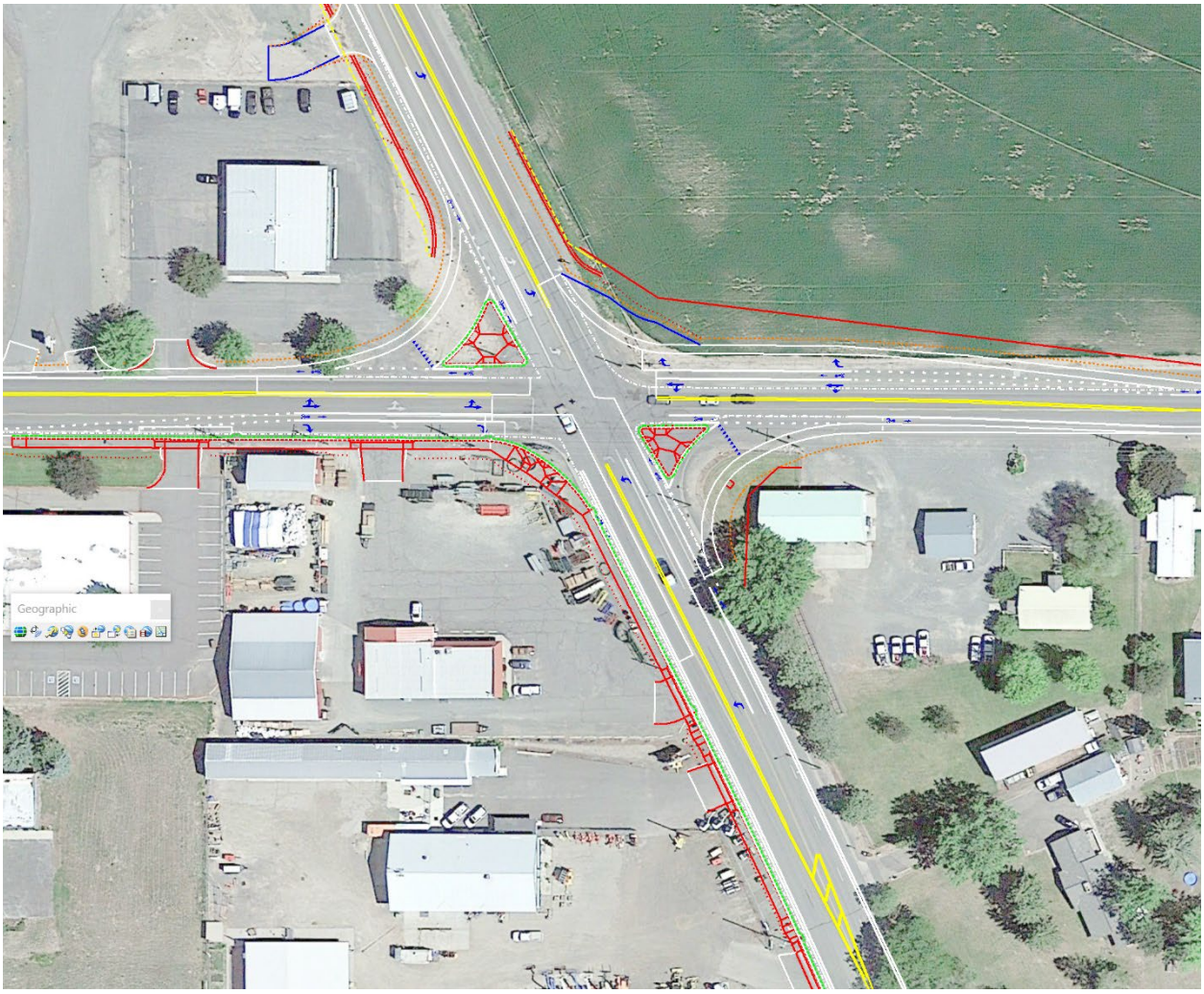
5.1.2 Proposed Intersection Modifications

10th Street/Pocahontas Road/Hughes Lane (ODOT provided)

Figure 5-7 shows the proposed intersection modifications at 10th Street/Pocahontas Road/Hughes Lane. The proposed design includes adding right turn lanes to both directions of Hughes/Pocahontas as well as right turn lanes with pedestrian refuges north and southbound on 10th Street/US 30. The intersection will also be restriped to add a left turn lane from southbound US 30 to eastbound Hughes Lane. The intersection will be designed to accommodate large vehicles while still addressing ODOT's ADA settlement requirements and will accommodate bike traffic on all approaches. The intersection will remain stop controlled for the east and westbound movements. A roundabout is not being considered at this location. In addition, a traffic signal is not warranted at this time; however, the intersection will be designed to readily accommodate a signal if it becomes warranted. It is recommended that the City and County monitor conditions at this location over time to verify if/or when a traffic signal becomes warranted. It is also recommended

that signs be installed on Hughes/Pocahontas indicating that “Crossing Traffic Does Not Stop”.

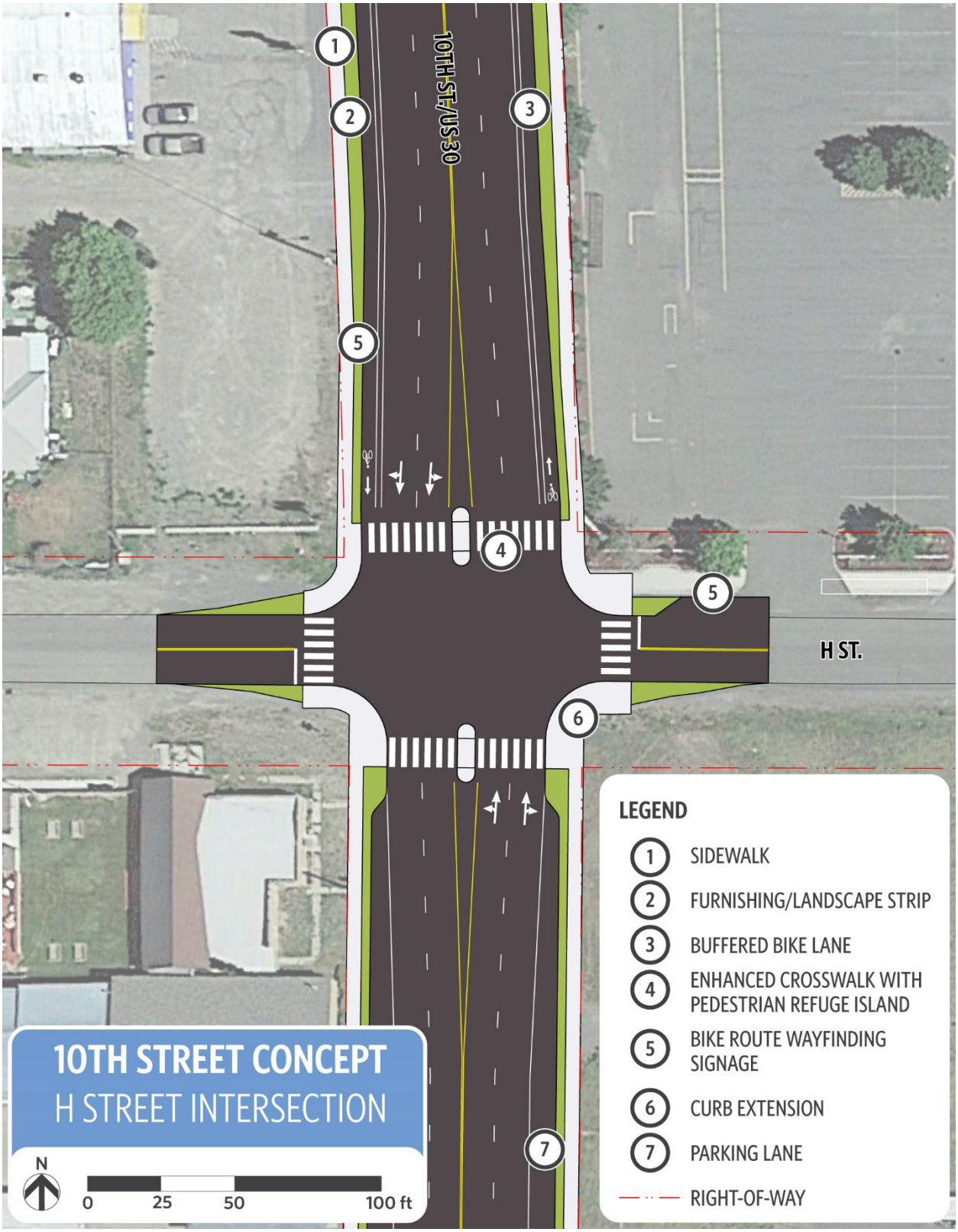
Figure 5-7. 10th Street Concept – Intersection Modification at Hughes Lane/Pocahontas Road



10th Street/H Street

Figure 5-8 shows the proposed intersection modifications at H Street. The proposed design may include pedestrian refuge islands and continental style crosswalks to facilitate the crossing of 10th Street for pedestrians and bicyclists as they transition from the bike lanes north of H Street to using 9th Street as a designated route south of H Street. To minimize crossing distances, the design includes curb extensions at the southern leg. Wayfinding signage would direct bicyclists approaching the intersection from the north to use the crossing at H Street and continue southbound on 9th Street. Wayfinding signage may also direct cyclists approaching from the east on H Street. The proposed design would have minimal ROW impacts in the northwest and northeast quadrants. ODOT recommends median refuges be designed with a width of 6 to 8-feet. In order to accommodate this, some ROW would need to be acquired in the two northern quadrants of the intersection.

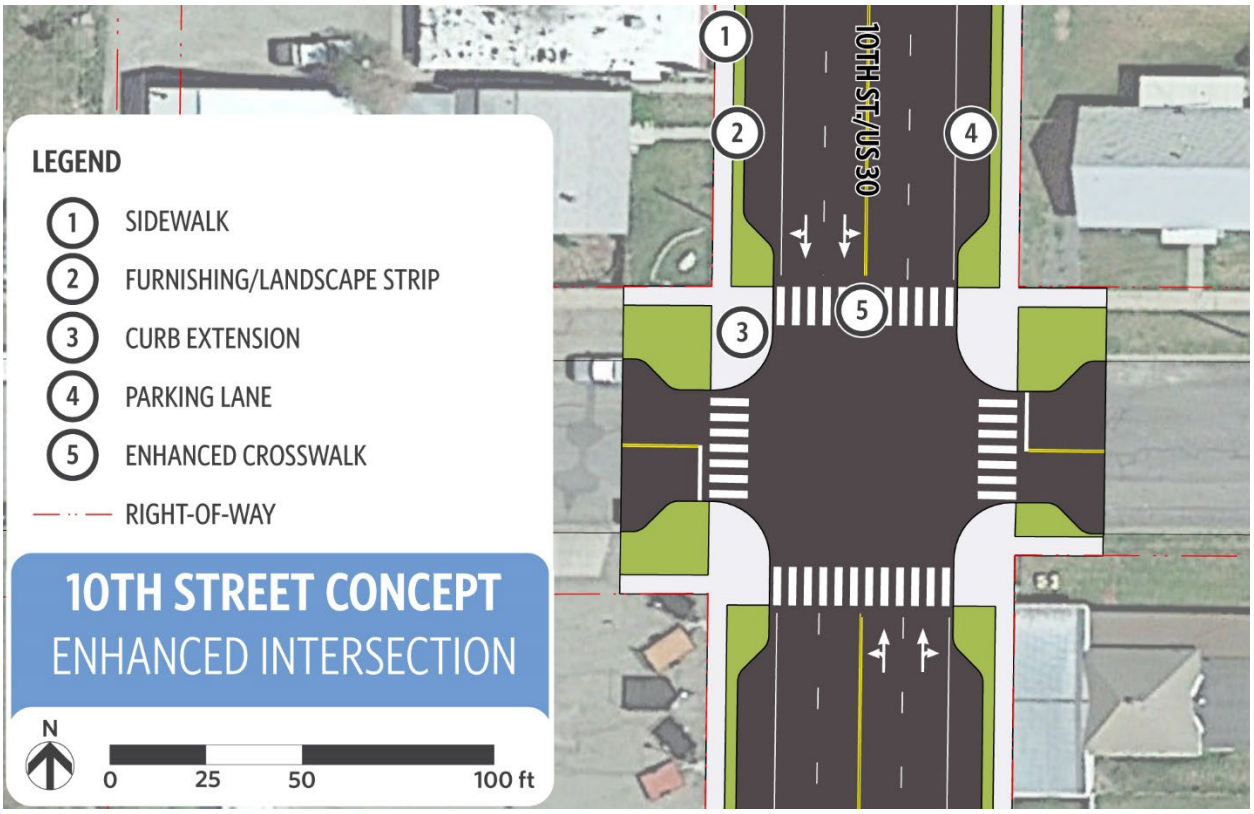
Figure 5-8. 10th Street Concept – Intersection Modification at H Street



10th Street/Typical Intersection

Figure 5-9 shows the proposed intersection modifications for typical enhanced intersections. These improvements are primarily intended to facilitate east-west crossings of 10th Street, and are proposed to be implemented at E Street, D Street, B Street, Campbell Street, and Church Street, though considerations such as snow removal should be balanced with pedestrian access and safety in the final decision about the number and locations of enhanced intersections. The proposed design may include curb extensions on all four corners to minimize crossing distances, continental style marked crosswalks, and signage alerting motorists. Campbell Street improvements may include upgrading the signals with both a pedestrian countdown timer with a leading pedestrian interval. The countdown timer upgrade would require replacing the existing pedestrian signal head. The leading pedestrian interval would take additional investigation during the project's design phase to confirm the model of signal controller to properly gauge upgrade scope and costs. The proposed improvements would not require any additional ROW.

Figure 5-9. 10th Street Concept – Typical Enhanced Intersection Modification



5.1.3 Concept Evaluation

Table 5-1 provides an evaluation of the concept based on the evaluation criteria.

Table 5-1. 10th Street Concept Evaluation

Criteria		Preferred Concept	Comments
1	Feasibility of implementation	●	Minimal impacts on 10th Street – restriping and intersection improvements; does rely on signing and pavement markings on 9th Street
2	ROW constraints	●	No ROW impacts anticipated to accommodate proposed cross sections; minimal ROW impacts possible near the H Street intersection; modest impacts expected to accommodate the Hughes Lane/Pocahontas Road intersection modifications
3	Built environment constraints	●	No impacts anticipated
4	Environmental impacts and mitigation	●	No impacts anticipated
5	Conceptual cost estimate	◐	Major cost factors include intersection enhancements and signing and pavement markings on 9th Street
6	Safety and comfort for all modes of travel	◐	Improved/completed sidewalks along the entire corridor provides pedestrian access; lack of direct bike access to destinations on 10th Street south of H Street requires out of direction travel
7	Connectivity across corridor	●	Improved quality and frequency of crossings
8	Level of public and stakeholder support	●	General community and stakeholder sentiment supports maintaining the existing four travel lanes.
9	Community identity and aesthetics	◐	Largely maintains status quo with some opportunities at enhanced intersections
10	Business vitality/community livability	◐	No measurable change to existing conditions
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply			

5.2 Cedar Street Preferred Concept

5.2.1 Preferred Concept Description

The preferred concept maintains the two-lane cross section. North of D Street, the preferred concept proposes a paved walking path on the east side and a paved SUP on the west side. Both paths are separated from the roadway by a landscaped swale. South of D Street, the concept proposes the SUP on the west side and, to provide enhanced pedestrian access to NEO Transit and the Community Connection Senior Center, a walking path on the east side south to the driveway of those institutions. The walking path ends at the NEO Transit and Community Connection Senior Center. Additional study will be needed to determine how the walking path might impact existing private improvements encroaching into the ROW. Where the SUP meets with cross streets, marked crossings should be provided.

Figure 5-10 and Figure 5-11 present the proposed improvements for the northern and southern segment of the corridor respectively. The proposed typical street cross sections are shown in Figure 5-12 and Figure 5-13.

Figure 5-10. Cedar Street Concept – North Segment

Figure 5-11. Cedar Street Concept – South Segment

Figure 5-12. Preferred Concept - Condition North of D Street

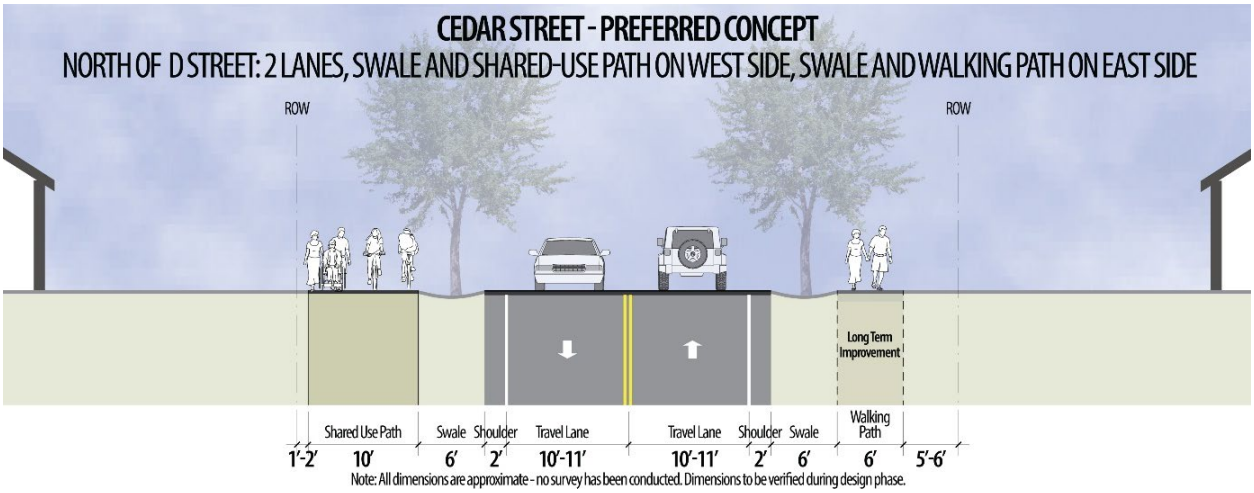
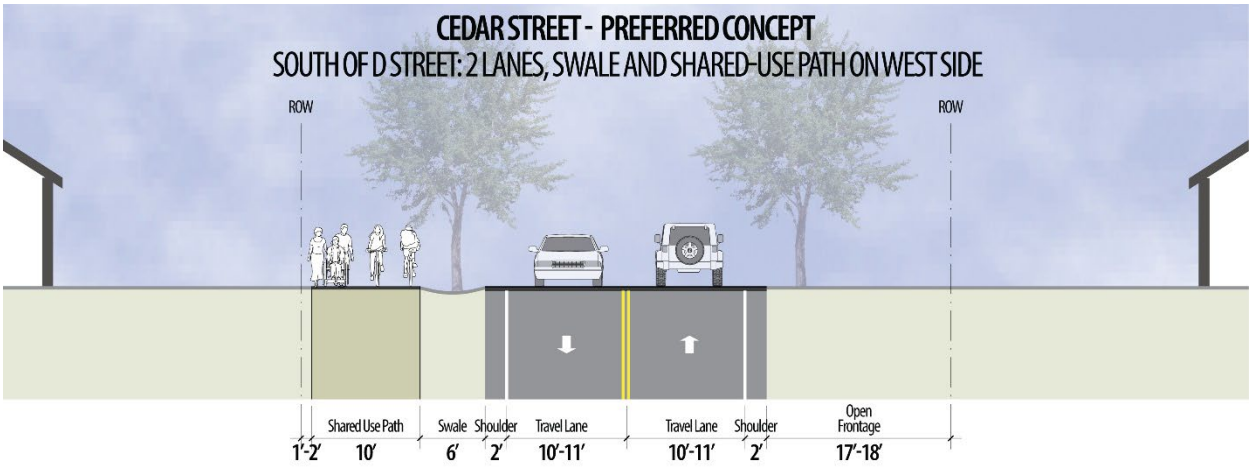


Figure 5-13. Preferred Concept - Condition South of D Street

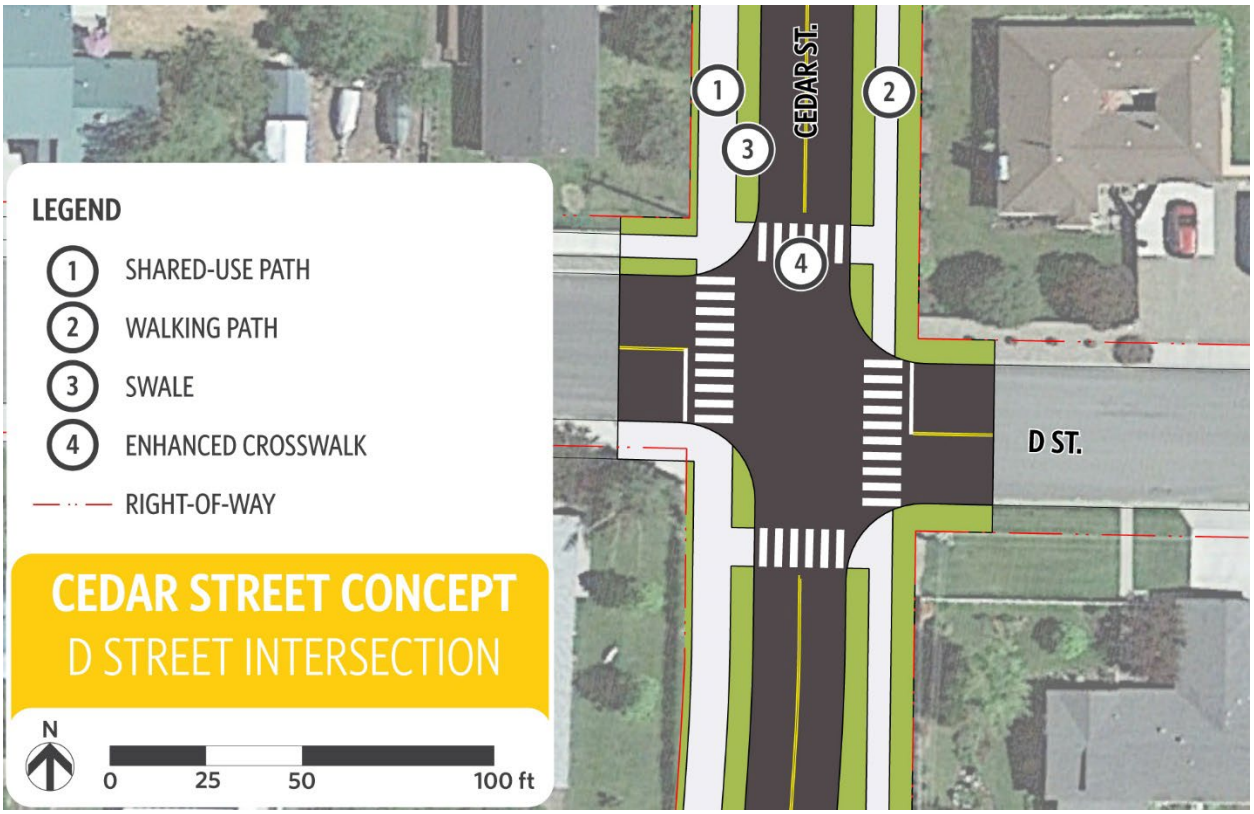


5.2.2 Proposed Intersection Modifications

Cedar Street/D Street

Figure 5-14 shows the proposed intersection modifications at D Street. The proposed intersection design includes continental crosswalks to facilitate the crossing of D Street for travelers using the proposed SUP along the west side or the proposed walking path on the east side of Cedar Street. The design also includes continental crosswalks to facilitate the crossing of Cedar Street for travelers using the existing SUP along the south side or the existing sidewalk on the north side of D Street.

Figure 5-14. Cedar Street Concept – Intersection of Cedar Street and D Street



5.2.3 Concept Evaluation

Table 5-2 provides an evaluation of the preferred concept based on the evaluation criteria.

Table 5-2. Cedar Street Concept Evaluation

Criteria		Preferred Concept	Comments
1	Feasibility of implementation	●	Subject to determination of centerline location and physical obstacles
2	ROW constraints	●	No or minimal impacts anticipated
3	Built environment constraints	◐	Some impacts may occur where private improvements extend into the ROW
4	Environmental impacts and mitigation	●	Some loss of tree canopy anticipated; swales provide opportunity for additional trees/plantings
5	Conceptual cost estimate	●	Major cost factors include intersection enhancements at D Street
6	Safety and comfort for all modes of travel	●/◐	Walking routes on both sides north of D Street; South of D Street eastside access requires crossing Cedar Street
7	Connectivity across corridor	◐	Intersection enhancements at D Street are proposed to facilitate east-west crossings
8	Level of public and stakeholder support	●	General community and stakeholder sentiment supports adding the SUP on the west side, while some also support the east side walkway
9	Community identity and aesthetics	●	Swales provide opportunity for street trees and public art
10	Business vitality/community livability	●	Improved livability by providing walking/biking amenities
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply			

5.3 Hughes Lane/Pocahontas Road Preferred Concepts

5.3.1 Preferred Concept Description

The preferred Pocahontas Road concept maintains the three-lane cross section, though slightly narrowed and shifted northward, and includes a paved SUP on the south side separated from the roadway by a striped buffer. The addition of physical separators to the striped buffer should be considered to enhance comfort and safety of path users. These separators may be permanent or removable barriers or delineators, such as delineator posts or concrete curbs. The desired visual or physical separation of path users from vehicular traffic should be balanced with space requirements of overly wide farming equipment traveling the corridor and path access for snowplows. Where the SUP meets with cross streets, marked crossings should be provided.

The preferred Hughes Lane concept maintains the two-lane cross section and includes a paved SUP on the south side, separated from the roadway by a landscaped swale. Where the SUP meets with cross streets, primarily at Kirkway Street, a marked crossing should be provided.

Figure 5-15, Figure 5-16, and Figure 5-17 present the proposed improvements for the western, central, and eastern segment of the corridor, respectively. The proposed typical street cross section for Pocahontas Road is shown in Figure 5-18, while the proposed typical street cross section for Hughes Lane is shown in Figure 5-19.

Figure 5-15. Pocahontas Road/Hughes Lane Concept – West Segment

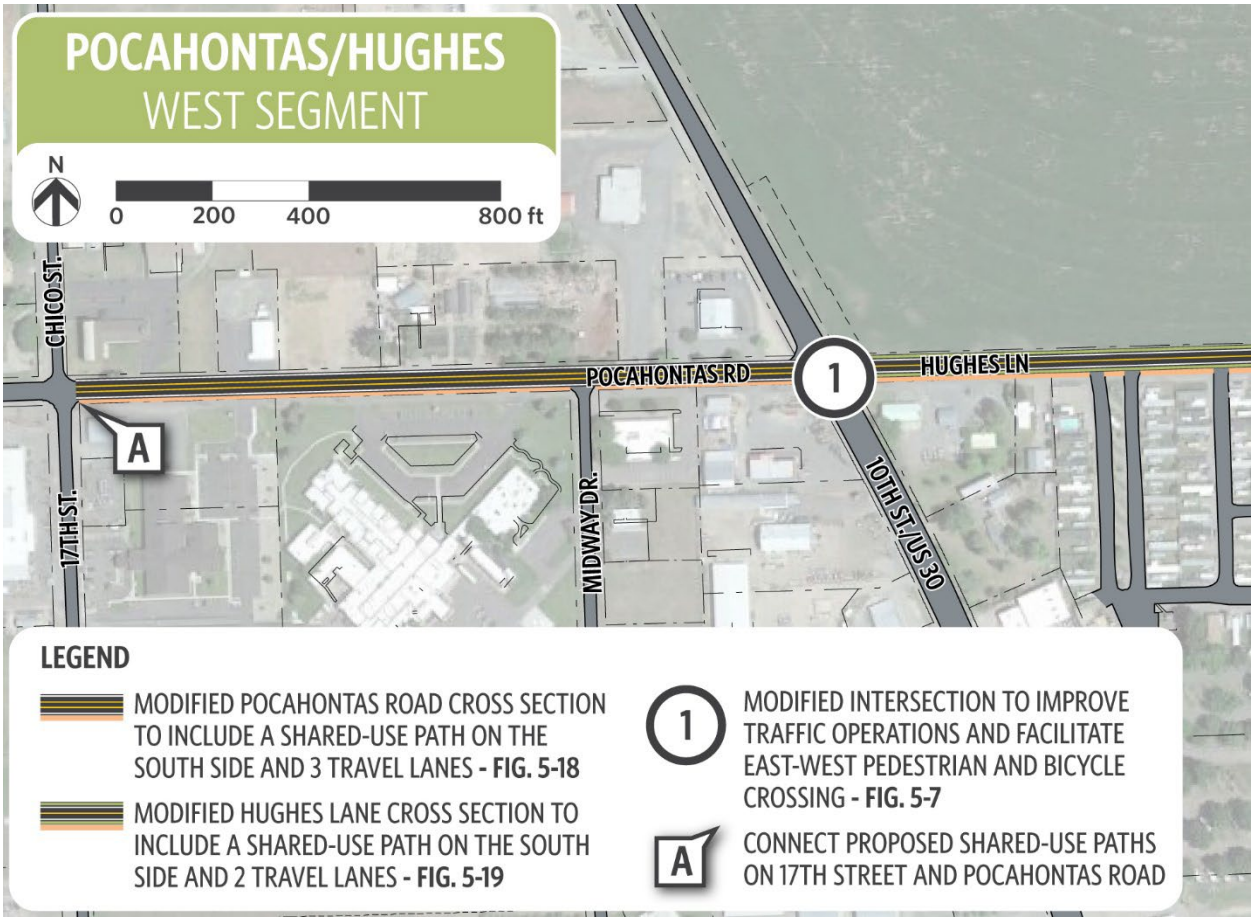


Figure 5-16. Pocahontas Road/Hughes Lane Concept – Center Segment

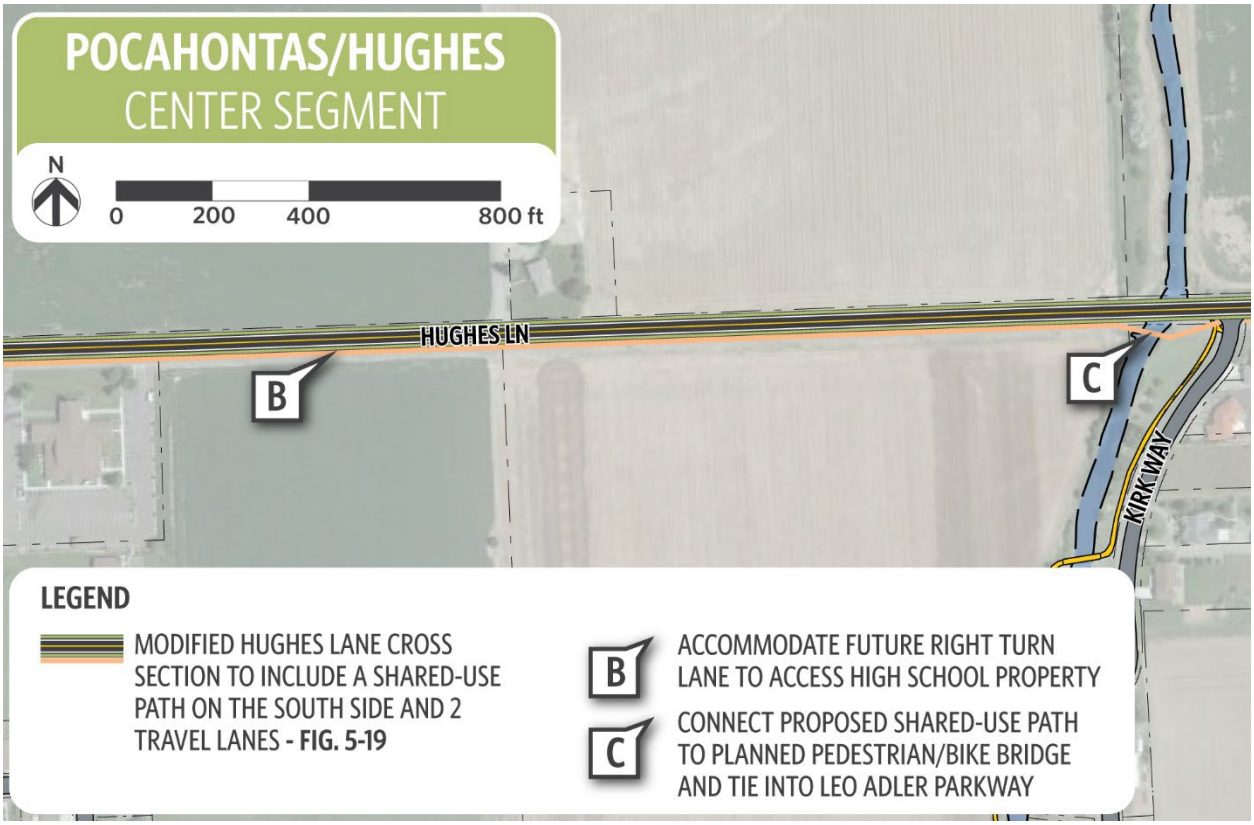


Figure 5-17. Pocahontas Road/Hughes Lane Concept – East Segment

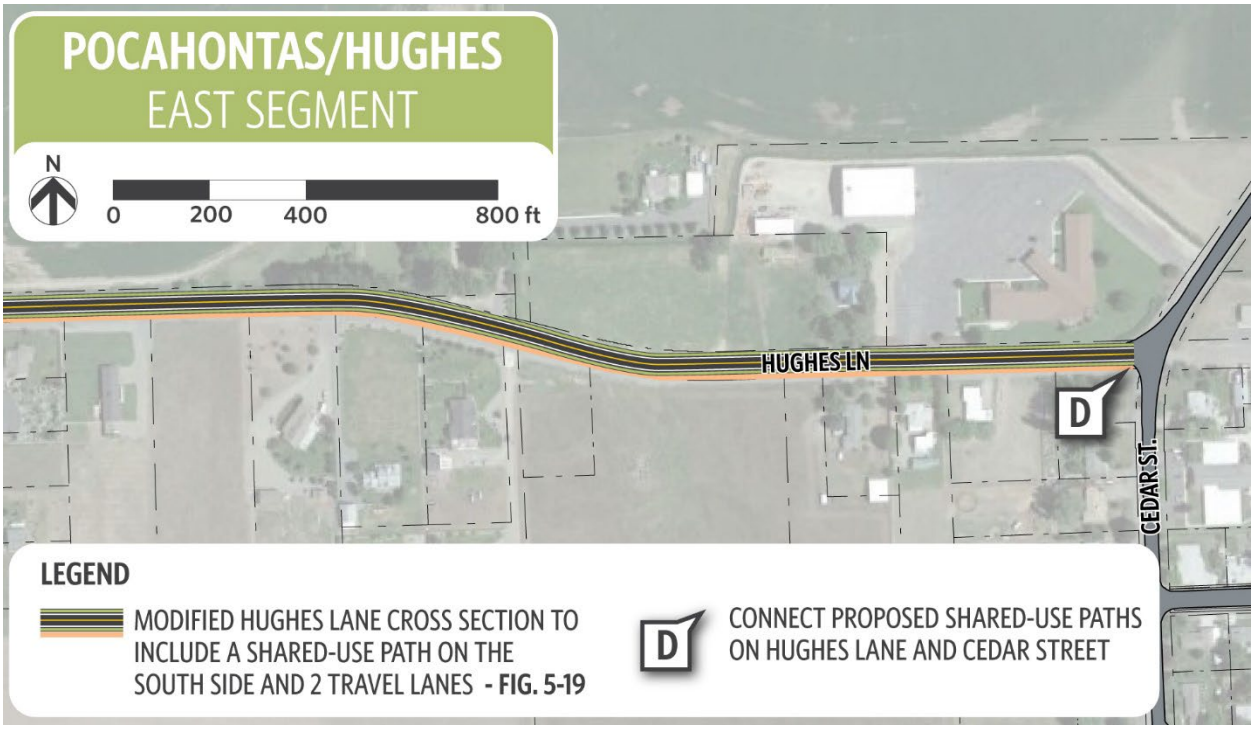


Figure 5-18. Preferred Concept – Condition on Pocahontas Road

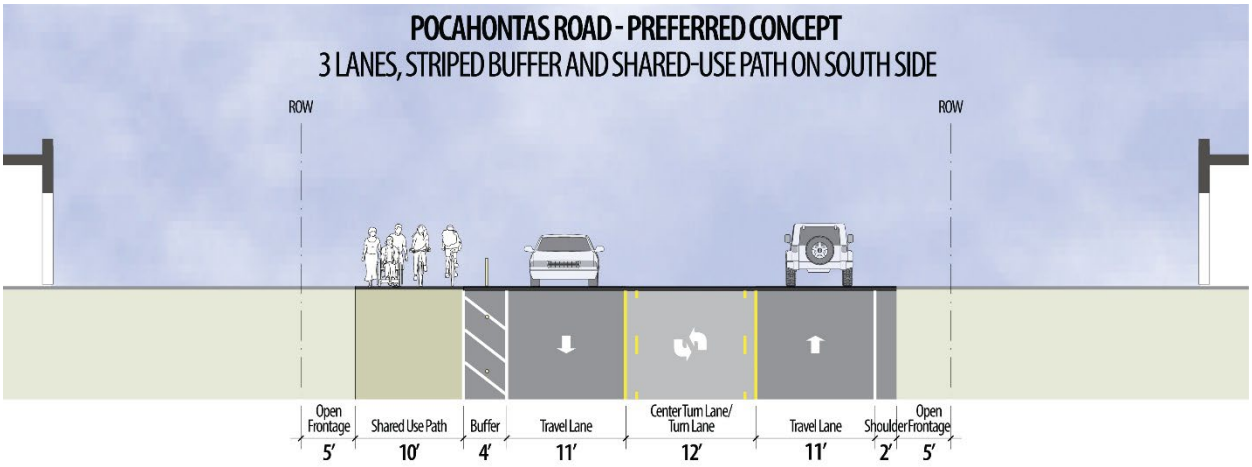
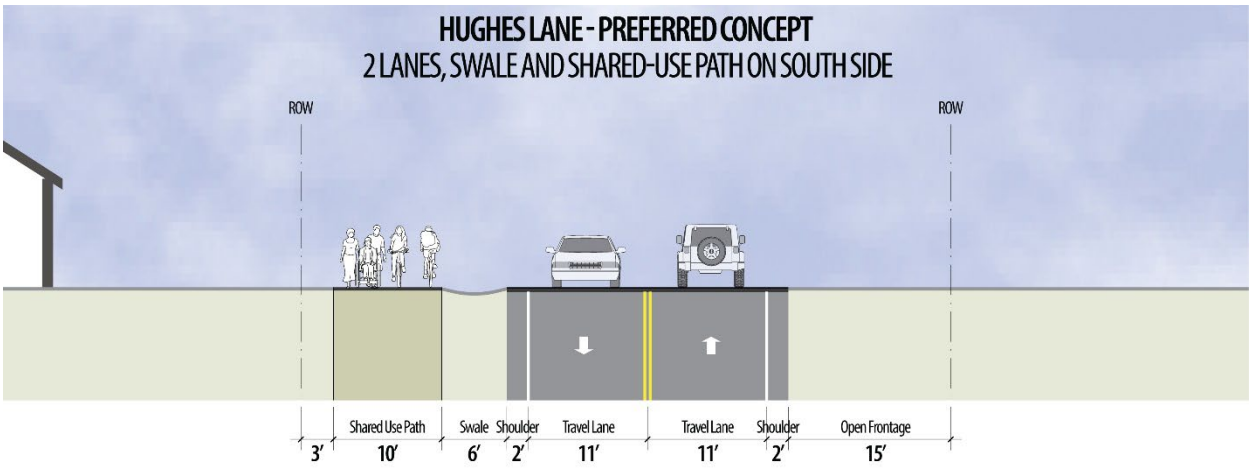


Figure 5-19. Preferred Concept – Condition on Hughes Lane



5.3.2 Concept Evaluation

Table 5-3 provides an evaluation of the concept based on the evaluation criteria.

Table 5-3. Pocahontas Road/Hughes Lane Concept Evaluation

Criteria		Preferred Concept	Comments
1	Feasibility of implementation	●	Subject to determination of centerline location and transmission line pole locations
2	ROW constraints	●	No ROW impacts anticipated to accommodate proposed cross sections; modest impacts expected to accommodate the 10th Street intersection modifications
3	Built environment constraints	◐	Some impacts may occur where private improvements extend into the ROW
4	Environmental impacts and mitigation	●	Minimal impacts anticipated; the proposed swale along Hughes Lane would likely be an improvement over existing conditions
5	Conceptual cost estimate	●	Subject to determination of transmission line pole locations; requires shifting roadway and restriping along Pocahontas Road to fit the SUP between the roadway and transmission poles
6	Safety and comfort for all modes of travel	●/◐	Provides off-street facility for non-motorized travelers; comfort and safety subject to additional protective barriers along Pocahontas Road, balanced with space needs of farming equipment
7	Connectivity across corridor	◐	Minimal change
8	Level of public and stakeholder support	●	General community and stakeholder sentiment supports adding the SUP on the south side and improvements to the 10th Street intersection
9	Community identity and aesthetics	●	Swales provide opportunity for street trees and public art
10	Business vitality/community livability	●	Improved livability by providing walking/biking amenities
Key: ● = good ◐ = average ○ = poor n/a = criterion is not relevant/does not apply			

5.4 Preferred Concept Performance

This section provides an overview of the performance of the preferred design concepts. For more information on the performance on the preferred concept design, refer to Appendix VII. It describes how the designs will impact operations and connectivity in Baker City and includes:

- Projected traffic operations and performance along the corridors and at key intersections, including impacts on freight movement.
- Improvements to active transportation and transit, including an analysis of access and comfort level for pedestrians and bicyclists.
- Initial cost estimates and design impacts on ROW and utilities.
- Anticipated impacts to crash frequency and severity at key locations.

5.4.1 Motor Vehicle Operations Assessment

This section provides a summary of motor vehicle operations at the four study intersections along 10th Street:

- 10th Street/Hughes Lane - unsignalized
- 10th Street/E Street - unsignalized
- 10th Street/Broadway Street - signalized
- 10th Street/Campbell Street - signalized

A traffic analysis was performed for future year (2040) conditions, following the recommendations and procedures included in Chapters 5, 12, and 13 of the ODOT APM.

Traffic volume forecasts were developed using an assumed annual growth rate of 1 percent per year. The population of Baker City has changed very little in the past 20 years and the current ODOT Future Highway Volume Table shows annual growth rates on 10th Street ranging from 0.1 to 0.6 percent. While not directly comparable to traffic growth, the latest amended Baker City Comprehensive Plan assumed a projected population growth for the City of 0.8 percent per year. An annual growth rate of 1 percent per year represents a conservative estimate for the future conditions analysis.

Traffic analysis was performed to determine volume-to-capacity (v/c) ratios for comparison to ODOT mobility thresholds consistent with Action 1F.1 of the OHP and the 20-year design mobility standards in the ODOT Highway Design Manual (HDM). ODOT mobility standards provide acceptable v/c ratios for project development and design. Based on the concept design, the 10th Street/Hughes Lane/Pocahontas Road intersection includes recommended improvements to the existing lane configuration (see Figure 5-7) and is the only intersection that was compared to both OHP (No-Build) and HDM (Build) mobility standards.

Based on the future year (2040) conditions analysis, all study area intersections meet OHP and HDM mobility targets (see Table 5-4). The signalized intersection at Campbell Street is operating at LOS A and the unsignalized intersections at E Street and

Broadway Street are operating at LOS C. The Hughes Lane/Pocahontas Road intersection is operating at LOS E in both the No-Build and Build scenarios and the results are based on the stop-controlled westbound left-turn movement. While the overall LOS does not change with the recommended improvements, the v/c ratio is significantly improved from 0.74 to 0.38 and the delay is reduced by over 20 percent.

Table 5-4. Future Year (2040) Peak Hour Operations

Unsignalized Intersection[1]	Major Street v/c	Minor Street		LOS
		v/c	Delay (s)	
10th Street & Hughes Lane/Pocahontas Road (No-Build)	0.12	0.74	44.5	E
10th Street & Hughes Lane/Pocahontas Road (Build)	0.12	0.38	35.3	E
10th Street & E Street	0.26	0.13	19.0	C
10th Street & Broadway Street	0.17	0.20	12.7	C
Signalized Intersection[2]	**v/c**		**Delay (s)**	**LOS**
10th Street & Campbell Street	0.32		7.0	A

[1] Unsignalized intersection LOS based on worst stop-controlled movement.
[2] Signalized intersection LOS based on overall intersection operations.

In addition to the operational analysis, a signal warrant analysis was performed at the 10th Street/Hughes Lane/Pocahontas Road intersection using both the existing (2020) and future year (2040) traffic volumes. The signal warrant analysis is focused on the peak hour, 4-hour, and 8-hour volume warrants and was performed using Highway Capacity Software (HCS), which replicates the procedures provided in the Manual on Uniform Traffic Control Devices (MUTCD). Only the peak hour signal warrant (Warrant 3) was met in the future year (2040), and only if the population was assumed to remain at or below 10,000. Based on the signal warrant analysis, a traffic signal is not warranted at this location at this time.

5.4.2 Freight/Heavy Vehicles Assessment

This section summarizes the future movement of freight and considerations related to freight and heavy vehicles in the study area.

Freight Improvements and Considerations

10th Street (US30) is designated a District Highway. According to ODOT's TransGIS tool, US30 does not show up as an OHP Freight Route, Reduction Review Route, or High Clearance Route. The preferred design concepts do not include freight specific improvements, but the designs do accommodate freight turning movements.

For the section north of H Street, the number of lanes remains the same though lane widths are reduced due to the addition of a 7-foot buffered bike lane on either side of the road. The two outside lanes, which provided space for travel, would be reduced from 18 feet to 12 feet. Twelve feet is the Oregon HDM recommended minimum width for a travel lane on any identified freight route, thus the preferred design concept for 10th Street

would accommodate freight movement. For the section south of H Street, the two outside lanes remain 12 feet wide while the inner two lanes are reduced from 12 to 11 feet.

The project team evaluated the curb extensions, pedestrian refuge islands, and enhanced pedestrian crosswalks and determined that truck turning movements would not be impacted by these improvements. The curb extensions would, at their maximum, be as wide as the parking lane and can be designed with a turning radius that accommodates heavy vehicle turning movements.

Hole-in-the-air Considerations

A highway's vehicle-carrying capacity refers to the horizontal and vertical clearance through which a vehicle can move. This clearance is informally known as the "hole-in-the-air". The size or capacity of this clear space determines the maximum size load a truck can move along the road. This capacity can be constrained through the addition of infrastructure such as bridges, light signals, or curb extensions, thus the Oregon Transportation Commission (OTC) identified certain roads that are important to freight movement as Reduction Review Routes. Oregon Revised Statute (ORS) 366.215 states that the OTC shall not permanently reduce the vehicle-carrying capacity of a Reduction Review Route unless safety or access considerations require the reduction, or a local government requests an exemption and Commission determines it is in the best interest of the state and freight movement is not unreasonably impeded.

It is important to note that none of the roads in this project are identified as Reduction Review Routes. There are some minor reductions to the "hole-in-the-air" through the addition of curb extensions that protrude to the extent of the parking lane at certain intersections. Otherwise, the curb-to-curb distance will not be reduced and, in fact, will increase in some areas.

The potential curb extensions would not encroach more than 9 feet into the roadway space along 10th Street, equivalent to the width of the parking lane. If curb extensions are installed on both sides of the roadway, the total width would equal up to 18 feet. This would produce a minimum horizontal clearance of 46 feet. The final location and width of the curb extensions would be determined during the design phase and after additional outreach is considered.

5.4.3 Active Transportation Assessment

This section summarizes bicycle and pedestrian improvements and future conditions found in Baker City along 10th Street, Cedar Street, and Hughes Lane/Pocahontas Road. For the three project corridors, BLTS and PLTS were calculated and findings presented.

LTS is a key indicator in measuring how comfortable a roadway segment or intersection is for person walking or biking to navigate. LTS objectively measures several roadway factors including traffic volumes, speeds, and the presence and quality of bicycle and pedestrian facilities to produce an LTS rating. Ratings are measured 1 through 4 with 1 representing the most comfortable environment for active transportation users.

Table 5-5 summarizes the BLTS and PLTS ratings for roadway segments and intersections. The LTS ratings for segments are scored based on the worst performing

roadway characteristic. The table shows the LTS rating for the future roadway conditions and shows the change in LTS rating compared to the existing conditions. The majority of LTS ratings improved and none of the future conditions are expected to be worse than today. For example, a roadway may score LTS 2 based on volumes but LTS 4 based on bicycle facility type and thus the segment would receive an overall score of LTS 4.

The concept design roadway segments generally rank LTS 1 and 2 for both bicycles and pedestrians primarily due to the increased separation of active modes from vehicle traffic. Intersection crossing and approach LTS scores also improved thanks to the combination of marked crossings, signage, curb extensions, and physical separation from travel lanes. 10th Street south of E Street remains a BLTS 3 for both the segments and intersections as no bicycle facilities are being proposed in those locations.

Table 5-5. Future Build BLTS and PLTS Ratings

Location	BLTS Rating	PLTS Rating
10th Street (US 30)		
Hughes Lane to H Street	2 **(+1)***	2 **(+2)**
H Street to Campbell Street	3	2 **(+1)**
Campbell Street to Broadway	3	2 **(+1)**
Hughes Lane / Pocahontas Road		
17th Street to 10th Street	1 **(+2)**	2 **(+2)**
10th Street to Kirkway Street	1 **(+2)**	2 **(+2)**
Kirkway Street to Cedar Street	1 **(+2)**	2 **(+2)**
Cedar Street		
Hughes Lane to H Street	1 **(+2)**	2 **(+2)**
H Street to D Street	1 **(+2)**	2 **(+2)**
D Street to Campbell Street	1 **(+2)**	2 **(+2)**
Intersections (Approach and Crossing LTS Scores)		
10th Street/Hughes Lane	3 **(+1)**	2 **(+2)**
10th Street/E Street	3	3 **(+1)**
10th Street/Campbell Street	3	2 **(+1)**
10th Street/Broadway Street	3	2
Pocahontas Road/17th Street	3 **(+1)**	2 **(+1)**
Hughes Lane/Kirkway Street	2 **(+1)**	2 **(+1)**
Hughes Lane/Cedar Street	2 **(+1)**	2 **(+1)**
Cedar Street/H Street	1	2
Cedar Street/D Street	1	1
Cedar Street/Campbell Street	1	1

*(+1) indicated an improvement in the LTS rating

5.4.4 Transit Assessment

Specific transit improvements, such bus stop facilities, are not included in the preferred design concepts. However, the proposed active transportation improvements would enhance access to local and regional transit service. Improvements to transit access as result of the proposed active transportation improvements are described below.

10th Street Improvements

Bus stops currently exist on both sides of 10th Street at the intersection with E Street. Improvements to 10th Street would include completing the sidewalk network along the corridor and providing intersection crossing improvements at the E Street and H Street intersections. These improvements would increase access to transit, make crossing the street more comfortable, and reduce the crash risks that pedestrians face when crossing 10th Street to access transit.

Pocahontas Road Improvements

A bus stop currently exists on the south side of Pocahontas Road in front of Saint Alphonsus Medical Center. The installation of a SUP along the southside of Pocahontas Road would improve access to the transit stop. Additionally, the improvements proposed to the intersection of 10th Street and Hughes Lane/Pocahontas Road would also improve access, making crossing 10th Street easier and reduce crash risks to pedestrians.

Cedar Street Improvements

A bus stop currently exists just south of D Street at the headquarters for NEO Transit. This location also serves as a stop for NEO Transit's regional shuttle service that connects Baker City to other communities in Eastern Oregon. The proposed SUP along Cedar Street and intersection improvement proposed for the crossing at D Street would increase access to both the local and regional transit service as well as reduce crash risks for pedestrians.

Future Transit Assessment

The preferred design concepts do not affect the operations of NEO Transit's local and regional transit services. However, the active transportation improvements described above would increase access to transit services, improve pedestrian comfort, and reduce pedestrian crash risks at three key locations as detailed above.

5.4.5 Transportation Safety Improvements and Analysis

This section provides a summary of the safety impacts that can be expected based on the countermeasures being proposed within the preferred concept designs. The final location and design of the improvements, such as the crossing improvements, may be modified during the design phase. Table 5-6 provides a summary of the Crash Modification Factors (CMF) for each countermeasure that is being proposed within the preferred concept designs. The most applicable CMF for each treatment was selected. In the case of multiple treatments at a single location, the most conservative estimate of

benefits is provided. For reference, a CMF of 0.80 should be expected to reduce crashes by a factor of 0.80. Stated another way, a CMF of 0.80 would reduce crashes by 20 percent. Each CMF is applicable to a particular crash type and/or crash severity.

Table 5-6. Safety Crash Modification Factors

Facility Type	CMF	Source	Countermeasure ID No.	Crash Type	Injury Type
Crosswalk with Sign at Unsignalized Intersection	0.85	ODOT ARTS*	BP15	Pedestrian	All
Curb Ramps and Extensions with Marked Crosswalk and Pedestrian Signs	0.63	ODOT ARTS	BP16	Pedestrian	All
Curb Extension	0.70	ODOT ARTS	I33	All	All
Pedestrian Median Refuge	0.69	ODOT ARTS	BP8	Pedestrian	All
Sidewalk	0.80	ODOT ARTS	BP29	Pedestrian	All
Buffered Bike Lane	0.53	ODOT ARTS	BP24	Bicycle	All Injury
SUP	0.75	FHWA CMF Clearinghouse	9250	Bicycle	All
Pedestrian Countdown Timer	0.69	ODOT ARTS	BP1	Pedestrian	All
Leading Pedestrian Interval	0.63	ODOT ARTS	BP3	Pedestrian	All
RRFB at Intersection	0.90	ODOT ARTS	BP10	Pedestrian	All

*ODOT All Roads Transportation Safety (ARTS)

10th Street Improvements

- Completing the sidewalks north of H Street on both sides of the roadway would provide a potential pedestrian crash reduction of 0.80. The buffered bike lanes would similarly provide a potential bicycle crash reduction of 0.53.
- The intersection improvements at H Street include a pedestrian median refuge, marked crosswalks, curb ramps, pedestrian signage, and curb extensions. These countermeasures would provide a potential pedestrian crash reduction of 0.63 while the curb extensions would provide a potential crash reduction of 0.70 for all crash types.
- The intersection with Campbell Street may receive curb extensions and signal upgrades to include a pedestrian countdown timer and a leading pedestrian interval. The curb extension would provide a potential crash reduction of 0.70 for all crash types while the combined pedestrian countdown timer and leading interval would provide a potential pedestrian crash reduction of 0.69.
- Intersection crossing improvements at E, D, B, and Church Streets may include marked crosswalks with signage, curb extensions, and ADA curb ramps that would

provide a potential pedestrian crash reduction of 0.63. The curb extensions would also provide a potential crash reduction of 0.70 for all crash types.

- While there is no specific CMF for the realignment proposed at the intersection of 10th/Hughes Lane/Pocahontas Road, there are anticipated safety benefits from a qualitative perspective. The revised alignment reduces the skewed angle and provides separate turn lanes at the westbound and eastbound approach, clarifying travel through the intersection. The curve at the southbound approach to the intersection provides an incentive for motorists to reduce speed as they are traveling into Baker City. The enhanced crosswalks would provide connections to the sidewalk on 10th Street and the proposed SUP on Hughes Lane and Pocahontas Road.

Pocahontas Road/Hughes Lane Improvements

- Installing the SUP along Pocahontas Road/Hughes Lane would provide a potential crash reduction of 0.75 for bicyclists for the length of the corridor.

Cedar Street Improvements

- The walking path and SUP north of D Street would provide a potential crash reduction of 0.75 for bicyclists.
- The SUP south of D Street would provide a potential crash reduction of 0.80 for pedestrians and bicyclists.
- The intersection improvements at D Street include curb extensions, marked crossings, and crossing warning signage. The improvements would provide potential crash reduction for pedestrians of 0.63 at the intersection. The curb extensions would also provide potential crash reduction benefits for all crash types by a factor of 0.70.

6 Facility Plan

6.1 Project Purpose and Vision

The project developed a vision to revitalize 10th Street (US30) and to improve the walking and bicycling environment on Cedar Street and Hughes Lane/Pocahontas Road. The preferred concepts for the three corridors described in this plan are designed to improve identified shortcomings and to provide benefits that range from operational and safety improvements to access improvements and aesthetic enhancements.

The project proposes improvements on all three corridors that foster safe and comfortable travel along and across the corridors by all modes, that are aesthetically pleasing, and that retain each corridor's unique character and context. The proposed improvements along the three corridors are designed to facilitate community interaction by enhancing the unique characteristics of each corridor: vibrant commercial activity along 10th Street; livable neighborhoods along Cedar Street; and the rural edge along Hughes Lane/Pocahontas Road. The facility plan presented here will improve safety and comfort of multimodal travel along the project corridors and will result in improved quality of life in Baker City.

6.2 Policy Context

The Northern Baker Transportation Improvement Plan was guided by and developed to be consistent with current transportation goals and policies found in the Oregon Highway Plan, Baker City's and Baker County's Comprehensive Plans, and other relevant state and local goals and policies.

6.2.1 10th Street (US30)

According to the OHP, 10th Street (US30) corridor is designated as a District Highway and an Urban Business Arterial (UBA). District Highways are intended to function as city arterials and collectors, provide connections to other areas, and serve local access and traffic. The improvements to 10th Street in this plan are consistent with the District Highway designation while providing safety and multi-modal improvements. UBAs are applied to existing areas of commercial activity where accessibility is important to economic vitality and balancing the movement of people and goods. The improvements to 10th Street are consistent with the UBA by designing intersections and street designs to facilitate safe movement of pedestrians and bicyclists while also factoring the corridor's importance for accommodating the movement of freight and farm equipment.

The identified improvements to the 10th Street corridor are also informed by the Blueprint for Urban Design (BUD). The BUD builds on existing design manuals such as ODOT's Highway Design Manual and provides design guidance for state facilities in urban settings. The identified improvements for 10th Street were informed by the BUD guidelines and based on the OHP's designations and following design criteria:

- BUD applies as a designated US Highway route

- BUD land use context – Urban Mix and Commercial Corridor

Both of Baker City's and Baker County's Transportation System Plans identify improvement projects to the 10th Street corridor. These projects generally seek to improve signals, intersections, and crossings along 10th Street (see Table 2-1). The improvements identified in the Transportation Improvement Plans were designed to incorporate or be compatible with Transportation System Plan projects. The improvements to the 10th Street corridor further refine the improvements in the Transportation System Plans through determining the appropriate types of improvements to meet current and forecasted needs and by providing conceptual designs to inform implementation.

Both the City's and County's Comprehensive Plans provide long-range guidance for land use. Their goals and polices provide direction on transportation system and land use decision-making consistent with Statewide Planning Goals. Identified improvements to 10th Street have been tailored to meet identified needs while remaining consistent Comprehensive Plan goals and policies.

In addition to being consistent with existing Comprehensive Plans, this Transportation Improvement Plan provides a vision for the corridor that further refines existing policies. Both jurisdictions will need to amend their respective Comprehensive Plans to incorporate this vision and associated recommendations from the Transportation Improvement Plan. For 10th Street corridor, these generally include:

- A new intersection alignment at 10th Street and Hughes Lane/Pocahontas Road.
- Enhanced intersections along 10th Street to facilitate pedestrian and bicyclist crossings.
- Complete the network and sidewalks and improve Americans with Disability Act (ADA) access.

6.2.2 Cedar Street

According to Baker City's Transportation System Plan, Cedar Street is classified as a Collector. Collectors within the City facilitate traffic movement within the urban areas and provide circulation and mobility for all users, including pedestrians and bicyclists. The improvements identified in the Transportation Improvement Plan are consistent with intended functional classification in the TSP; they enhance existing conditions and balance circulation with mobility for all users. The recommended improvements identified in the Transportation Improvement Plan include:

- Crossing improvements at key locations along Cedar Street to make it easier for people biking and walking to cross.
- New SUPs along Cedar Street and Hughes Lane/Pocahontas Road.

6.2.3 Hughes Lane/Pocahontas Road

According to Baker City's Transportation System Plan, Hughes Lane and Pocahontas Road are classified as Arterials. Arterials are primarily intended to serve traffic entering

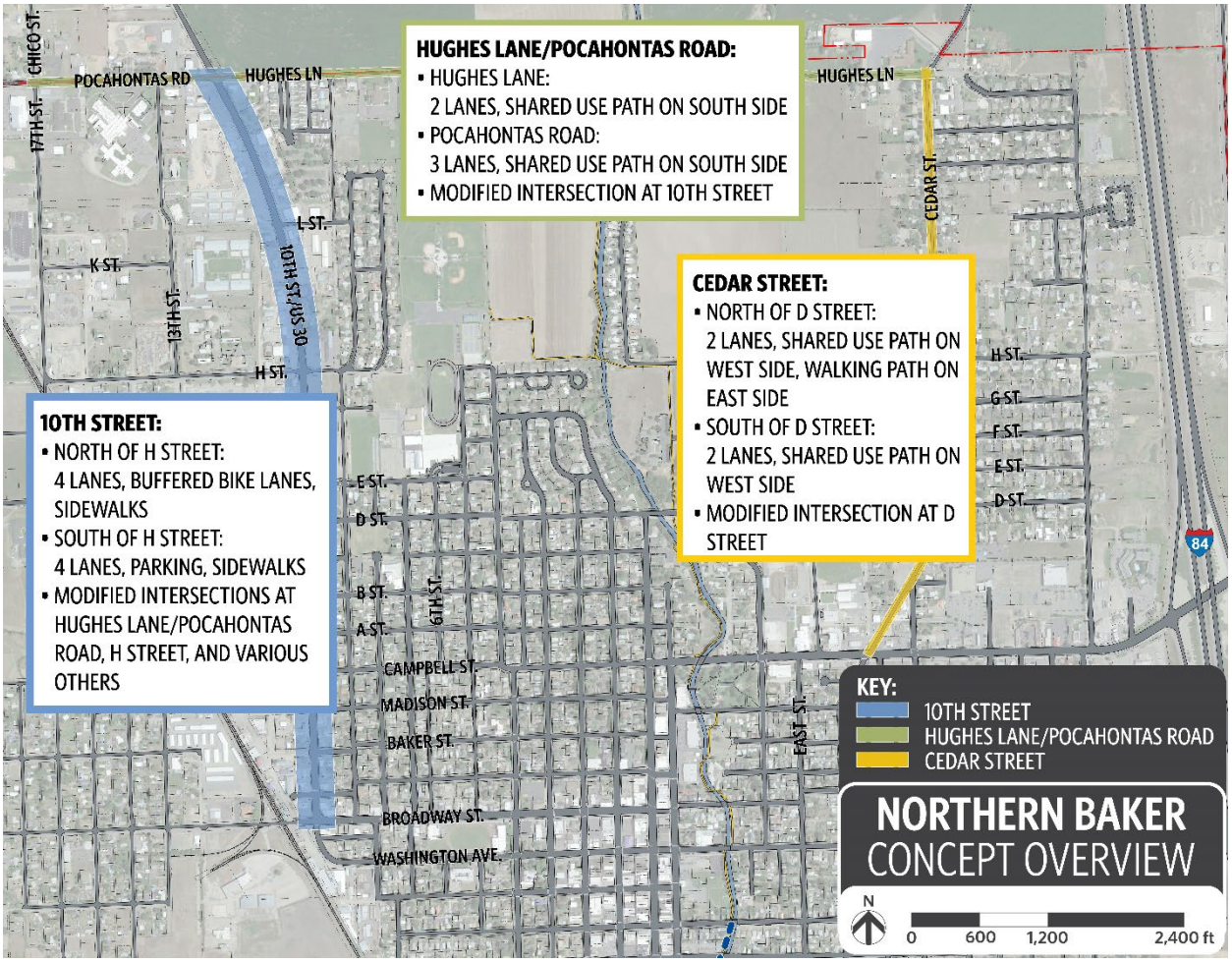
and leaving the urban area while also providing access to adjacent land. They are also intended to serve pedestrian and bicycle activities. The improvements to Hughes Lane and Pocahontas Street identified in the Transportation Improvement Plan will allow the street to better meet their intended functions of facilitating traffic in and out of the urban area while also improving conditions for pedestrians and cyclists. These will be accomplished by adding shared use paths along both streets, as well as improvements to the intersection with 10th Street.

6.3 Concept Overview

The preferred design concepts for the three corridors propose improvements intended to ensure equitable access to transportation options for all ages and abilities while maintaining corridor functions Baker City residents rely on and the community character locals cherish. These concepts include improvements to key intersections, enhanced street crossings, facilities for people walking and bicycling along the project corridors, and suggested connections to and enhancements of the larger network of streets and pathways to allow for safe and comfortable travel by all modes.

Figure 6-1 provides an overview of the preferred design concept proposed for each corridor.

Figure 6-1. Concept Overview



Key features of the preferred concepts for the three corridors include:

- Enhanced bicycle and pedestrian crossing opportunities at key intersections along 10th Street.
- A realigned 10th Street and Hughes Lane/Pocahontas Road intersection that adds turning lanes, slows traffic, and provides an enhanced crossing opportunity for people biking and walking.
- Buffered bike lanes on 10th Street north of H Street and complete sidewalks along the whole corridor.
- A SUP along Hughes Lane/Pocahontas Road.
- A SUP running the length of Cedar Street and a walking path north of D Street.
- A modified intersection at Cedar Street and D Street to improve crossing opportunities for people biking and walking.

6.3.1 10th Street Roadway Treatments

The preferred 10th Street concept proposes different approaches for the segments north and south of H Street due to the different curb-to-curb width and the level of interconnectedness of the surrounding street grid. The concept maintains the existing four travel lanes for the entirety of the corridor. Bicycles are accommodated on 10th Street north of H Street, while south of H Street the concept proposes that 9th Street serve as low-stress bicycle route in the form of a bicycle boulevard (a low volume and low speed neighborhood street with signage and pavement markings that indicate to motorists and cyclists alike that the street is to be shared by all modes).

The concept also proposes connecting to the larger existing and planned non-motorized network (see Figure 6-2). This could be achieved by designating Campbell Street as a bicycle boulevard (similar to Baker City's neighborhood route designation) between 17th Street and Main Street to create links to the planned SUP along 17th Street to the west and Leo Adler Memorial Parkway to the east. Similarly, designating H Street as a bicycle boulevard from 17th Street to 8th Drive would create a connection to the planned 17th Street SUP and could create a link to Leo Adler Memorial Parkway with a suggested trail connection around the north end of Baker City High School. It should be noted that the proposed improvements to the local street and path network would not be funded and implemented as part of this project.

The concept proposes to include buffered bicycle lanes on 10th Street between Pocahontas Road/Hughes Lane and H Street (see Figure 6-3). Buffered bicycle lanes can be accommodated within the existing roadway width by slightly narrowing the inside travel lanes. South of H Street, the preferred concept keeps the existing cross section of 10th Street largely unchanged (see Figure 6-4).

To provide adequate access to destinations on 10th Street, frequent and enhanced crossings would improve the street network's east/west connectivity and minimize out of direction travel for non-motorized travelers. To provide enhanced crossings, the preferred concept proposes modifications to several intersections along 10th Street. The exact locations and configurations of the enhanced crossings will be confirmed during the design phase of future projects, balancing pedestrian access and safety with considerations such as snow removal and ensuring that turning radii accommodate large vehicles and equipment .

Figure 6-2. 10th Street Concept – Network Connectivity

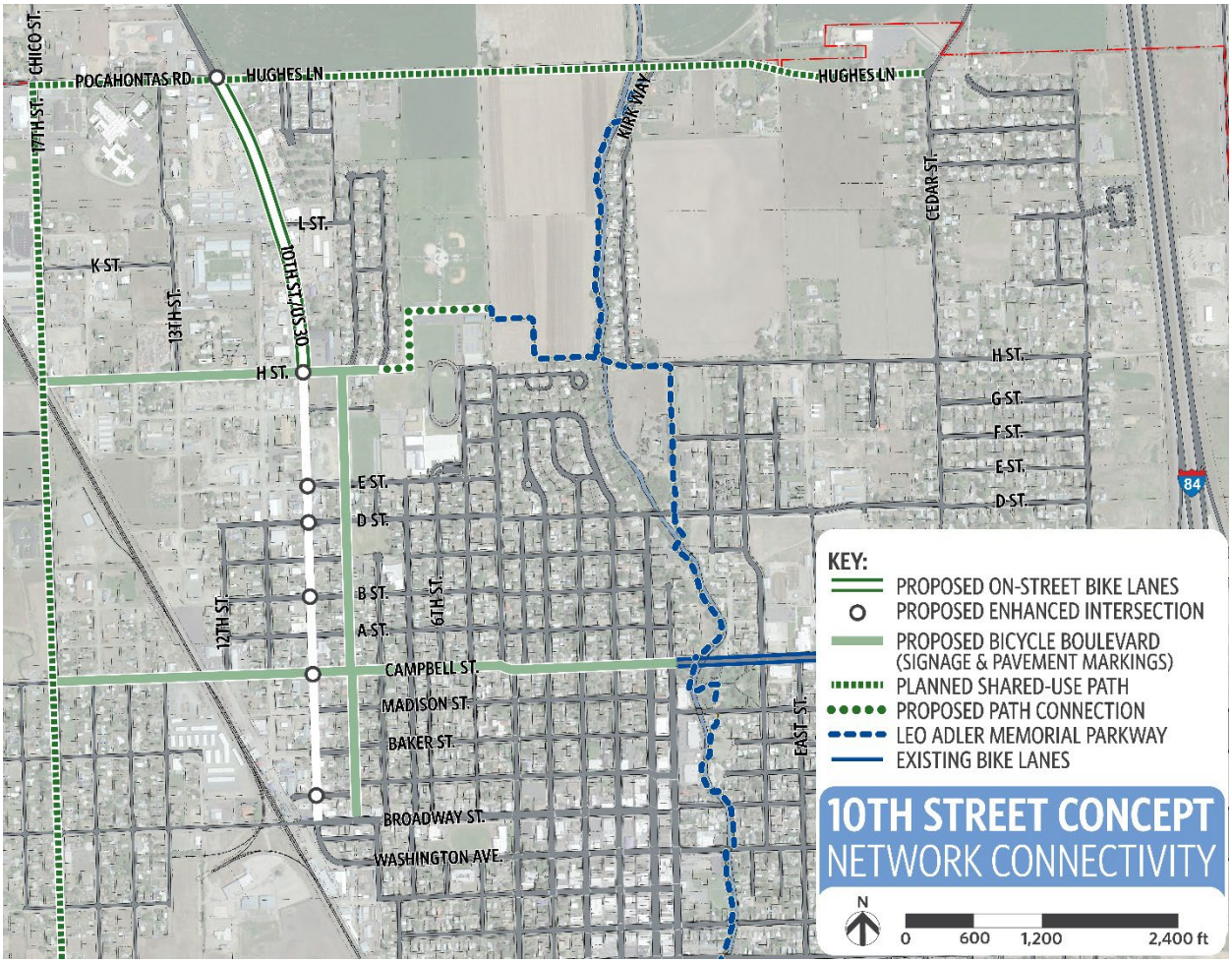


Figure 6-3. Proposed Typical Condition North of H Street

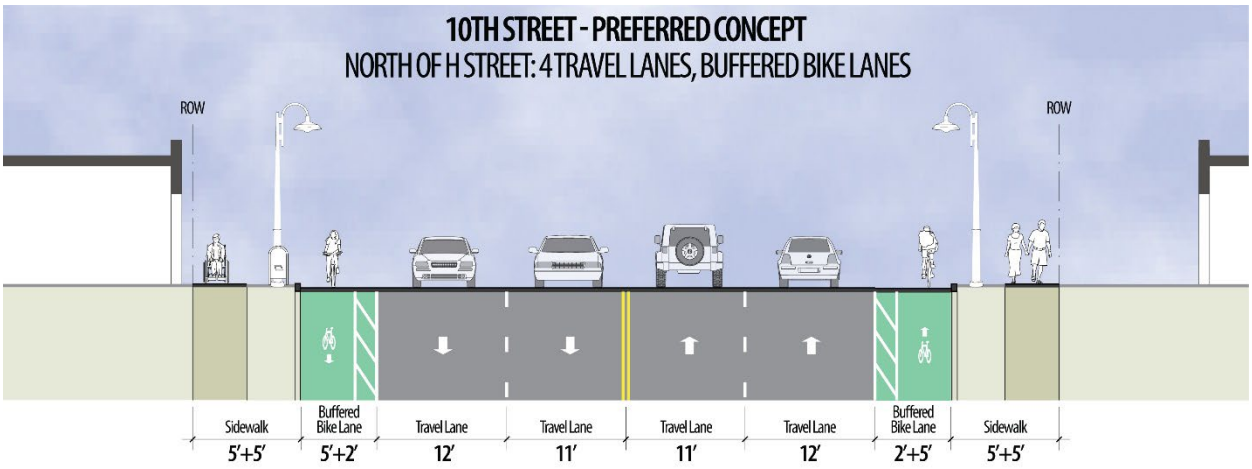
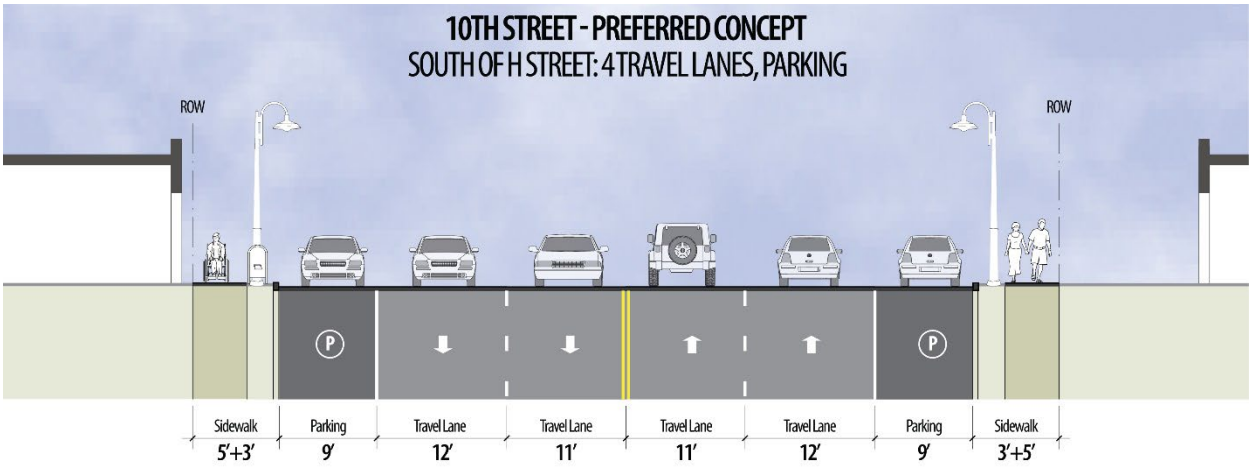


Figure 6-4. Proposed Typical Condition South of H Street



6.3.2 Cedar Street Roadway Treatments

The preferred concept (see Figure 6-5) maintains the existing two-lane cross section. North of D Street, the preferred concept proposes a paved walking path on the east side and a paved SUP on the west side. Both paths are separated from the roadway by a landscaped swale. South of D Street, the concept (see Figure 6-6) proposes the SUP on the west side only. To provide enhanced pedestrian access to NEO Transit and the Community Connection Senior Center, a walking path is on the east side south of the D Street intersection to the driveway of those institutions.

Figure 6-5. Preferred Concept - Condition North of D Street

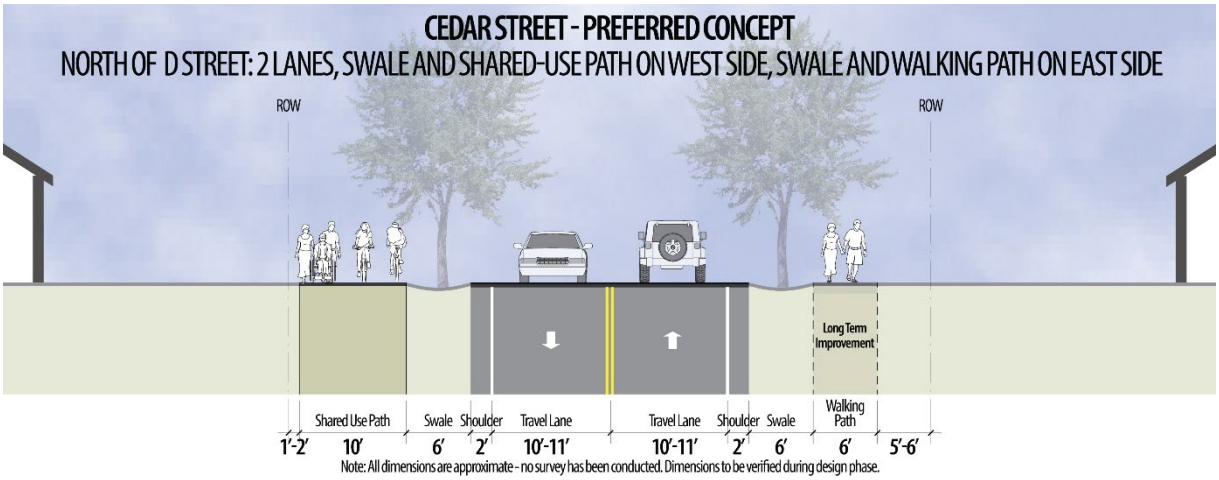
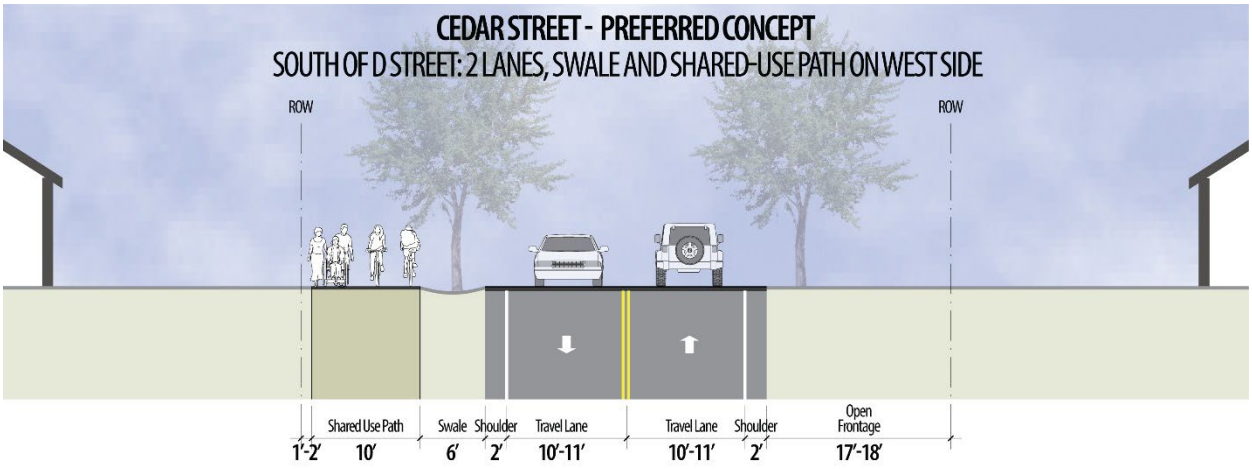


Figure 6-6. Preferred Concept - Condition South of D Street



6.3.3 Hughes Lane/Pocahontas Roadway Treatments

The proposed Pocahontas Road concept (see Figure 6-7) maintains the existing three-lane cross section, though slightly narrowed and shifted northward, and includes a paved SUP on the south side separated from the roadway by a striped buffer. The addition of physical separators to the striped buffer should be considered to enhance comfort and safety of path users. These separators may be permanent or removable barriers or delineators, such as delineator posts or concrete curbs. The desired visual or physical separation of path users from vehicular traffic should be balanced with space requirements of overly wide farming equipment traveling the corridor and path access for snowplows. Where the SUP meets with cross streets, a marked crossing should be provided.

The proposed Hughes Lane concept (see Figure 6-8) maintains the two-lane cross section and includes a paved SUP on the south side, separated from the roadway by a landscaped swale. Where the SUP meets with cross streets, primarily at Kirkway Street, a marked crossing should be provided.

Figure 6-7. Preferred Concept – Condition on Pocahontas Road

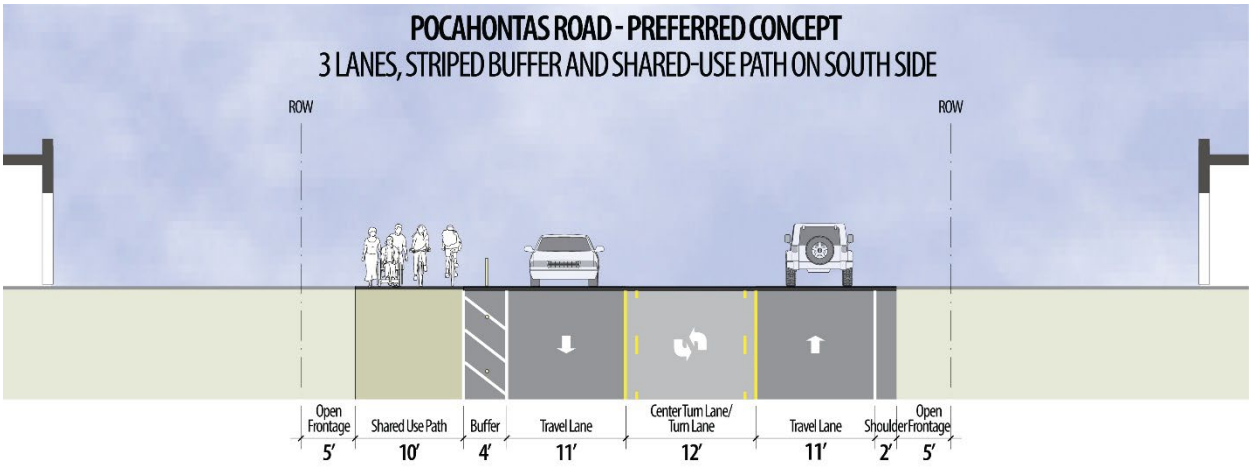
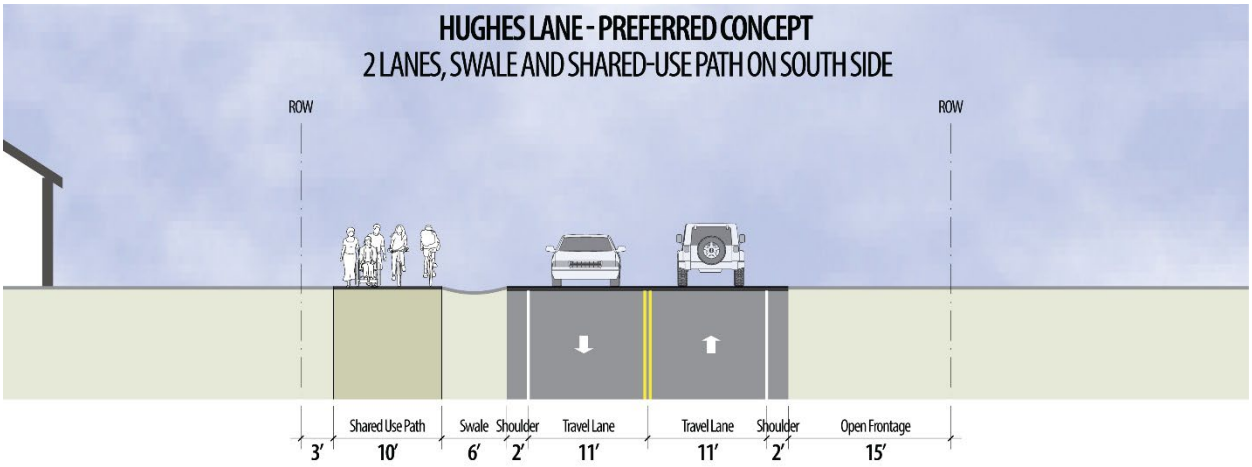


Figure 6-8. Preferred Concept – Condition on Hughes Lane



6.4 Costs and Phasing

6.4.1 Cost Estimates

This section provides planning level cost estimates for the preferred design concepts. Table 6-1 includes a breakdown of costs, including costs for active transportation and general roadway improvements for each corridor. No transit or freight specific improvements were identified. The cost estimates are inflated to 2024, the projected year of planned construction.

Total costs for improvements to the three corridors total $15,338,000. Construction costs make up $8,740,000. The remaining costs of $6,600,000 consist of contingency, mobilization, maintenance of traffic, and erosion control. Included in this estimate is a 50 percent contingency for construction costs, which reflect uncertainty in construction material costs due to the recovery from the COVID-19 pandemic. The estimates do not account for ROW purchases, engineering, construction management, administration, or utility relocation.

10th Street improvements represent the largest share of total costs with $6.55 million in construction costs and $4.95 million in contingency, mobilization, maintenance of traffic, and erosion control for a total of $11.5 million. The Cedar Street improvements consist of $1 million in construction with $.85 million in contingency, mobilization, maintenance of traffic, and erosion control for a total of $1.85 million. The combined Pocahontas Road/Hughes Lane improvements consist of $1.14 million in construction costs and $.86 million in contingency, mobilization, maintenance of traffic, and erosion control for a total of $2.00 million. A more detailed breakdown on the cost estimates is available in Appendix VIII.

Table 6-1. Planning Level Cost Estimates

Total of all Corridors*					
Improvement Type	**Item**	**Unit**	**Unit Price**	**Quantity**	**Cost (2024 Dollars)**
Roadway	Asphalt Concrete Pavement	TON	$ 90	24,600	$ 2,384,000
Roadway	Aggregate Base	TON	$ 40	44,700	$ 1,926,000
Roadway	Concrete Curb	Linear Foot	$ 45	3,200	$ 155,000
Roadway	General Excavation	Each	$ 50,000	6	$ 323,000
Bike/ped	Sidewalk	Square Foot	$ 20	16,000	$ 345,000
Bike/ped	Shared Use Path	Square Foot	$ 14	104,000	$ 1,568,000
Bike/ped	Pedestrian Walkway	Square Foot	$ 14	22,800	$ 344,000
Bike/ped	Curb Extension	Each	$ 10,000	23	$ 248,000
Bike/ped	Curb Ramps	Each	$ 7,500	51	$ 412,000
Bike/ped	Median Refuge	Square Foot	$ 15	160	$ 2,500
Bike/ped	Continental Crosswalk Striping	Each	$ 850	35	$ 32,000
Bike/ped	RRFB	LS	$ 75,000	1	$ 80,000
Bike/ped	Pedestrian Countdown Timer	Each	$ 800	4	$ 3,500
Bike/ped	Leading Pedestrian Interval	Each	$ 2,500	1	$ 2,700
Roadway	Drainage	5%	$ 363,000	1	$ 390,000
Roadway	Illumination	5%	$ 269,000	1	$ 290,000
Roadway	Signing & Striping	3%	$ 218,000	1	$ 235,000
	Contingency	50%	$ 4,058,000	1	$ 4,370,000
	Mobilization	10%	$ 1,217,000	1	$ 1,310,000
	Maintenance of Traffic	5%	$ 609,000	1	$ 656,000
	Erosion Control	2%	$ 243,000	1	$ 262,000
				Total	**$ 15,338,700**

Assumptions and Exclusions*

1. Initial construction estimate represents 2021 dollars inflated to 2024 using a 2.5% rate of inflation
2. ODOT bid history tabs were used to determine unit prices
3. Full depth pavement replacement is assumed. 9"AC/18"AB
4. A 50% contingency was placed on all bid items listed
5. Mobilization, Maintenance of Traffic, and Erosion Control includes the 30% contingency for these percentage based items
6. Estimates do not include Right-of-way, engineering, construction management, administrative costs, or utility relocations

6.4.2 Phasing and Prioritization

This section proposes phasing options for the construction of the recommended improvements along the three corridors. Improvements along 10th Street should be prioritized due to ODOT funding for the corridor currently being available. Table 6-2 details the proposed phasing. Facilities in the table are prioritized as either near-term (0-5 years) or mid-term (5-10 years) and are subject to the availability of funding.

Table 6-2. Preferred Design Concept Phasing

Improvements	Location	Priority	Timeline
10th Street			
Intersection Realignment	10th Street and Pocahontas Road/Hughes Lane	High	Near-term*
Buffered Bike Lanes	Between H Street and Pocahontas Road/Hughes Lane	High	Near -term*
Sidewalks	Between H Street and Pocahontas Road/Hughes Lane	Medium	Mid-term**
10th Street Crossing Improvements	Intersections with H, E, D, B, Campbell, and Church Streets	High	Near -term*
Pocahontas Road/Hughes Lane			
SUP	Between 17th Street and Cedar Street	Medium	Mid-term**
Cedar Street			
SUP	Between Hughes Lane and Campbell Street (westside)	High	Near -term*
Walking Path	Between Hughes Lane and D Street (eastside)	Medium	Long-term***
Crossing Improvements	Intersections with H and D Streets	High	Mid-term**

*Near-term projects should occur within a 0-5 year time horizon depending on the availability of funding
**Mid-term projects should occur within a 5-10 year depending on the availability of funding
***Long-term projects should occur within a 10+ years depending on the availability of funding

Funding Sources

Baker City's 2013 TSP outlines the primary sources of funding the city used in the past to implement transportation infrastructure improvements. The funding sources identified in the TSP are possible sources that can be used to design and construct the preferred concepts.

Since the adoption of the last TSP in 2013, several additional funding sources have become available and are described below.

Federal

REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY GRANT (RAISE)

The RAISE program is a competitive grant program providing communities with funds that can be invested in road, rail, transit, multimodal and port projects that help achieve national objectives. Previously, the program was known as BUILD (Better Utilizing Investment to Leverage Development and TIGER (Transportation Investment Generating Economic Recovery). Over $1 billion in funding was made available in Fiscal Year 2021. If interested, local officials could submit a grant application in a future fiscal year to help fund construction of the preferred concept.

State

HB 2017

House Bill 2017 (Keep Oregon Moving) was passed in 2017 with the intent to provide increased transportation funding to address a number of transportation issues across the state. The bill included outlays for projects in Baker City in the 2024 fiscal year as shown below:

- 10th Street/Hughes Lane/Pocahontas Road Intersection - $5,800,000 available
- Cedar Street and Hughes Lane Intersection Enhancements - $1,250,000 available
- Active Transportation Leverage - $1,755,600 available

Local

SYSTEM DEVELOPMENT CHARGES (SDC)

SDCs were identified in the 2013 TSP but as of 2021, they have not been implemented in Baker City to help fund local infrastructure investments. The application of SDCs to help fund construction of the preferred concept should be explored by local officials

LOCAL IMPROVEMENT DISTRCIT (LID)

A LID was identified in the 2013 TSP but as of 2021, it has not been implemented in Baker City to help fund local infrastructure investments. An LID could be created along 10th Street to assist in raising funds to help construct the 10th Street improvements.

URBAN RENEWAL DISTRICT (URD)

An URD was identified in the 2013 TSP but as of 2021, it has not been implemented in Baker City to help fund local infrastructure investments. An URD could be created along 10th Street to assist in raising funds to help construct the 10th Street improvements.

Triggers for Initiating Improvements

Grant Funding

Local officials could decide to apply for grant funds to help design and construct the preferred concepts on any of the three project corridors. Receiving grant funds would allow work to move forward to complete the proposed improvements.

TSP Update

The last update to Baker City's TSP was in 2013, nearly a decade ago. The TSP could be updated to include the preferred concepts for the three corridors. Projects for these corridors could be placed on the constrained funding list to ensure funds are available in the near future to complete design and construction work.

Adjacent Property Development

Improvements or development to adjacent properties along the three project corridors could be used to trigger roadway improvements on a piecemeal basis. If the cross-sections and preferred concepts are adopted into the TSP and Baker City Comprehensive Plan, they would act as the design standard for each of the project roadways, requiring future development to comply with the adopted concepts.

6.5 Next Steps

The following are considerations and next steps for the responsible (i.e., state, county or city) agencies as the projects move toward design and construction.

6.5.1 Project Wide Next Steps

- Adopt the Facility Plan into local TSP documents and necessary ODOT modal plans.
- Determine the appropriate funding sources to use to complete design and construction of the preferred concept.
- Complete engineering design work to finalize design before construction
- Adopt the Comprehensive Policy and Code Amendments summarized in Appendix IX at the local levels

6.5.2 10th Street Next Steps

- Examine options for enhanced crossings to determine the final elements and locations of crossing improvements. The potential crossing improvements include median refuges, marked crosswalks, signage, curb extensions, and activated beacons (HAWK or RRFB).
- Monitor traffic operations and crash conditions at the intersection of 10/Hughes/Pocahontas to evaluate if a traffic signal is warranted. Maximize forward compatibility in the near term improvements to streamline future installation of a traffic signal when warranted.
- Consider large vehicle access and circulation needs in design of 10th Street improvements.
- Continue to monitor the opportunity for a three-lane configuration. As compared to four-lane roads, it is easier for all modes of transportation to cross a three-lane road. In addition, there will be fewer crashes associated with pedestrians or cyclists crossing the street on a three-lane road as compared to a four-lane road. Finally, certain safety features, including median refuges and RRFBs may be more easily accommodated into a three-lane option due to minimum width requirements. ODOT recommends a 6 to 8-foot width for center running median refuges meant to enhance pedestrian crossing safety. Additionally, RRFBs require a certain minimum width to be installed within a median refuge. Both of these facility types would be installed more easily in a three-lane cross section.

- Examine the location of utilities to help refine facilities location in final design.
- Identify possible access management and driveway closures that would be needed in order to install a buffered bike lane.
- Determine if an updated Intergovernmental Agreement (IGA) is needed between parties for maintenance and snowplowing needs.

6.5.3 Cedar Street Next Steps

- Complete surveys to determine the true centerline of the roadway. During the project design, the exact roadway location needs to be confirmed to determine the remaining available width. Physical obstacles, such as mature trees in the open frontage, may require modifications of the typical cross sections to accommodate the addition of the paths.
- Examine utilities to help refine the alignment of the SUP and walking path.
- Identify locations along the roadway or in close proximity for garbage pick-up and mail delivery.

6.5.4 Hughes Lane/Pocahontas Road Next Steps

- Complete surveys to determine the true centerline of the roadway. During the project design, the exact roadway location needs to be confirmed to determine the remaining available width. Physical obstacles, such as utility poles in the open frontage, may require modifications of the typical cross sections to accommodate the addition of the path.
- Initiate further planning to determine a location of the non-motorized bridge over the Powder River.
- Initiate further planning for the possible driveway connecting Baker High School and the Baker Sports Complex to Hughes Lane.