

Improving Downtown Streetscapes and Transportation Safety in Klamath Falls

Findings and Recommendations

Klamath Falls, Oregon: 13 September 2017



Report Contents

Acknowledgments	1
Introduction	2
Downtown Street Opportunities	4
One-Way Street Design Concept	6
Two-Way Street Design Concept	10
One-Way to Two-Way Conversations	14
North and South Gateway Changes	16
Street Designs - Plan Views	17
A Timeline for Better Downtown Streets	18
Quick-Fixes and Pilot Projects	19
Downtown Parking Strategy	20
Funding Sources	21
Planning Level Cost Forecasts	23

Acknowledgments

PROJECT TEAM

Joe Wall (City of Klamath Falls)
Evan Manvel (Oregon Department of Land Conservation and Development)
Devin Hearing (Oregon Department of Transportation)
Scott Edelman (Oregon Department of Land Conservation and Development)
Scott Souders (City of Klamath Falls)
Ben Weber (SERA Architects)
Matthew Arnold (SERA Architects)
Spencer West (SERA Architects)
Robert Burchfield (Toole Design Group)
Gwen Shaw (Toole Design Group)

STAKEHOLDERS INTERVIEWED

Randall Pope (Downtown property owner)
Nick Phair (Downtown Association President; City Planning Commissioner)
Jeremy Morris (Adkins Engineering)
Jennifer Little (Skylakes Wellness)
Drew Honzel (Klamath Trails Alliance)
Phil Studenberg (City Council)
Kendall Bell (City Council)
Mark Willrett (City Public Works Director)
Mark Gallagher (Klamath County Planning Manager)
Larry Holzgang (Business Oregon)
Derek DeGroot (County Commissioner)
David Scott (Downtown business owner)
Katherine Pope (Skylakes Wellness Center)
Matt Dodson (City Council)
Ernest Palmer (Klamath County Planning Commissioner; Klamath Basin Transit)
Dennis Traeger (Klamath Trails Alliance)
Lauren Jespersion (Klamath County Planning Commissioner; Skylakes Medical Center)



This project is partially funded by a grant from the Transportation and Growth Management (“TGM”) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Fixing America’s Surface Transportation Act (FAST-Act), local government, and State of Oregon funds.

The contents of this document do not necessarily reflect the views or policies of the State of Oregon.

Introduction

Downtown Klamath Falls stands to benefit greatly from a committed strategy of improving the aesthetic, operational, and safety standards and designs of its city streets, in particular Main Street and Klamath Avenue. During early 2017 the City of Klamath Falls hosted a series of public events, street walks, and stakeholder interviews to help educate the community about street design and safety improvement, explore options for converting these two streets back to two-way traffic flow, and understand how public investment in streets can help spur economic development opportunities. This report summarizes the planning process and a number of the key safety, design, and placemaking concepts that were co-created with City and community input.

PLANNING PROCESS

This project has been partially supported by the Transportation and Growth Management Program, a joint program of the Oregon Department of Transportation (ODOT) and the Oregon Department of Land Conservation and Development (DLCD). Meeting facilitation, design guidance, and the production of this summary report were conducted by SERA Architects and Toole Design Group. This plan additionally builds upon and supports the Klamath Falls Urban Trail Plan and its recommendations for overall regional walking and biking connectivity.

WORKING WITH THE COMMUNITY

The success of any streetscape plan depends on support from the community and broad consensus that streetscape and circulation improvements will make Downtown safer and more vibrant. In March 2017 the team met to tour Downtown and have conversations with business owners, residents, government officials, students, and others who frequent Downtown. Returning in June 2017, the team conducted a large public workshop to provide education about street safety benefits, economic impacts, and what strategies might work in Klamath Falls. The contents of this report reflect years of ongoing research and study of street safety tactics, and ensures that any recommendations and ideas are practical to apply in Klamath Falls and received support during the community events.

In stakeholder interviews with elected officials, business owners, OIT instructors and students, and representatives from partner groups such as the Blue Zones Project and Sky Lakes Wellness, we



Members of the project team touring city streets during a March 2017 site visit and stakeholder interview event.



Community members sharing street design and safety ideas during the June 2017 public workshop.

heard overall enthusiasm for the safety, accessibility, and economic goals of the project. Many people agreed that downtown Klamath Falls possessed strong “bones,” a dedicated group of residents and businesses, and an enviable natural setting. However, Main Street and Klamath Avenue were called out as roads that encouraged people to hurry through town, instead of stopping to visit, shop, and meet other people. The community supported the overall goal of making these streets support, not undermine, efforts to revitalize Downtown and surroundings.

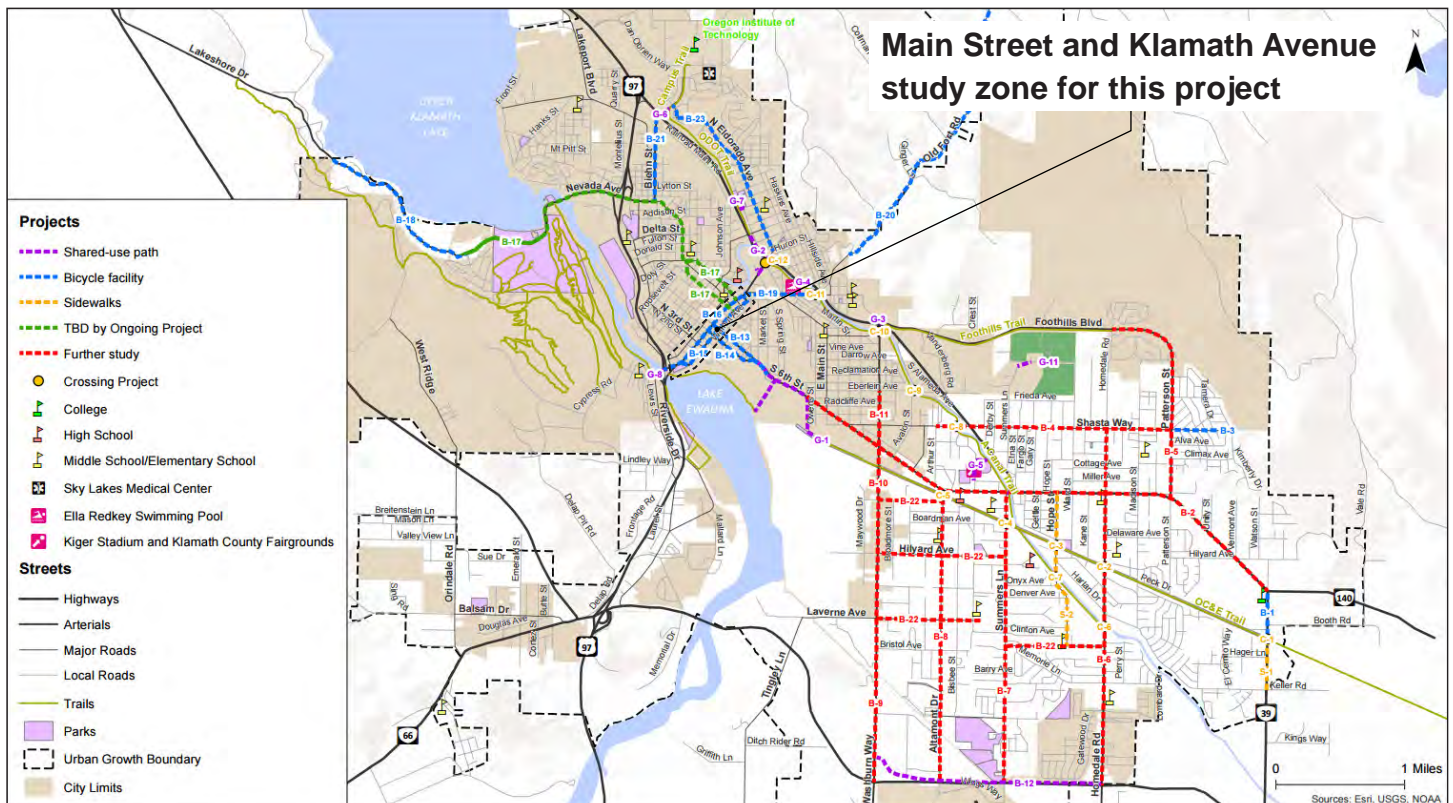
Input from community members ranged broadly, including:

- Broad support for street safety improvements;
- Interest in two-way conversion but skepticism about the cost and timeline to make it happen;
- Concern about maintaining truck access;
- Concerns about snow removal and storage;
- A broad interest in quick-fix designs for testing improvements before committing to them;
- Concern about maintaining parking supply;
- Questions about the necessity of dedicated bicycle facilities;
- Interest in improving the “gateway” areas at the north and south ends of Downtown.

PROJECT GOALS

Broadly, this planning process intended to engage with and educate the community about methods to:

- Pursue street safety improvements, walkability, and bikeability in both one-way and two-way options;
- Evaluate both one-way and two-way traffic flow options;
- Leverage street investment for economic development; and
- Plan for feasible implementation

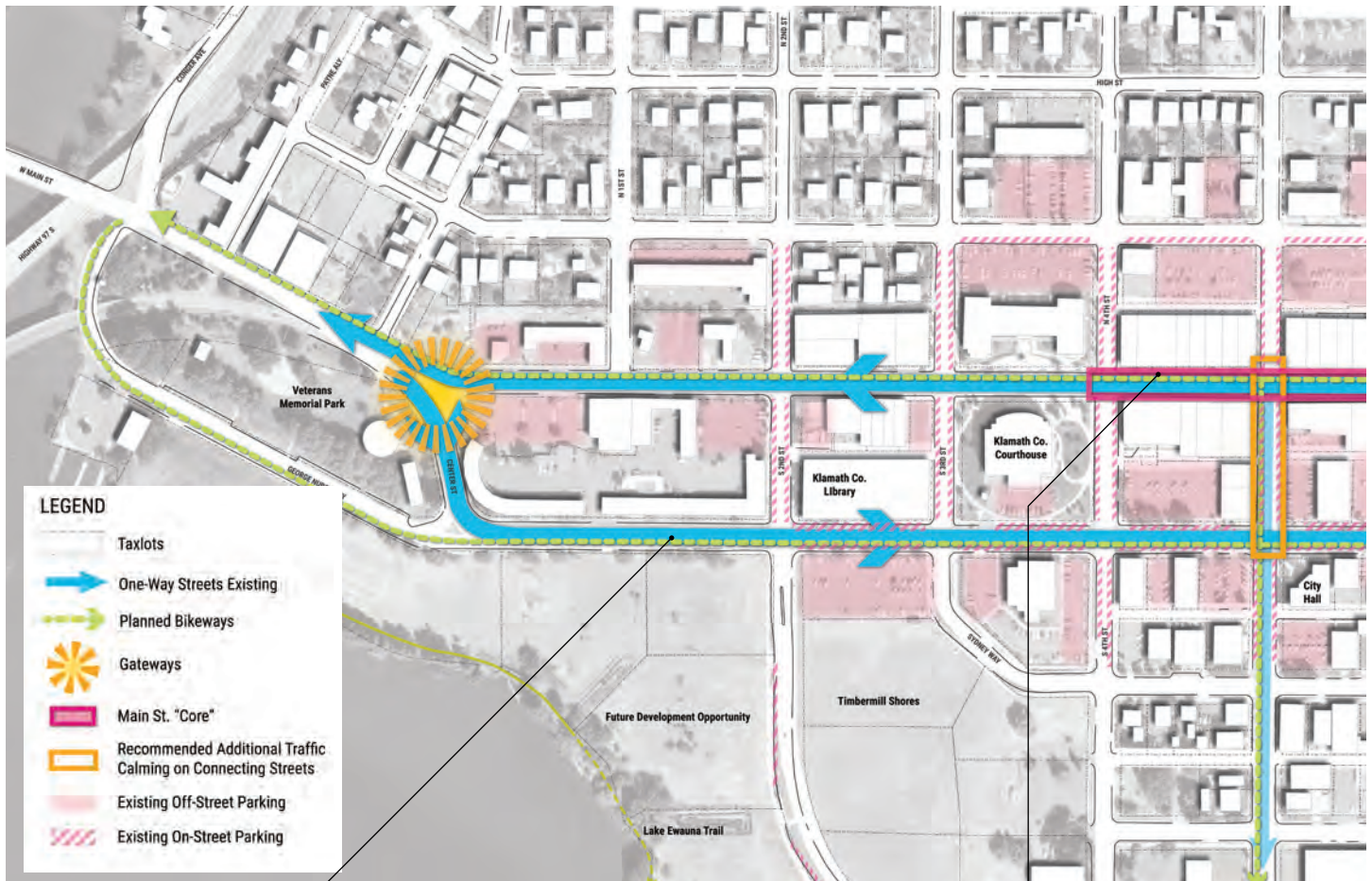


Klamath Falls Urban Trail Plan, Figure 3-3 (source: City of Klamath Falls, Klamath County, Kittelson & Associates)

Downtown Street Opportunities

MAIN STREET AND KLAMATH AVENUE TODAY

The pedestrian environment on Main Street and Klamath Avenue through downtown is decent overall. However, speeding traffic (average vehicle speeds are around 27mph in the 20mph-posted Downtown, with 10% of people exceeding 30mph, as measured in November 2016) and a lack of bicycle and high-quality walking facilities makes it unwelcoming in downtown for many people.



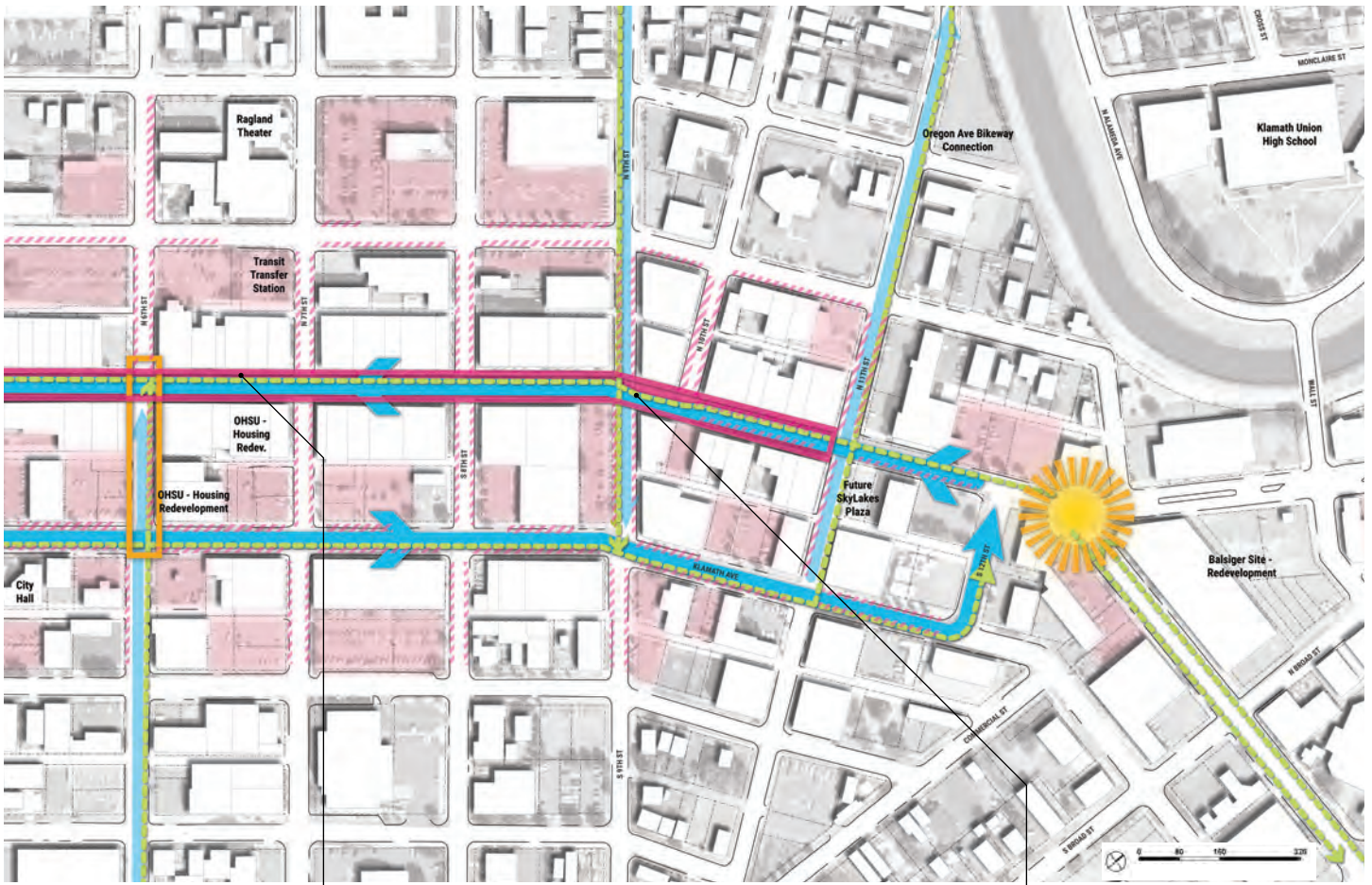
Wide Lanes and No Bikeways encourage speeding traffic and make it uncomfortable to ride a bicycle on busy downtown streets.



Sidewalks downtown, especially on Main Street, are generally wide enough to fit walkers, trees, benches, and small bits of outdoor seating



A combination of design, circulation, and use changes could help make the streets safer, friendlier, and more pleasant for all people to use to access businesses, homes, parks, and other attractions.



Creative Street Uses such as “street seats” replace parking spots with seating, landscaping, and other vibrant people spaces.



Crosswalks and Intersections in Downtown are selectively improved. Crosswalks and curb extensions could be used more extensively.



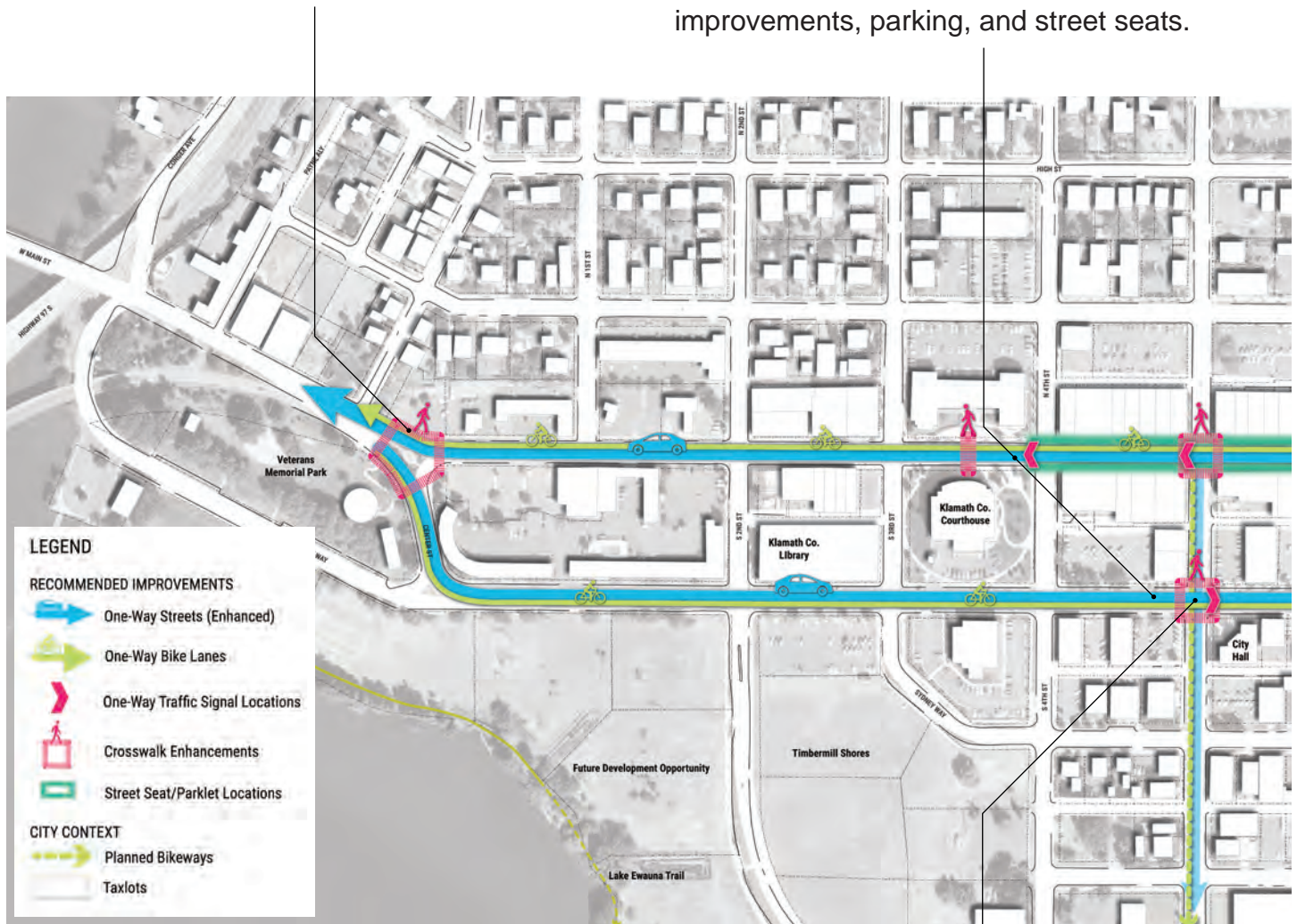
One-Way Street Design Concept

THE BASICS OF ONE-WAY IMPROVEMENTS

Maintaining Main Street and Klamath Avenue as one-way streets reduces complexity in potential streetscape design changes and still offers the opportunity for significant safety and accessibility improvements. These concepts are intended to help slow speeding traffic, make it easier to cross the street, provide bicycle facilities, and make better use of the street as a place for people to gather.

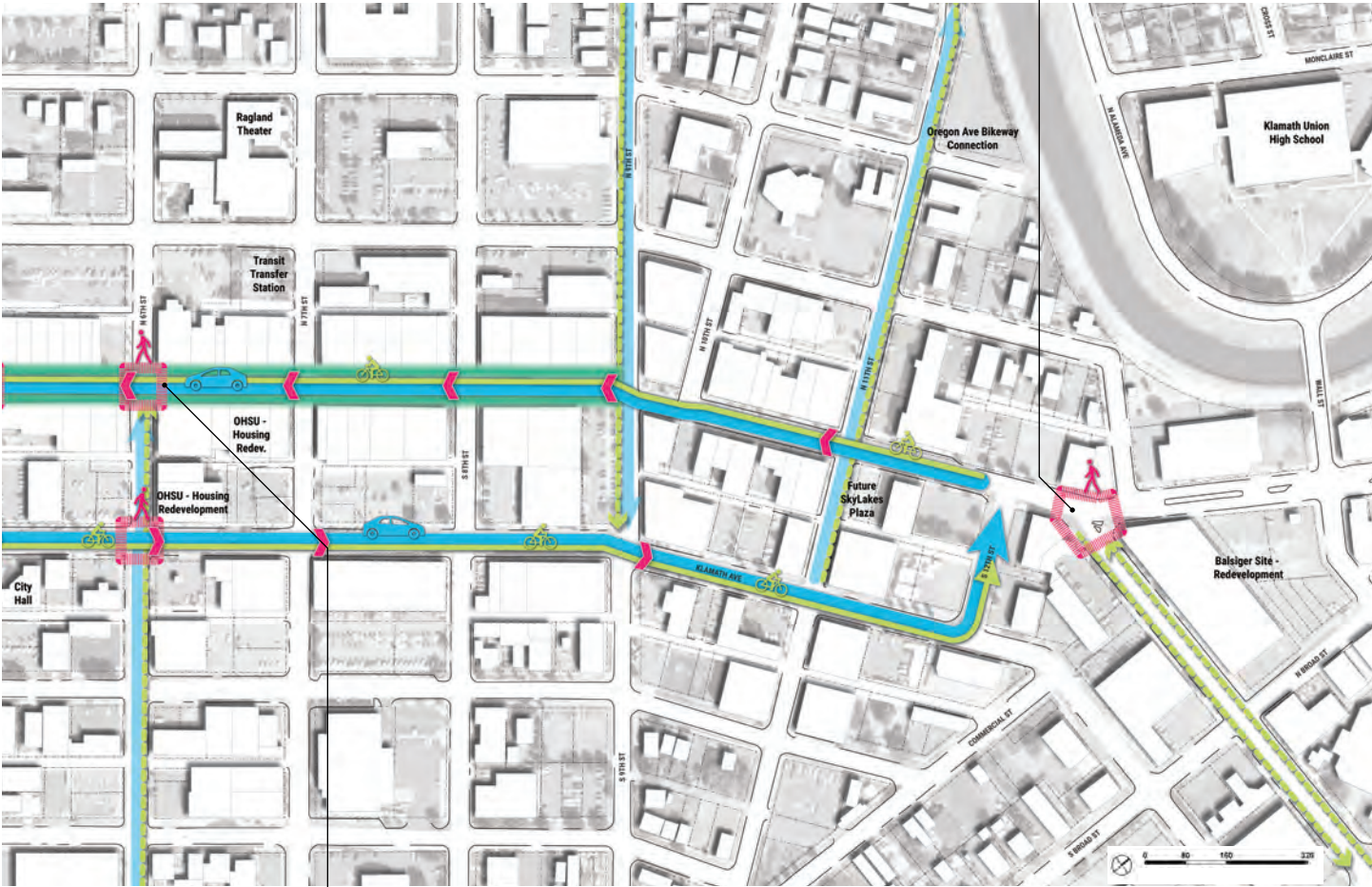
“South Gateway” Improvements with better crosswalks, welcome and wayfinding signage, and safety enhancements for turning vehicles.

Lane Width Reductions on Main and Klamath will help slow speeding traffic and create more space for bicycle lanes, crosswalk improvements, parking, and street seats.



Protected Bicycle Lanes on both streets, and tying in with previously planned bicycle routes on 5th, 6th, 9th, and 11th, will provide safer routes for people to ride through town and connect to OIT, the lake, and nearby neighborhoods.

“North Gateway” Improvements at the intersection of Main and Esplanade with better crosswalks, welcome and wayfinding signage, and safety enhancements for turning vehicles.



Crosswalk Enhancements throughout the Main and Klamath corridor and particularly at the busiest corners in the commercial core. Some of these corners should be improved with curb extensions to ease walking and slow traffic.

ONE-WAY CONCEPT RENDERING (VIEW NORTHEAST ON MAIN FROM 6TH)

Below is a concept illustration of various traffic flow changes and safety improvements that could be part of Main Street improvements while maintaining one-way traffic.

A parking-protected bike lane running southbound on Main (and northbound on Klamath) provides a safe space for riders.

Street seats are seasonally-installed outdoor seats and landscape areas that convert a parking spot into a gather space for people



Curb extension to shorten pedestrian crossing distances, calm traffic, and provide additional sidewalk space for trees, benches, and other basic sidewalk needs. In this configuration the curb extension also protects the bicycle lane.

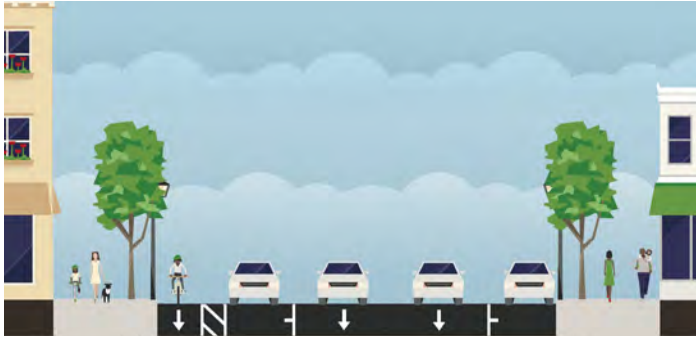
Crosswalk improvements include better marking and surface treatments and fully ADA-compliant curb cuts and ramps.

EXISTING STREET

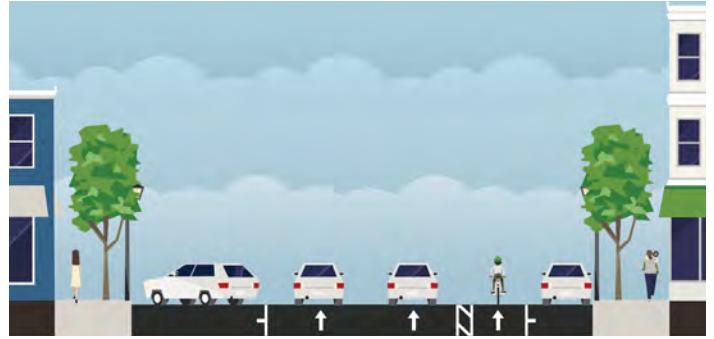


SEVERAL ALTERNATIVE ONE-WAY CONFIGURATIONS

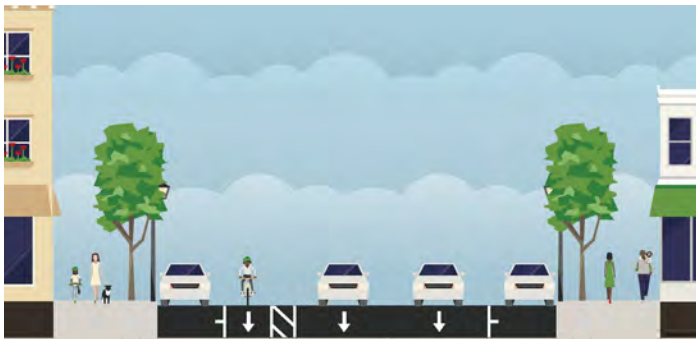
Below is a concept illustration of various traffic flow changes and safety improvements that could be part of Main Street and Klamath Avenue improvements while maintaining one-way traffic.



CONCEPT - MAIN STREET WITH A SOUTHBOUND PARKING-PROTECTED BIKE LANE



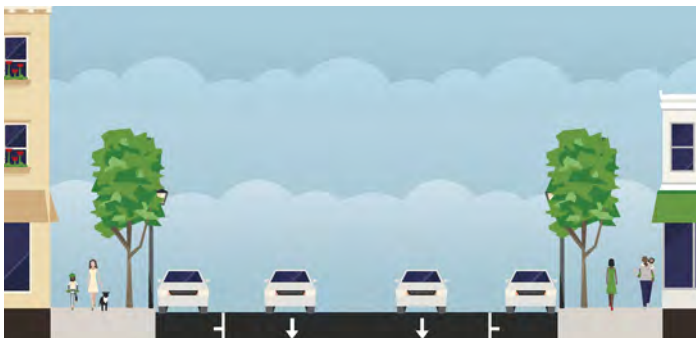
CONCEPT - KLAMATH AVENUE WITH A NORTHBOUND BUFFERED BIKE LANE AND MAINTAINED ANGLE PARKING



CONCEPT - MAIN STREET WITH A SOUTHBOUND RIGHT-SIDE BUFFERED BIKE LANE



CONCEPT - KLAMATH AVENUE WITH A PROTECTED TWO-WAY PROTECTED BIKE LANE



EXISTING - MAIN STREET (SOUTHBOUND)



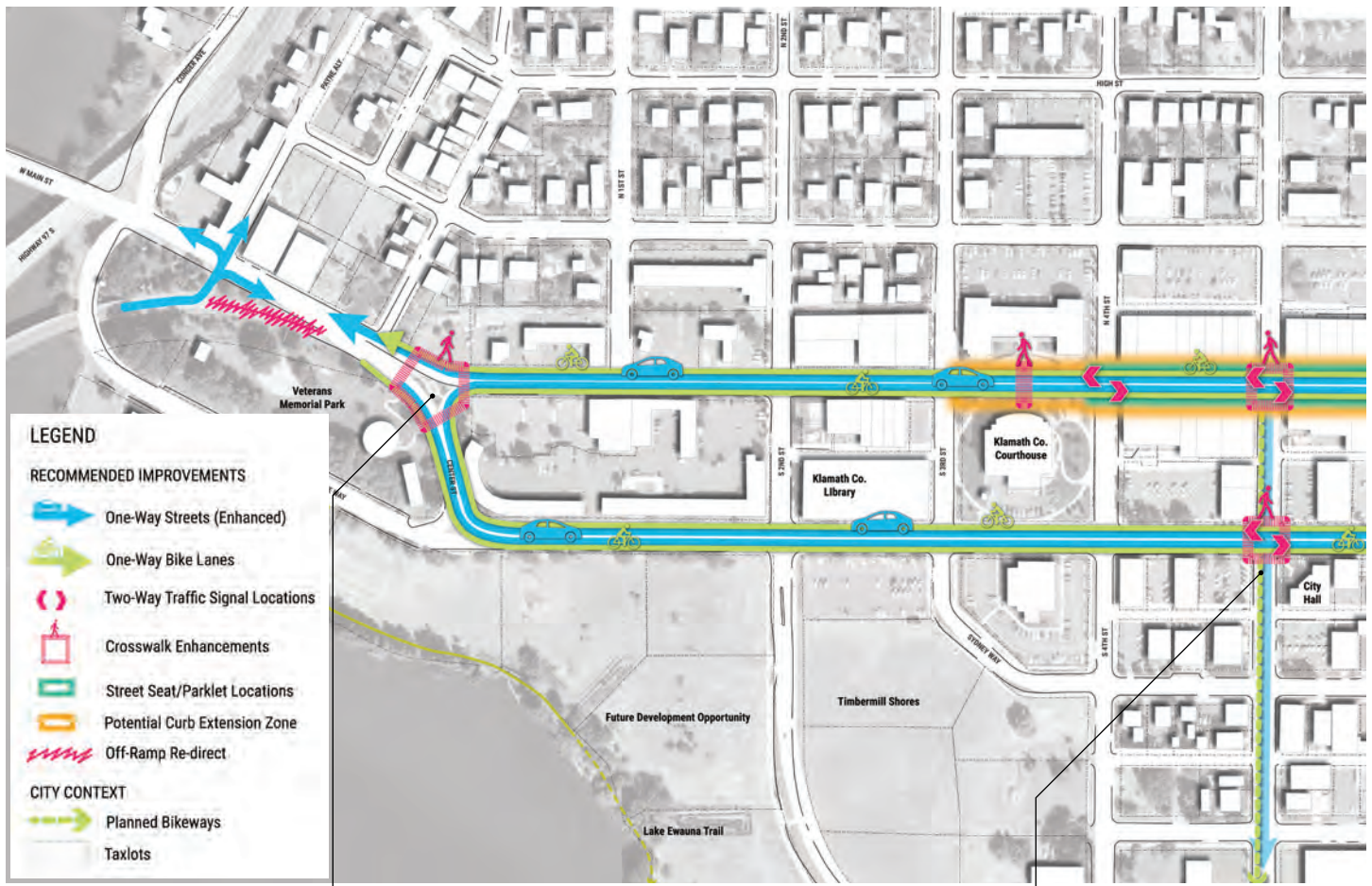
EXISTING - KLAMATH AVENUE (NORTHBOUND)

Two-Way Street Design Concept

THE BASICS OF TWO-WAY IMPROVEMENTS

Converting Main and Klamath to two-way flow adds complexity in the short-term but could provide major dividends for street safety, providing routes for people biking and walking, creating gathering spaces for workers, residents, and visitors, and spurring economic vibrancy for Downtown businesses.

Existing and forecasted vehicle volumes through Downtown are within the range that would support conversion to a two-way system without negatively impacting travel times. This approach would require more investment in traffic signal changes and modifying several key intersection locations. Attention would need to be paid to ensure trucks can move through Downtown, but overall this two-way strategy is more likely to foster a vibrant and welcoming Main Street.

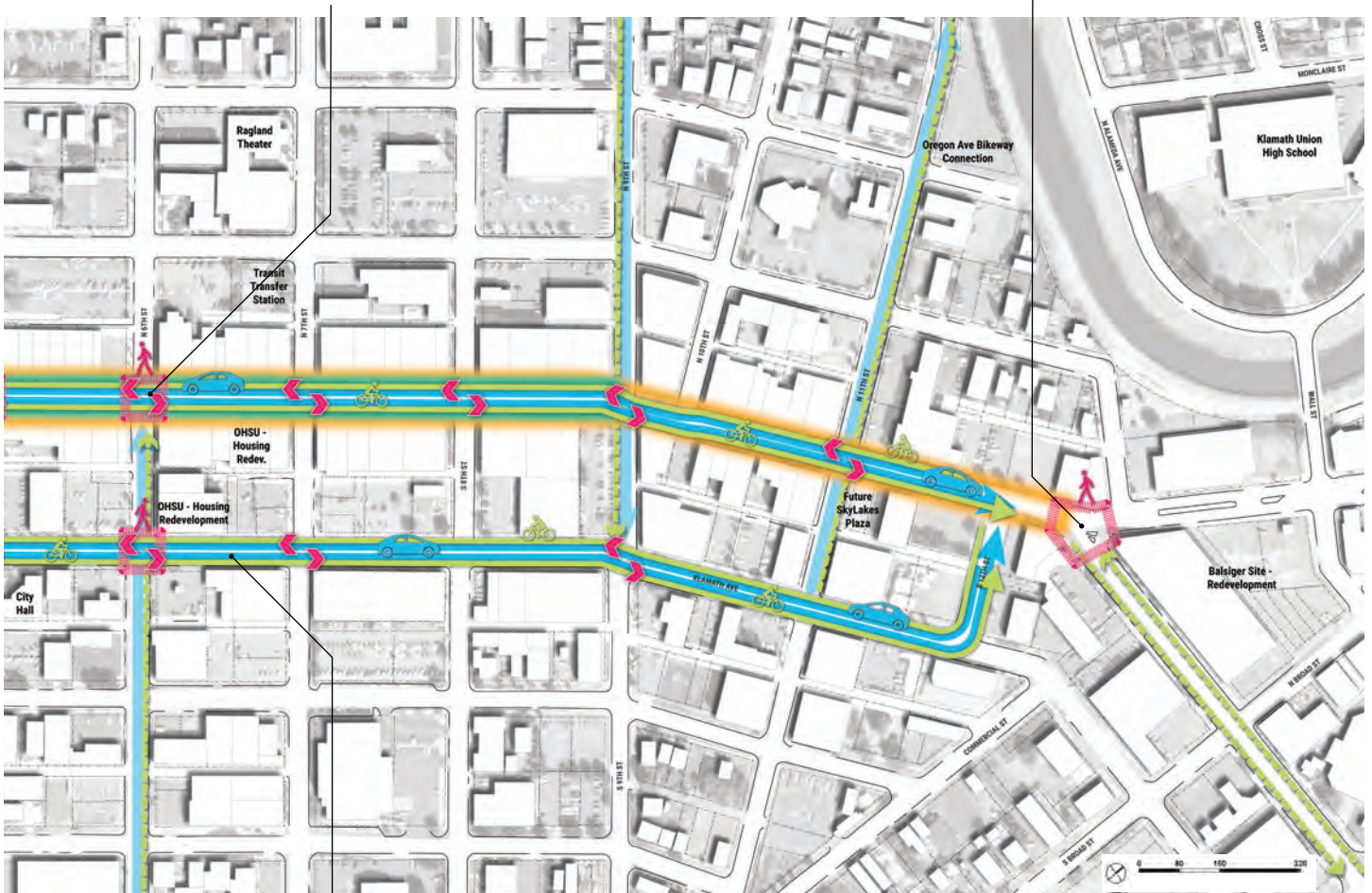


“South Gateway” Improvements with better crosswalks, welcome and wayfinding signage, and safety enhancements for turning vehicles. New traffic controls will be needed to safely merge and diverge new two-way lanes.

Regional Bikeway Connections will be made with tie-ins from the Main and Klamath bike lanes to previously-planned bike routes on 5th, 6th, 9th, and 11th.

Crosswalks and Curb Extensions will help improve pedestrian crossings, slow traffic, and make a safer downtown. These changes are particularly suitable on Main Street in the business core between 2nd and 11th.

“North Gateway” Improvements will help with pedestrian safety and signage and wayfinding can create a more welcoming entrypoint to the north entrypoint of Downtown.



Bicycle Lanes can fit on both streets with the conversion to two-way and adjustment of some angle parking to parallel. Klamath Avenue can fit bicycle lanes protected by on-street parking.

TWO-WAY CONCEPT RENDERING (VIEW NORTHEAST ON MAIN FROM 6TH)

Below is a concept illustration of various traffic flow changes and safety improvements that could be part of a Main Street two-way conversion.

Direction Conversion from one-way to two-way flow provides more direct access to destinations and preserves on-street parking options.

New Traffic Signals will be needed to control two-way traffic flows on Main and Klamath



Curb Extension to shorten pedestrian crossing distances, calm traffic, and provide additional sidewalk space for trees, benches, and other basic sidewalk needs.

Bike Lanes with high-visibility markings through intersection zones.

One-Way to Two-Way Conversions

Throughout this project, the community has expressed interest in street safety improvements regardless of future one-way or two-way traffic flows. Subsequent pages describe specific design treatments (such as curb extensions, lane width narrowing, and protected bicycle lanes) that are mostly relevant for any type flow.

Starting after World War II, many communities converted their Main Streets from two-way flow to one-way flow, with the thinking that it would better accommodate car access and make it easier to travel through downtowns to businesses and destinations. While it was true that it often made it easier to drive through downtowns, it did not make it more appealing for people to stop and patronize local businesses. In made streets less safe and encouraged people to hurriedly drive *through* town instead of stopping to visit.

Starting in the 1970s some cities began re-converting their downtown streets back to two-way, in the hopes of boosting business activity and making streets more pedestrian friendly. In most cases these efforts were a success, helping spur the movement of businesses and residents back to downtown areas. Klamath Falls is in a similar situation having converted to one-way streets in the 1970s and seeing a hollowing-out of downtown businesses. From a purely economic development perspective, the City and community may very well want to further explore options for two-way conversion on Main Street and Klamath Avenue.

SELECTED OUTCOMES OF TWO-WAY CONVERSION PROJECTS

- “We have twice as many people going by as they did before.” - Lee Coulthard, Chairman of Vancouver (Washington) Downtown Association
- “One-way streets should not be allowed in prime downtown retail areas.” - Rebecca Ocken, Executive Director of Vancouver (Washington) Downtown Association
- A 2014 study in Louisville, Kentucky, found that “the risk of a crash is twice as high for people riding [bicycles] through neighborhoods with these one-way streets.” (The Washington Post, 4/17/15)

TABLE 1: How One-way to Two-way Conversions Affect Main Streets

COMMUNITY	POPULATION	VACANCY RATE		REMARKS
		Before	After	
Sheridan, Wyo.	14,000	25%	1%	Traffic increase of 200%.
W.Palm Beach, Fla.	85,000	80%	0%	Positive impact on reducing drug use.
Lafayette, Ind.	50,000	20%	15%	Manager reports positive results.
Washington, Mo.	12,000	30%	2%	Business is very supportive.
Anniston, Ala.	26,400	6%	1%	Even those who opposed conversion now support it.
North Little Rock, Ark.	61,700	75%	60%	

Source: Ted Brovitz, Survey of communities.

This table sourced from *Main Street News*, The Monthly Periodical of the National Trust's National Main Street Center. June 2002 edition.

EXAMPLE: Oregon City, Oregon - Before (top) and After (bottom)

“A two-way Main Street became a unifying characteristic of our downtown marketplace. It’s a physical connection that benefits all downtown. Downtown Oregon City is evolving into a retail and restaurant friendly marketplace” - Lloyd Purdy, Main Street Oregon City



BENEFITS OF TWO-WAY STREETS

- Reduces vehicle speeds and severe collisions
- Increased safety for people walking and bicycling
- Improved visibility of and access to businesses; helps create a more balanced development pattern
- More direct vehicle and bicycle access
- More flexible options for on-street parking and access to driveways and off-street lots

BENEFITS OF ONE-WAY STREETS

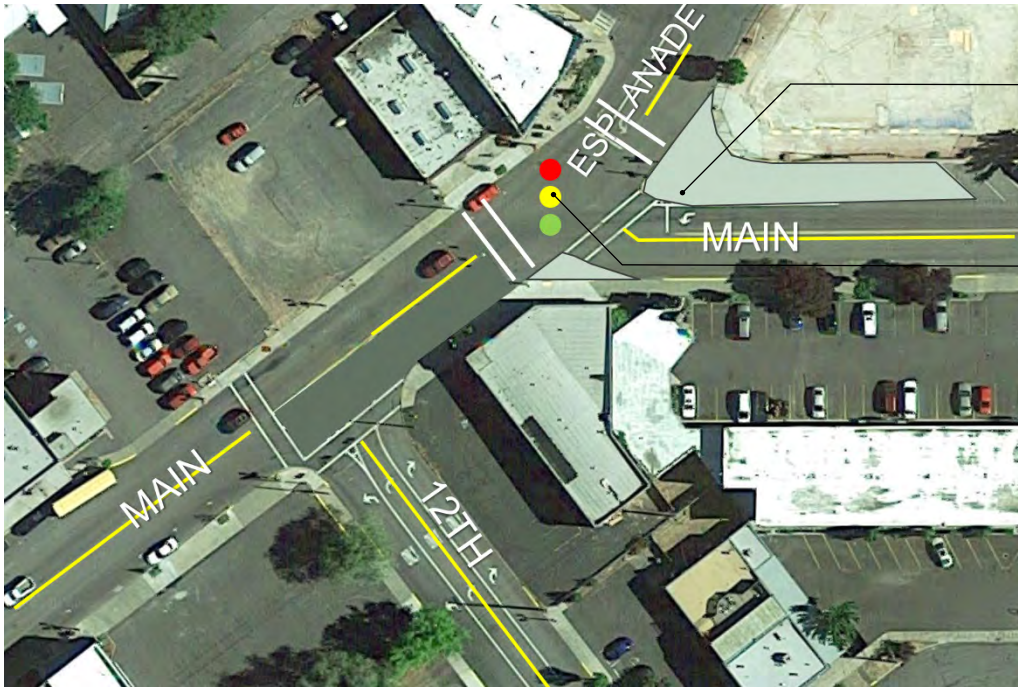
- More vehicle throughput
- Less cost and operational complexity with traffic signals and roadway markings
- Potentially better truck access and use of loading zones and on-street deliveries
- Possibly more space to construct dedicated protected bike lanes in the street

COMPLETED ONE-WAY TO TWO-WAY CONVERSIONS

- Ann Arbor, MI
- Austin, TX
- Boise, ID
- Camas, WA
- Colorado Springs, CO
- Great Falls, MT
- Lafayette, IN
- Oregon City, OR
- Sheridan, WY
- Redmond, WA
- Vancouver, WA
- Walla Walla, WA

North and South Gateway Changes

Conversion to two-lane will require some lane and signal changes at the North Gateway (Main and Esplanade) and South Gateway (where Main currently diverges from two-way to a one-way couplet). The below diagrams illustrate possible reconfigurations.



Built curb extensions clarify traffic flow and make walk crossing easier

Traffic signal maintained and adjusted to control additional two-way flows

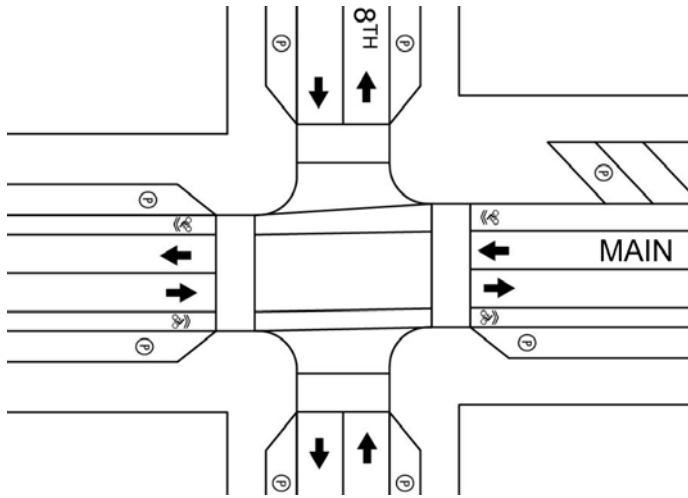


Two-way flow established on the primary branch of Main Street

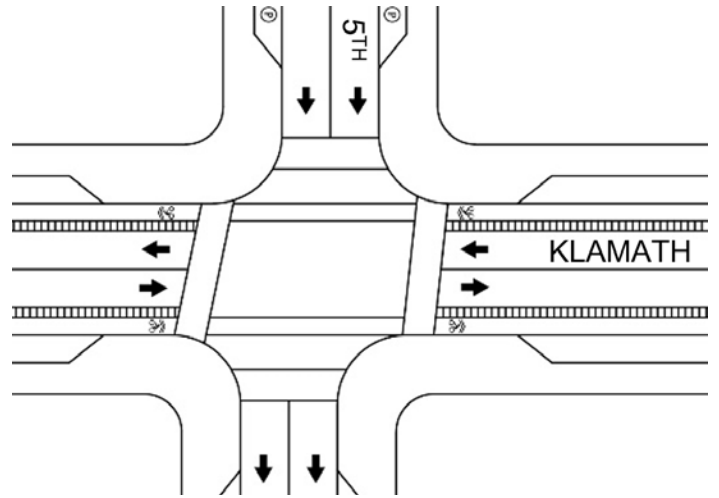
Redirect exit ramp from Highway 97 northbound

Street Designs - Plan Views

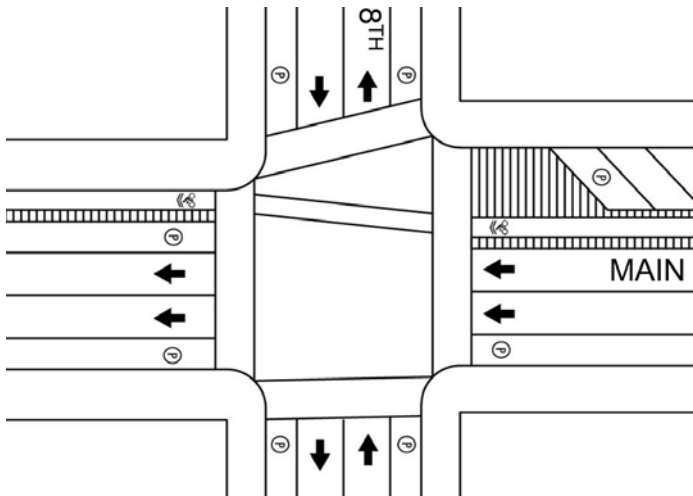
Below are several top-down view design options for Main Street and Klamath Avenue in one-way and two-way configurations.



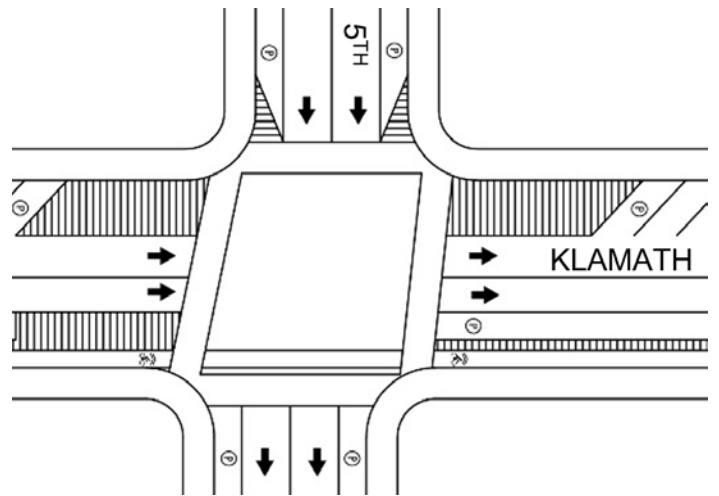
CONCEPT - MAIN STREET, TWO-WAY WITH BIKE LANES



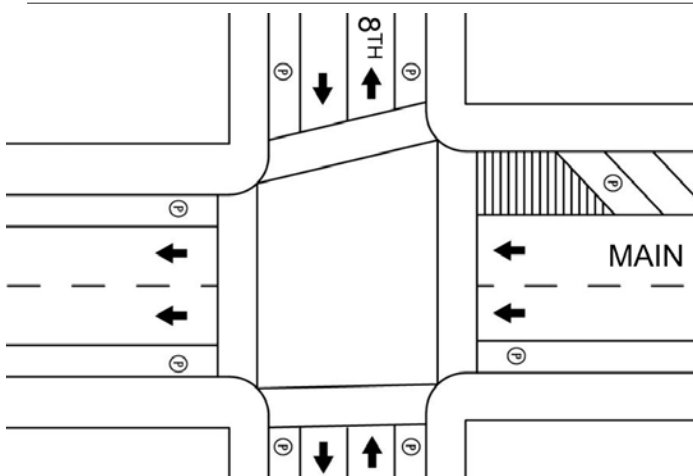
CONCEPT - KLAMATH AVENUE, TWO-WAY, PROTECTED BIKE LANES



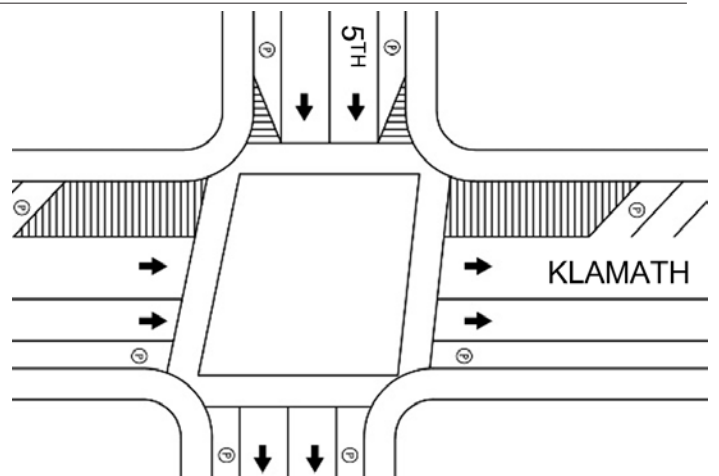
CONCEPT - MAIN STREET, ONE-WAY WITH PROTECTED BIKE LANE



CONCEPT - KLAMATH AVENUE, ONE-WAY WITH PROTECTED BIKE LANE



EXISTING - MAIN STREET (ONE-WAY)



EXISTING - KLAMATH AVENUE (ONE-WAY)

A Timeline for Better Downtown Streets

Substantial and permanent changes to street designs and operation can take many years, but require some steps to begin as soon as possible. The citizens of Klamath Falls can build stronger community ties by working together to envision, design, test, and implement improvements to Main and Klamath.

STEPS TO TAKE		WHEN
1.	Establish streetscape and transportation goals that promote safety, access to destinations, and the creation of a welcoming place. It is vital at the outset to have a clear vision for your streets in mind and to get broad public support for those overall goals.	0-2 Years
2.	Create concepts for your streets showing designs, traffic flow, pedestrian and bicycle movements, gathering places, and operations. Klamath Falls will want to conduct further design work on both one-way and two-way flow improvement options. Most goals and measures of success will be the same regardless of one-way or two-way traffic.	0-2 Years
3.	Evaluate the concepts against the goals and objectives. This includes not only how effective the changes will be at improving safety and transportation, but also creating vibrant public spaces, spurring economic development, and simply being feasible and cost-effective based on community needs.	0-2 Years
4.	Reach out to property owners, schools, residents, businesses, and other stakeholders to get more input on the designs and discuss how street changes may affect them for good or bad.	0-2 Years
5.	Refine your concept based on this additional input. Think about not only the design and operations but also construction impacts, timeline, cost, and other factors.	0-2 Years
6.	Conduct traffic modeling and transportation analysis to see how people in cars, on foot, and on bikes will move through the network. Test intersections for throughput, safety, and to make sure trucks can fit through them if that is your goal.	1-3 Years
7.	Implement and test any interim/pop-up strategies. Many people in Klamath Falls have shown favor towards installing quick and cheap street improvements such as temporary curb extensions, street seats, crosswalk markings, and bicycle lanes. These types of projects can help test the effectiveness of designs and can build awareness and public support of the bigger project.	0-2 Years
8.	Identify funding sources for the improvements. These could be local taxes, general fund, or bonds; state highway and active transportation funds; federal sources (especially if transit is involved); and less obvious sources including parks funding, economic development agencies, school capital projects budgets, social and health agencies, and others.	2-5 Years
9.	Inform the public about what will happen during and after the project and how it will impact them. Some property owners will have significant concerns about negative construction impacts, lost business, and a changing Downtown. Work with all affected parties to find compromise solutions to make the project work to everyone's benefit.	Throughout
10.	Construct the project using the schedule and phasing that best keeps costs low, reduces street impacts and delays during the build period, and best allows Downtown to keep functioning through construction. Pay extra attention to construction scheduling around Klamath Falls' cold winters, school terms, and big public events.	2-10 Years
11.	Maintain and activate the street. Don't just finish construction and leave the streets unattended. Be sure to maintain them, pick up trash, and study if the new traffic flows and facilities are working. If not, adjust them.	2+ Years
12.	Celebrate. You've finished a long and difficult process. Celebrate your street and the people who made it happen. Plan events and parties downtown to draw people in and work throughout the city to support businesses and residents who locate nearby.	Throughout

Quick-Fixes and Pilot Projects



Demonstration buffered two-way bicycle lane.



A “Slow Your Streets” demonstration in St. Louis, Missouri (image source: Trailnet)



Example curb extension in Portsmouth, New Hampshire

The street design and safety improvements discussed on the previous pages are ideal potential improvements to test using “tactical urbanism” techniques, more plainly known as “pop-up” solutions. These are projects often undertaken collaboratively between the City, businesses, and local volunteer groups to quickly put a temporary improvement in place to test its effectiveness. For just the cost of paint, cardboard, plywood, potted plants, orange cones, flags, and/or a few other items, you can quickly designate safer and more welcoming spaces in your community.

Potential test project in Klamath Falls:

- Curb extensions in the business core along Main Street;
- Protected bicycle lanes on Klamath Avenue;
- Street seats and landscape areas in place of existing parking spots; and
- High-visibility crosswalk markings.

Useful Quick-Project Guides

- *Slow Your Streets*, TrailNet
- *Tactical Urbanist’s Guide to Materials and Design*

Demonstration Project Stages

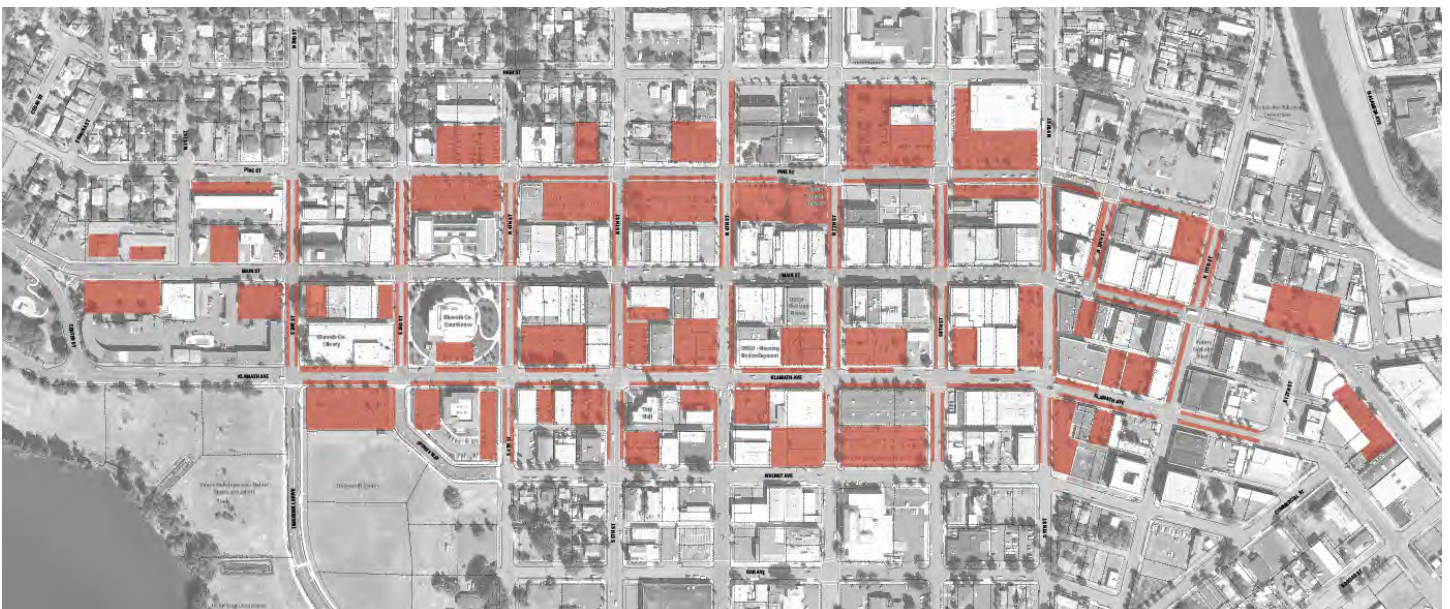
1. Problem identification and planning
2. Community engagement
3. Municipality engagement (as needed)
4. Site Plans and permitting (if needed)
5. Design, assembly, and staging
6. Demonstration installation
7. Assessment and data

Downtown Parking Strategy

Downtown Klamath Falls has an abundance of on-street and off-street parking and associated driveways. This oversupply encourages driving over other modes, creates safety hazards at driveway/sidewalk locations, and stifles site redevelopment. The below map depicts the location of parking lots and on-street spaces throughout Downtown. Strategies listed below may help the City to reach a more manageable and effective supply of parking.

PARKING OPERATION IMPROVEMENTS

- Several strategies can be employed to help manage parking supply, ensure availability and turnover, and incentivize underutilized lots to be redeveloped into buildings, open space, and other uses for people.
- As needed, relocate on-street parking to provide better access to the busiest downtown areas.
- Use on-street parking to effectively narrow the street in a “road diet”, provide protected bicycle lanes, and improve street crossing visibility and safety.
- Strategically use 1-hour, 2-hour, and 4-hour on-street limits to promote turnover while still providing enough time for visitors to linger.
- Reserve all on-street parking for visitors and customers. “E” zone parking for employees should be located on lower-visibility off-street lots.
- Klamath Falls significantly under-prices “E” zone employee parking permits. Raising prices somewhat would help cover enforcement costs and potentially create some revenue for investment in transit, sidewalks, and bicycle routes.
- Establish a Parking Benefit District in which parking prices are raised, but additional revenue is then directed to downtown improvement projects.
- Create Parking Cash-Outs for employees to receive cash incentives towards non-vehicle modes.



Areas in red show the supply of on-street and off-street parking in Klamath Falls.

Funding Sources

A range of federal and state programs are available to pursue funding and assistance for multimodal surface transportation improvements. An outline of several is below:

STATE OF OREGON FUND SOURCES

State of Oregon Transportation Improvement Program (STIP)

- Four-year funding allocation cycle for state highway improvements
- The application period for the 2018-2021 STIP recently closed; the 2021-2024 STIP application period will likely occur during 2018.

State of Oregon Quick Fix Program

Roughly \$500,000 of state funding is available annually through the Highway Safety Engineering “Quick Fix” Program, which addresses immediate safety concerns that aren’t specifically identified in State Transportation Improvement Program (STIP) plans and fund allocations. This fund allows lower-cost projects that need immediate redress to be improved without having to apply through the formal STIP process.

Eligibility for Quick Fix funds is established by several guidelines:

- Project costs typically do not exceed \$50,000
- ODOT seeks to balance funding award across the five Regions, with each receiving funding for at least one project
- Projects shall serve primarily to make immediate safety improvements
- Projects work shall be beyond the scope of what would normally be considered road maintenance
- Projects selected for funding shall demonstrate an immediate need and meet the guidance outlined in the ODOT Highway Safety Program: projects need to either fall in the top 5% benefit/cost analysis as part of the Safety Priority Index System (SPIS)
- Projects relating to pedestrian and bicycle improvements may be able to avoid the SPIS criteria if an established risk narrative can show that safety hazards to pedestrians and bicycle riders are not fully captured in crash data

Additional information about the Quick Fix program, including additional eligibility and applications requirements, is available at the below website:

http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/docs/pdf/odot_safety_program_guide.pdf

FEDERAL FUND SOURCES

Federal Transportation Alternative Program

- Roughly \$850M annually available nationwide for multimodal improvement projects
- Non-urban areas, such as Chiloquin is defined, apply directly to the State of Oregon in a competitive allocation process
- The State awards funding for improvements related to:
 - Bicycle & Pedestrian Facilities: including sidewalks, bike lanes, trails, lighting, crossings, ADA access, signalization/signage, and traffic calming
 - Safe Routes for Non-Drivers: Infrastructure and programs that help children, the elderly, and the disabled meet daily access needs.
 - Recreation Trails Program
 - Safe Routes to Schools: infrastructure, education, enforcement, encouragement, and administration

LOCAL SOURCES

A key early step for any significant transportation initiative in Klamath Falls will be to ensure general compliance with key Transportation System Plan (TSP) goals, outlining safety, multi-modal improvements, environmental sensitivity, and reduced reliance on vehicles while spurring economic growth.

The TSP, available online at klamathfallstsp.com, summarizes a number of funding sources that may be project-specific or part of a general fund.

- City System Development Charges that capture funding from development fees
- Surface Transportation Program (STP) federal funding channeled through ODOT to the City. This has ranged near \$200,000 annually.
- Klamath County Secure Rural Schools Fund (Federal Forest Receipts) are a historic funding source that has been significantly reduced in the past decade. It is constraining County capital and operations budgets and will necessitate pursuing other sources.

Planning Level Cost Forecasts

Approximate Cost Ranges

Both one-way and two-way options would benefit greatly from curb extensions, bicycle lanes and buffered bicycle lanes, crosswalk enhancements, and signal re-timing. This could at a baseline cost between 800 thousand and 1.2 million in construction costs, not including planning and design work. The two-way option would require new traffic signals and additional pavement markings that may add upwards of 600 thousand dollars to the project cost.

Below are rough magnitude costs for some of the specific design treatments discussed in the preceding pages.

Bicycle lane

\$12-\$15 per linear foot per side, including grinding of old pavement markings, new lane lines, signage, and storm grate upgrades.

IN KLAMATH FALLS

- Approximately 8,350 linear feet (4,400 ft on Main; 3,950 feet on Klamath): ~\$125,000 (exclusively and not including signal changes or any curb reconstruction)

Buffered bicycle lane

\$20-\$25 per linear foot per side; \$40-45 per linear foot for two-way bike lanes - including grinding of old pavement markings, new lane lines, signage, storm grate upgrades, and flexible bollard posts installed.

IN KLAMATH FALLS

- Approximately 8,350 linear feet (4,400 ft on Main; 3,950 feet on Klamath): ~\$209,000 (exclusively and not including signal changes or any curb reconstruction)

Curb extension

\$2,000-\$20,000 per corner. A corner needing only concrete curb reconstruction and curb cuts will be closer to \$2,000. A corner needing major stormwater drain and pipe relocations will be closer to \$20,000.

IN KLAMATH FALLS

- Approximate costs for curb extensions at key locations (Main/Esplanade, and Main and Klamath at 5th and 6th): ~\$200,000
- Adding curb extensions on Main and Klamath at 9th, 11th, and 12th may cost ~\$260,000.
- The south end gateway where Main Street diverges is a more complex project potentially involving significant curb reconstruction, stormwater relocation, and signalization. This project could range from one-quarter to one-million dollars.

New traffic signal heads

\$50,000 per intersection. Conversion to two-way traffic will require new traffic signal heads for the new “opposing” direction of flow. On Main Street most of the poles are already in place, so only new span wires and signal displays would be needed if the existing poles are structurally sound.

IN KLAMATH FALLS

- Two-way conversion will likely require between 10-13 signal location adjustments to control bi-directional flow. This could cost \$500,000-\$650,000 across the entire downtown project area.

Traffic signal re-timing

\$2,000-\$4,000 per location. The City may consider adjusting signal timing to better accommodate bicycle traffic in particular. Re-timing uses existing hardware but requires study, reprogramming costs, and evaluation.

IN KLAMATH FALLS

- Roughly 13 signal locations would need to be re-timed for improved one-way flow if one-way bicycle lanes were constructed on Main and Klamath. This could cost in the range of \$40,000.

Crosswalk brick paver treatments

\$15-\$25 per square foot. Some Klamath Falls intersections feature red brick paver insets in crosswalks. These are the costs to apply that treatment to other locations. Excavation and installation would be required. An average single crosswalk in downtown could be 360-500sf. The street subsurface foundation may also need to be upgraded, at additional cost.

IN KLAMATH FALLS

- Each 4-corner intersection in Klamath Falls could cost ~\$32,000 to resurface with brick pavers in the crosswalks. In total is could cost \$192,000-\$300,000 to install pavers at key locations at the south-end Main Street gateway; Main/Explanade; and the 5th, 6th, 9th, and 11th Street intersection with Main and Klamath.

Street seats

\$500-\$10,000 each. Street seats can be low-cost DIY installations or fully designed and installed modules with high-grade seating, fencing, canopies, decking, and other traffic protection.

Street signage

\$300-\$800 per location. Street signs for wayfinding and to define the Downtown Loop likely require new post installations and/or adjustments to overhead support wires.

IN KLAMATH FALLS

- Klamath Falls may need anywhere from 8-20 signs throughout as part of Downtown Loop wayfinding. This could cost \$4,000-\$12,000.

*All costs are estimates based on project examples from around the United States. Costs and conditions in Klamath Falls will vary.

