



MOORE PARK TO
DOWNTOWN KLAMATH
FALLS CORRIDOR PLAN

A ROAD
MAP FOR
HEALTHY
LIVING



KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

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This plan was driven by members of the Klamath Falls community who attended public meetings, provided feedback, and volunteered their time to disseminate information about the Corridor Plan.



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INTRODUCTION

Advancing health and longevity is a vital goal for every community, and the Klamath Falls area is on a roll. In recent years, Healthy Klamath, a collaboration of organizations, citizens, agencies, healthcare providers, and businesses, has been working in multiple channels to improve health outcomes in Klamath County. Recently, Healthy Klamath partnered with the Blue Zones Project, an initiative to leverage lessons learned from longevity hotspots across the world – places where people live longer and healthier than anywhere else. Klamath Falls was fortunate to be the first Blue Zones Project demonstration community selected in Oregon. Together, the town is seeking to make the healthy choice easier, so people can live longer with an improved quality of life.

This document, the Moore Park to Downtown Klamath Falls Corridor Plan, is the result of Healthy Klamath's community-driven effort. It presents a concept design for a low-stress, all-ages-and-abilities bicycle route between downtown Klamath Falls and Moore Park – a route that will expand opportunities for daily active transportation in areas where they are currently limited. This plan represents an important step toward a more active and vibrant Klamath Falls.

It's just one step, however.

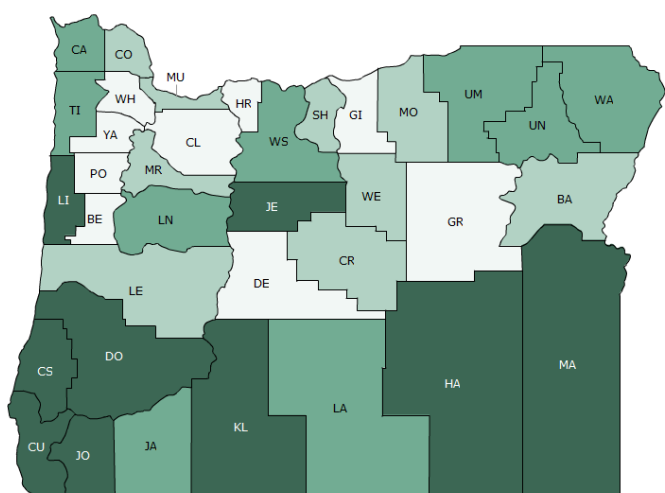
To fully realize the vision, collaboration will need to continue and broaden. We will need to draw in funding and resources not only to implement this envisioned design, but also to build momentum for ongoing projects that continue to make the healthy choice the easy choice.

Inside this document, you'll find the following:

- > **Background** on Healthy Klamath's selection of the Moore Park to Downtown Klamath Falls corridor and the protected bike lane treatment.
- > A description of the **planning process** that inspired this Corridor Plan, including plan objectives, an assessment of existing conditions, and the public engagement process.
- > A description of the **preferred concept design**, selected from a number of alternative ideas, and the proposed treatments along the route. A conceptual engineering design for the full corridor is included in Appendix A.
- > **Next steps** toward implementation of the project.

BACKGROUND

Healthy Klamath>>> Sky Lakes Medical Center, Klamath County Public Health, Klamath Open Door Family Practice, and Cascade Health Alliance partnered to lead Healthy Klamath, a community-based effort to improve the health and well-being of Klamath County residents. The group acts as an information source and collaborates to inspire better health outcomes. Current and former initiatives include projects related to healthcare access, socioeconomic and environmental factors, recreation, and the creation of a healthy culture.



Rank 1-9 Rank 10-18 Rank 19-27 Rank 28-36

We can do better

In 2016, Klamath County was ranked **35th** out of **36** Oregon counties in overall health outcomes.

Yet Klamath's clinical care is **roughly average: 19th** out of **36** counties,¹ suggesting that the solution lies outside of traditional medicine.

Healthy Klamath partners realized that health outcomes could be most impacted by improving the community's built environment — the places where residents live, work, and recreate. In doing this, the team focused on disease prevention, rather than simply waiting until people got sick.

In 2013 and 2015, the group published Community Health Assessments. Transportation and the built environment were identified as two key factors requiring improvement and having a close connection to community health outcomes.

¹County Health Rankings & Roadmap, a collaboration of the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. www.countyhealthrankings.org.

Study
Corridor

Diabetes

Heart Disease

High Blood Pressure

High Cholesterol

High percentages of health issues cluster along the existing corridor

Oregon Institute of Technology partnered with Healthy Klamath to map the incidence of preventable diseases in Klamath County, overlaying these indicators with a walkability score. These maps led to the idea of a protected bicycle lane, transecting some of the least healthy neighborhoods and connecting downtown Klamath Falls to Moore Park. The protected bicycle lane has the potential to improve physical activity, connectivity, and the economy of the community.

RATE OF NEGATIVE HEALTH INDICATORS



Cost of Care

Obesity

Smoking

Stroke

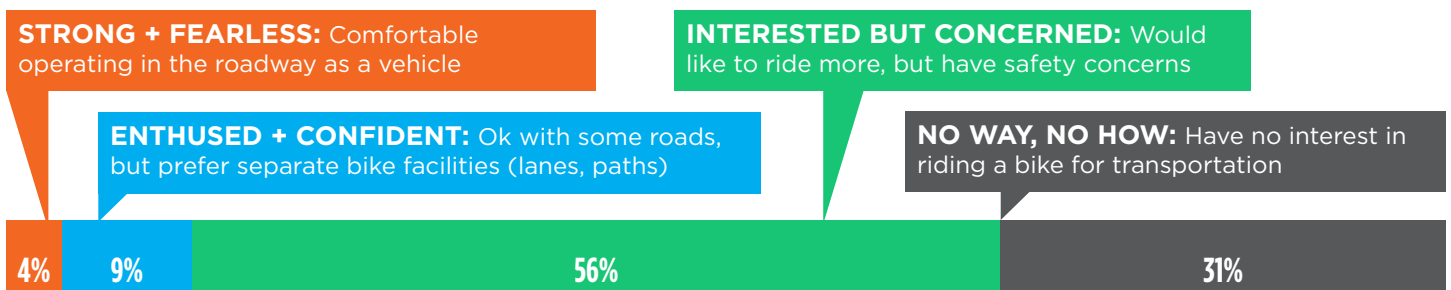
Why protected bike lanes?

PROTECTED BIKE LANES MAKE 96% OF RIDERS FEEL SAFER¹



In order to serve a range of ages and abilities, cities need to build a network of low-stress bike routes. Protected bike lanes are a way to create on-street bike routes that feel safe to all types of people. A protected bike lane could expand potential ridership from 4% to 69%.

Would you ride a bike for transportation? How Americans respond²



POTENTIAL RIDERS NOW:

4%

POTENTIAL RIDERS WITH PROTECTED BIKE LANE:

69%



¹ *Lessons from the Green Lane: Evaluating Protected Bike Lanes in the U.S.* National Institute for Transportation and Communities (2014).

² Based on *Four Types of Cyclist, Testing a Typology to Better Understand Bicycling Behavior and Potential.* Jennifer Dill, Ph.D and Nathan McNeil, Portland State University.

PROTECTED BIKE LANES

Support the economy



Potentially decrease healthcare costs



Can increase retail sales, foot and bike traffic, and decrease commercial vacancies



Can attract new people and businesses

Contribute to health



Increase physical activity



Provide connections to green space



Reduce crashes



May reduce emissions

Provide proven safety benefits for all road users



Vehicle speeds are slower



Pedestrian crossing distance decreases



Total crashes decrease in locations with protected bike lanes vs. those without



People riding bikes are physically separated from vehicles, increasing safety

Popping up in Klamath Falls



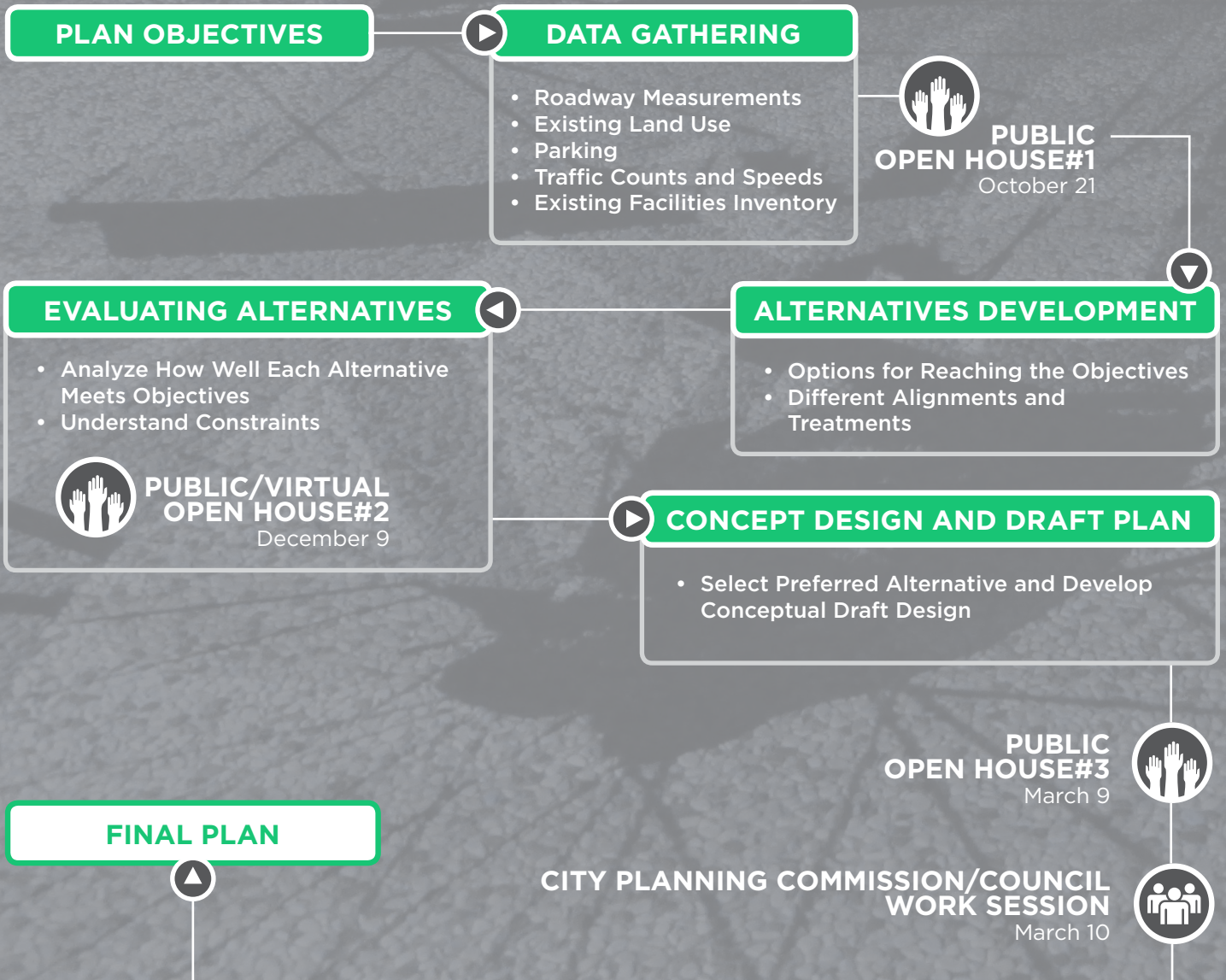
In June 2015, Sky Lakes and Healthy Klamath partnered with Klamath Falls to do a pilot demonstration of a protected bike lane during Klamath Falls' Third Thursday Downtown event. The "pop-up" protected bike lane, made of planter boxes, demonstrated the idea of a protected bike lane and helped build awareness and public support for the idea.



PLANNING PROCESS

Based on the density of lifestyle-related chronic diseases in Klamath Falls neighborhoods (as shown by the OIT maps), as well as public support for protected bike lanes, Sky Lakes and their funding partner, Cambia Health Foundation, moved forward with the corridor plan. The plan, outlined in this document and its appendices, included significant community involvement and feedback, helping move the collaborative project closer to successful implementation.

The Moore Park to Downtown Klamath Falls Corridor Plan is the result of this on-going collective community effort to improve health outcomes, physical activity, and the economy in Klamath Falls.



OBJECTIVES

1

Improve the **comfort** of biking, walking, and driving for a wide range of people along the study corridor

Most people who had driven on a street with a protected bike lane believed it made people act safer and more predictable.¹

2

Provide daily opportunities for **increased physical activity**

One San Francisco study found that increasing biking and walking from 4 to 24 minutes a day on average would reduce cardiovascular disease and diabetes by 14%.²

3

Spur **economic development opportunities**

Salt Lake city found that sales tax receipts went up by 1.5 percent after a protected bike lane was built on Broadway.³

¹Lessons from the Green Lane: Evaluation Protected Bike Lanes in the U.S. National Institute for Transportation and Communities. June 2014.

²Health Co-benefits and Transportation-Related Reduction in Greenhouse Gas Emissions in the San Francisco Bay Area. Maizlish, N. et al, 2012

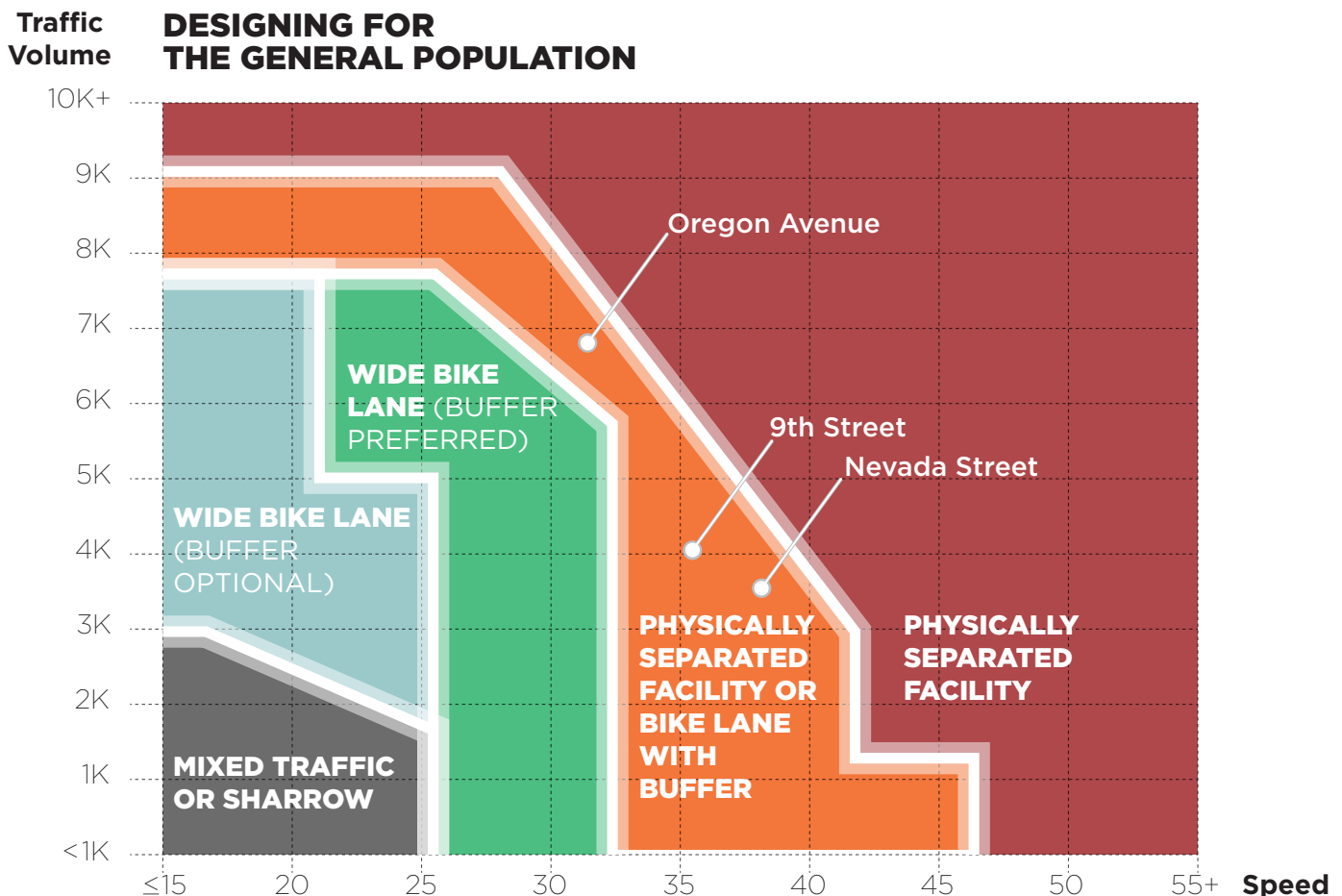
³<http://www.peopleforbikes.org/blog/entry/salt-lake-city-street-removes-parking-adds-bike-lanes-and-sales-go-up>.

EXISTING CONDITIONS

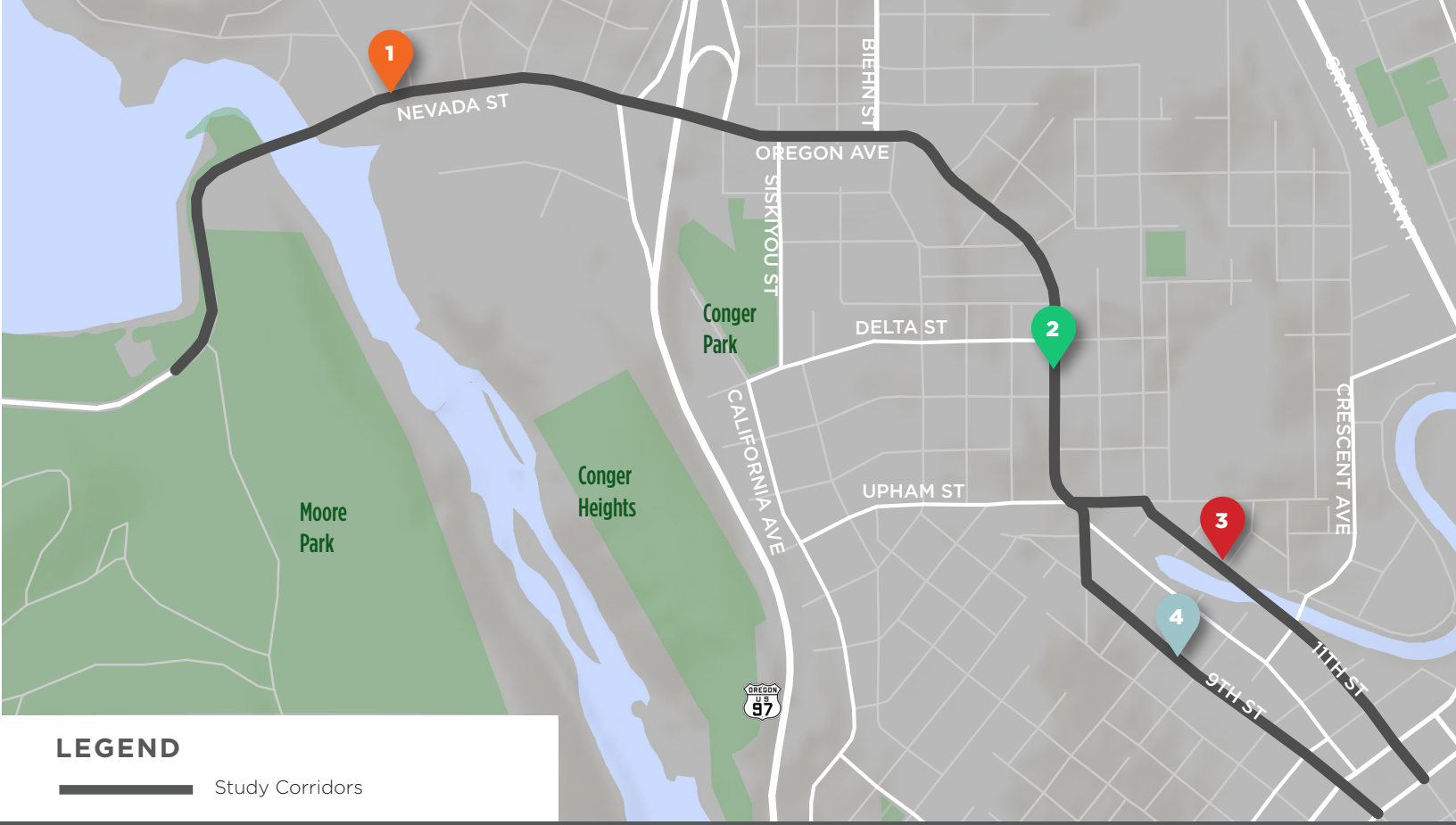
To inform the development of potential alternative solutions, the project team thoroughly analyzed and inventoried existing conditions in the study area, shown at right. The analysis reviewed:

- Presence, widths, and uses of various components of the roadway, including pavement, travel lanes, bike lanes, on-street parking, and sidewalks.
- Number of vehicles traveling on the streets throughout the day, their travel speeds, and how many were trucks or heavy vehicles.
- Number and type of reported crashes over the previous five-year period.

One key finding was that *both the average and 85th percentile¹ speeds are well above the 25-mph speed limit* on all segments of the study corridor. Based on these typical speeds and volumes found in the corridor (shown below), a protected, physically-separated bike lane was confirmed to be an appropriate treatment, with the goal of designing the street to be comfortable for a broad range of people. Full documentation of the existing conditions analysis is included in Appendix B, the Existing Conditions Memorandum.



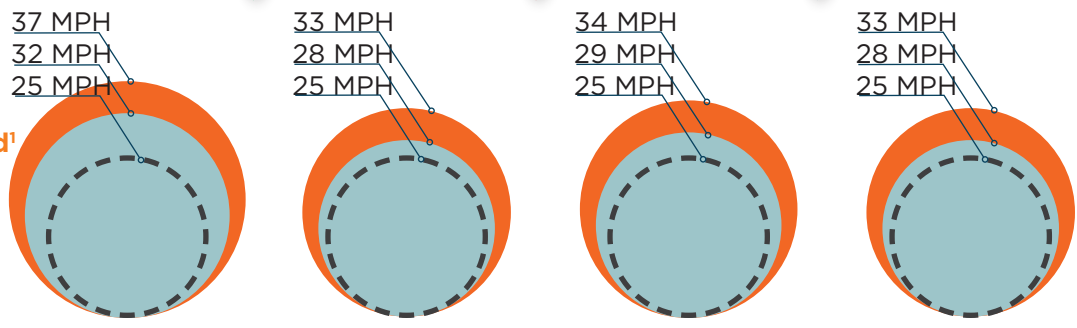
Based on *Four Types of Cyclist, Testing a Typology to Better Understand Bicycling Behavior and Potential*. Jennifer Dill, Ph.D and Nathan McNeil, Portland State University. Originally developed for *Montgomery County Bicycle Planning Guidance*. Montgomery County, MD.



1 NEVADA STREET 2 OREGON AVENUE 3 11TH STREET 4 9TH STREET

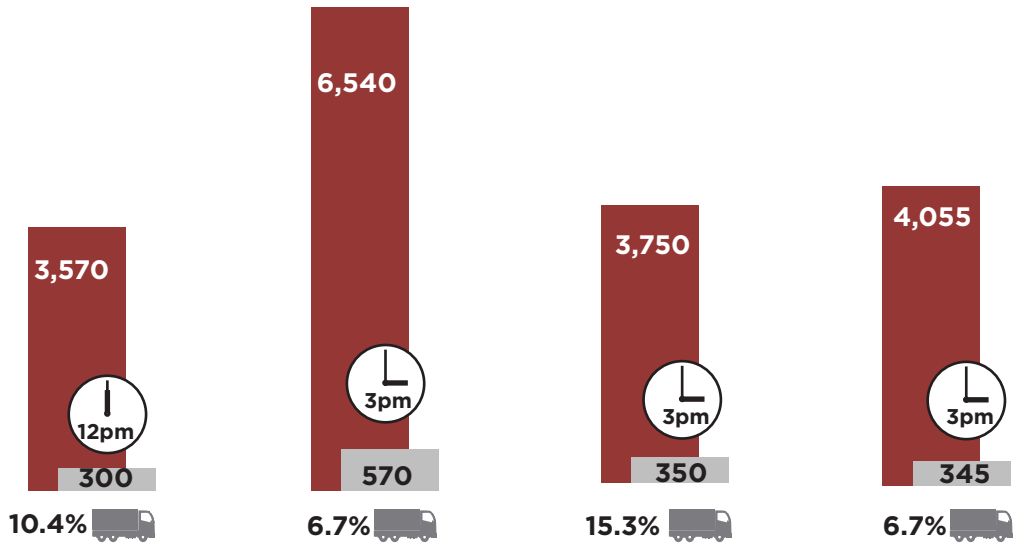
VEHICLE SPEEDS

85th Percentile Speed¹
 Average Speed
 Speed Limit



TRAFFIC VOLUMES (# OF VEHICLES)

Daily Traffic
 Peak Hour Traffic
 Heavy Vehicles



¹The 85th-percentile speed is considered the speed at which a reasonable and prudent driver would operate during free-flow conditions and is often used to inform the setting of speed limits.

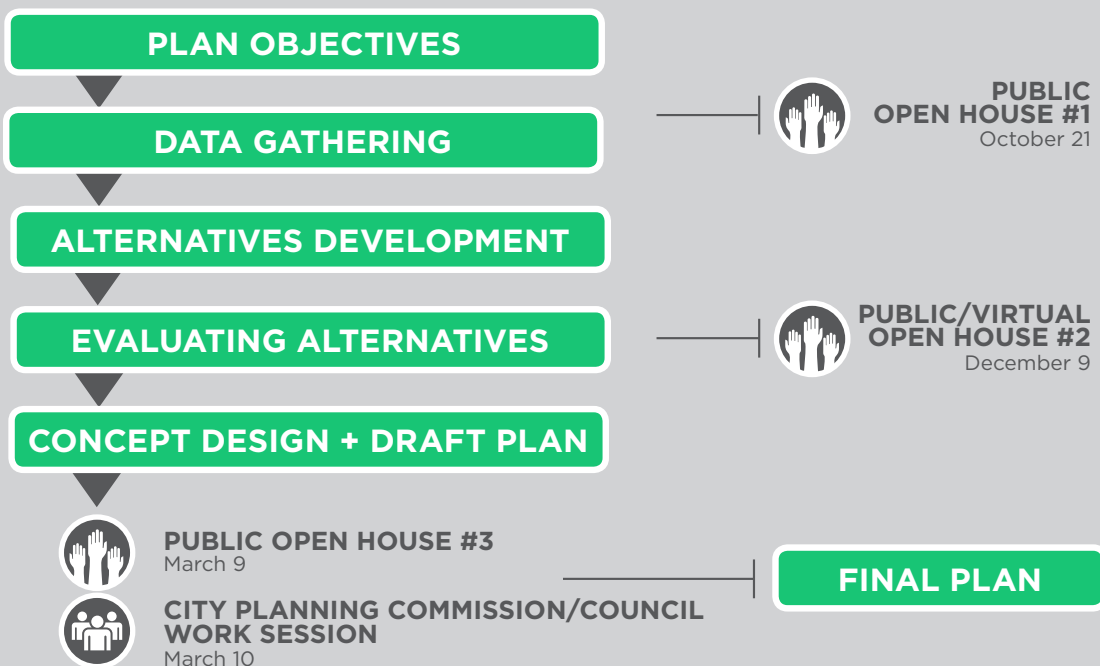
A COMMUNITY DRIVEN PLAN

During the development of this plan, the project team held three public open houses and one virtual open house to engage the surrounding community in creating and selecting the preferred concept design (illustrated in Appendix A). The initial data gathering, existing conditions analysis, and input from Public Open House #1 led to the development of five different design concepts that would potentially fulfill the objectives of the corridor plan. The project team, in collaboration with the City, analyzed each concept, including impacts on traffic lanes and operations, on-street parking, maintenance considerations, access to businesses, visibility, vertical grades, and general implementation costs.

At Public Open House #2, community members weighed in on the options, based on their local knowledge. This input, along with more detailed analyses of the alternative concepts, led to the initial selection of a “preferred” concept that included a two-way protected bike lane from Moore Park to Downtown Klamath Falls on Lakeshore Drive, Nevada Street, Oregon Avenue, and 9th Street.

At Public Open House #3, the project team shared the preferred concept and received *near unanimous support* from open house attendees. The remainder of this document shares the features of the preferred concept and outlines the implementation strategy.

A more detailed summary of the public engagement and alternatives development and analysis processes can be found in the Alternative Concept Development & Evaluation Technical Memorandum included as Appendix C. Summaries of all public meetings are included as Appendix “D.”

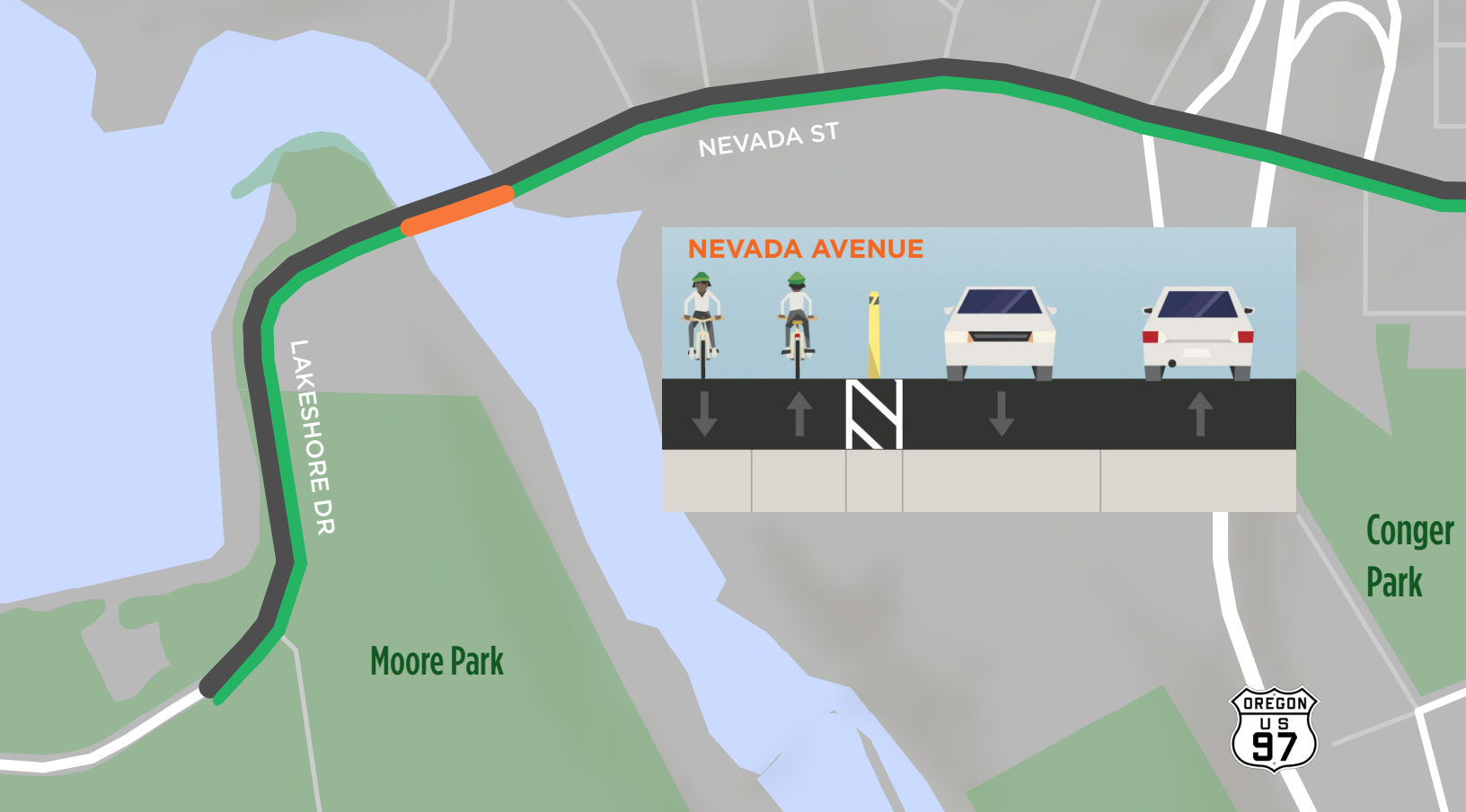




“I truly hope that a protected bike lane from Moore Park to downtown can be created. My family would use it regularly.”

- open house attendee

“I want to see this happen!!!”
open house attendee





A TWO-WAY PROTECTED BIKE LANE is recommended for the west side of 9th Street and Oregon Avenue and south side of Nevada Street and Lakeshore Drive to maintain a continuous route with minimal road crossings and minimal conflicts between people walking, biking, and driving.

A FLEXIBLE DESIGN with slightly narrow lane widths within the protected two-way bikeway will accommodate on-street parking on one side of Oregon Avenue. It will also minimize the need to widen narrow sections of Nevada Street. A minimum width of 8 feet is recommended by the Urban Bikeway Design Guide, 2nd Edition published by the National Association of City Transportation Officials (NACTO), and this width will be met or exceeded throughout the entire corridor.

A NEW BICYCLE AND PEDESTRIAN BRIDGE DECK is included on the south side of the bridge over the Link River. If the addition is not feasible, then a crossing of Nevada Street would need to be provided on the east side of the bridge so that people bicycling westbound could transition across the street to ride on the right (north) side of the street. In this scenario, one-way protected bike lanes would extend from the west side of the bridge into the park, replacing the preferred protected two-way lane on Lakeshore Drive.

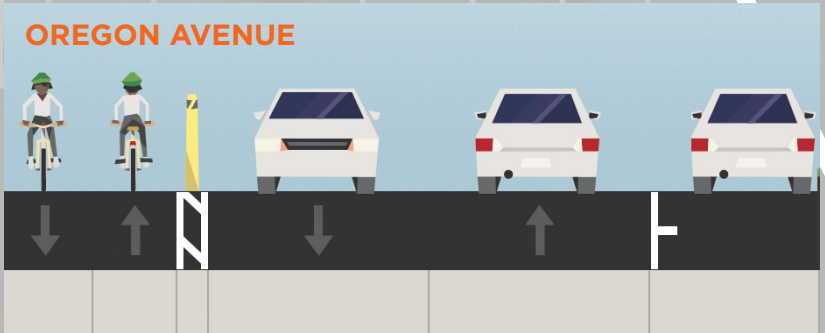
LEGEND

-  Two-Way Protected Bike Lane
-  Shared-Use Path (New Bridge Deck)

PREFERRED CONCEPT

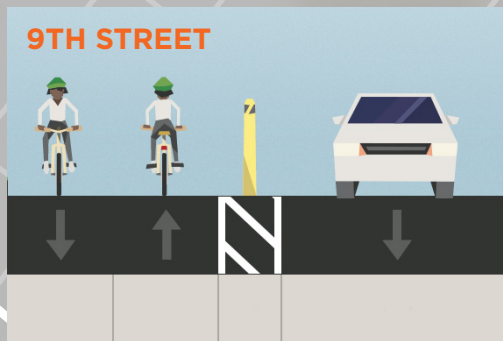
MAINTAINING PARKING

The preferred concept design maintains on-street parking on the north/east side of Oregon Avenue – a level of supply that is more than adequate to meet the parking demand observed in the corridor. On the south/west side of Oregon Avenue, where on-street parking would not be permitted, each residence has off-street parking available.



THE TIME REQUIRED TO DRIVE 9TH STREET will sustain little to no impact due to the loss of a motor vehicle lane. The new design still meets the City of Klamath Falls' standard.

BIKE SIGNALS could be added at the signalized intersections of 9th Street at Pine Street and Main Street. Alternatively, people bicycling against the flow of motor vehicle traffic in the two-way bike lane may be instructed to follow the pedestrian crossing symbol at these intersections. Bike signals are not included in the cost estimate described in this plan.



What's it going to look like?



Once constructed, the Moore Park to Downtown Klamath Falls corridor will provide comfortable access for a variety of users, including people walking, biking, and driving. It will improve options for active transportation, and has the potential to bring new potential customers to the current and future businesses on the corridor.

"As a not-so-experienced biker, I love the proposal for protected bike lanes."
- open house participant



LINK RIVER BRIDGE

BEFORE + AFTER

2 BEFORE



NEVADA STREET

2 AFTER



3 BEFORE



OREGON AVENUE

3 AFTER



4 BEFORE



9TH STREET

4 AFTER

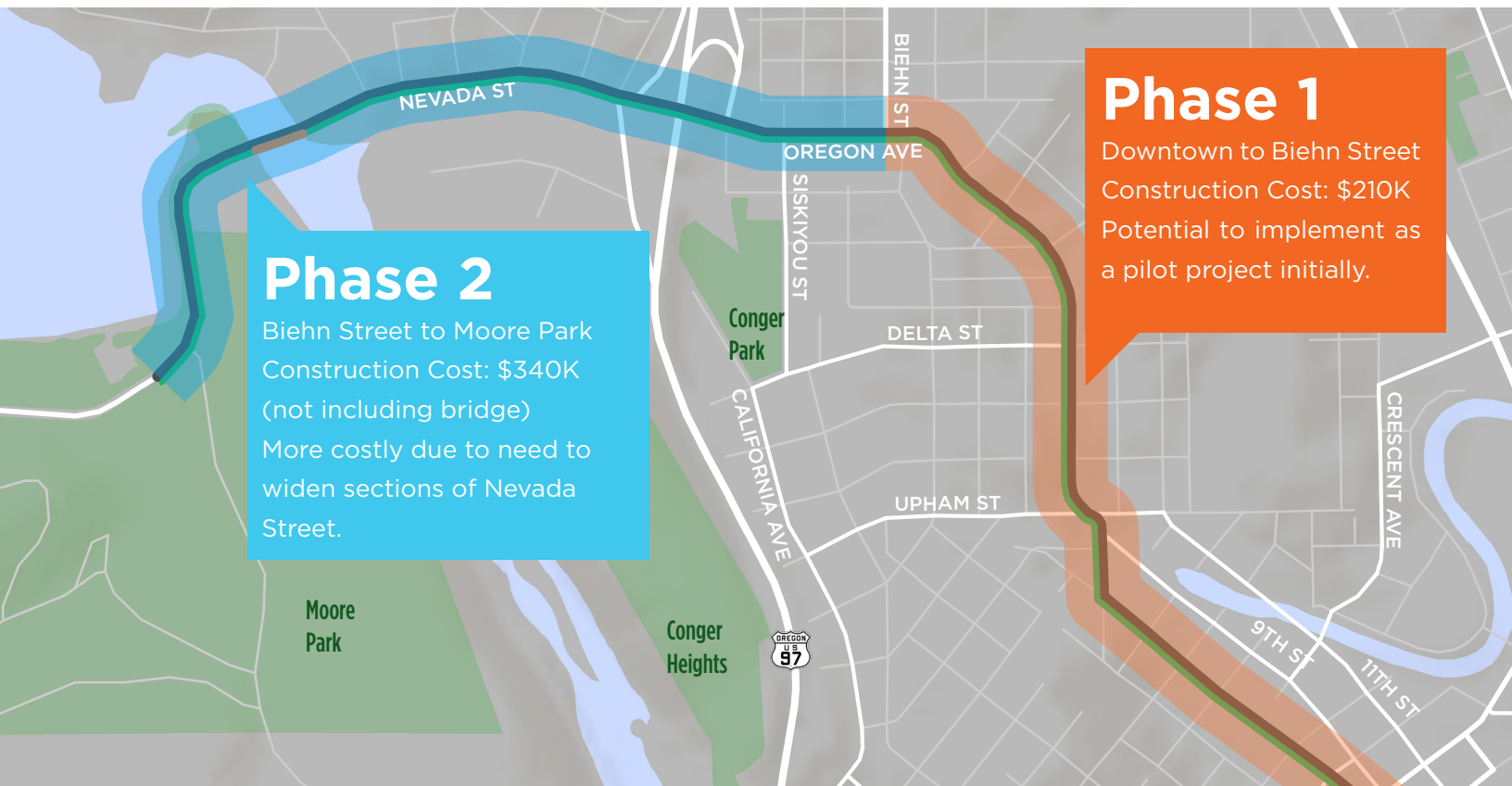


IMPLEMENTATION & FUNDING

Implementation of this corridor plan will require approval by the City of Klamath Falls, as well as funding for design and construction. The estimated total cost of design and construction for the full corridor is approximately \$550,000. This estimate is “planning level” - that is to say, it is an order of magnitude estimate. It does not include additional costs to potentially acquire right-of-way or modify the bridge over the Link River.

Further refinements to the cost estimate will be needed after the engineering and detailed design is completed, particularly at the Link River bridge. The engineering and design estimate for Phase 1 is \$29,000 and for Phase 2 is \$35,000 to \$100,000 (the higher end is assuming it is possible to widen the bridge). The cost of any bridge modifications will be determined in Phase 2, after an exploration of what design alternatives are feasible on the bridge from a structural standpoint.

Phase 1 could potentially be implemented as a pilot project. Under this approach, the pilot should run at least six months starting in the spring or summer. This will allow the City and the surrounding residents time to better gauge the effects of the protected bike lanes and refine the design, if necessary, based on how it performs during the trial period.



Funding for this project can be secured from a variety of sources, including external grants from government or non-profit sources; business sponsorships or partnerships; and crowd-funding from the local community. Because the project is relatively affordable compared to other transportation investments, it offers an outstanding “bang for the buck”.

Does a half million seem like a lot?

Protected bike lane
as proposed

\$550,000

Same distance of
new roadway

\$13.5 MILLION

The Oregon Department of Transportation (ODOT) administers State and Federal transportation funds in Klamath Falls and allocates funding for on-street bicycling related projects through the Enhance program. This program requires agencies to apply for funds as part of the State-wide Transportation Improvement Program (STIP). The next round of STIP applications would be a potential source of funding. The Enhance program requires that agencies provide a local match. Currently the local match is set at a minimum of 10.27%. The match funding does not need to come from City Government funding, but could be a grant from a private source.

ODOT also maintains a website¹ with information on potential funding sources for bicycling related projects. In addition, ODOT staff in the nearby Bend, Oregon office can be an excellent resource for understanding potential funding opportunities (ODOT Region 4 Active Transportation Liaison and Enhance Coordinator).

¹<https://www.oregon.gov/LCD/TGM/Pages/walkbikefunding.aspx>

FUNDING (cont'd)

Outside of traditional transportation agencies, other state or federal agencies have funding sources that may apply in this case. The Centers for Disease Control and Prevention has administered grants to promote active transportation through its Division of Community Health. Other similar health-focused agencies, such as the Oregon Health Authority, may have an interest in partnering on a transportation project, even if they have not traditionally done so before.

Non-Government Grants and Sponsorships

Grant funding, similar to that used to fund this concept plan from Cambia Health Foundation, can also be used to fund the local match portion of a construction project, or used to fund all or part of the design and/or construction of the project. In addition to health-focused foundations, a project like the Moore Park to Downtown Klamath Falls protected bike lane may appeal to other community-oriented foundations due to its community support and potential to positively impact Klamath Falls residents and businesses. Potential foundations include:

- **The Surdna Foundation** has a “Sustainable Environments Program.”
- **The Robert Wood Johnson Foundation** accepts proposals for projects that foster a “Culture of Health” and has funded work related to active transportation and health.
- **Juan Young Trust** awards grants that promote health, education and welfare of children under 12.
- **Meyer Memorial Trust** invests in change at the systemic level to ease inequities and disparities, often supporting projects that create thriving communities by working toward a healthier environment.

In addition to foundation grants, a protected bike lane could be partially funded with corporate sponsorship dollars from business. More and more, private businesses have been investing in active transportation related investments, such as bike-sharing or bike maintenance stations, in return for advertising, naming rights, or visibility.

A CDC study found that community-based physical activity interventions, such as new bike paths and trails, are **“money well spent,”** meaning they are more cost-effective than traditional preventive strategies in reducing new cases of many chronic diseases and improving quality of life.¹

¹Roux et al., 2008; Centers for Disease Control and Prevention, 2008 - Cost effectiveness of community-based physical activity interventions, *American Journal of Preventive Medicine*, 35, 578-588

Crowdfunded projects

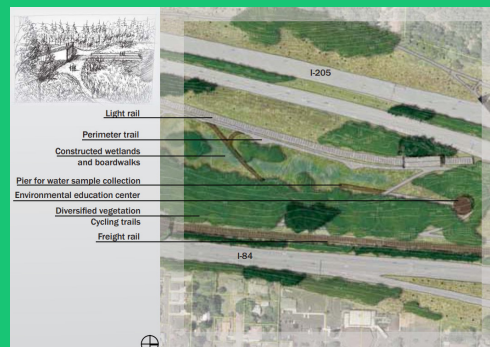
Crowdfunding is another potential source. Using this model, individual community members or businesses contribute at whatever level they choose, with all contributions going toward a target amount of funding. Crowdsourced funding can be used as a match to secure other, larger grants, sponsorships, or private funds. Often, the most valuable outcome of a crowdfunding campaign is that it builds community support and investment in a project.

Crowdfunding can be facilitated through online platforms such as www.indiegogo.com, www.gofundme.com, or www.ioby.org.

Crowdfunding Case Studies

BUILD GATEWAY GREEN

In an example in east Portland, the Build Gateway Green effort raised \$123,888 to be used for the final engineering design for a multi-use off road bike park on 38 acres of unused land. The campaign also leveraged a match from Coca-Cola for up to \$25,000 contributed during a specific time period.



Gateway Green Vision Plan

ARAPAHOE STREET PROTECTED BIKE LANES

In Denver, community members and local businesses raised \$36,000 to help fund the full design of the Arapahoe Street corridor. The funding demonstrated support of the local community and businesses, and helped fund the design for the protected bike lane, along with other funding from a Gates Family Foundation Grant and from the Downtown Denver Business Improvement District.



David Sachs for Denver Streetsblog



APPENDICES

