

# LCVMPO Bicycle Master Plan



## Appendix A: Existing Conditions





# Introduction

## Project Overview

The Lewis-Clark Valley Metropolitan Planning Organization (LCVMPO) was established in 2003 in order to provide a regional approach to transportation planning. Prior to its formation, local transportation planning efforts were handled individually by the cities and counties that make up the current LCVMPO:

- Asotin County
  - Nez Perce County
  - City of Asotin
- City of Clarkston
  - City of Lewiston

As the region has expanded over the past century, the growth has been driven at times by opportunity rather than strategic vision, resulting in a precarious mixture of vehicles, bicyclists, and pedestrians along important roadways and pathways within the region.

The LCVMPO and its members seek to complete a comprehensive study to enhance bicycle safety and circulation within the valley, with the ultimate goal of making the Valley a place where roadways comfortably accommodate all modes of transportation and opportunities exist for residents and visitors of all ages and abilities to safely and efficiently bicycle for both transportation and recreation. This document is one step in completing the overall LCVMPO Bicycle Master Plan. The purpose of this document is to identify on-the-ground conditions of the bicycle network. Functional attributes of these networks are categorized, mapped and catalogued, and paired with an assessment and analysis of the implications of these existing conditions.

Deficiencies identified here will form the foundation of future recommendations for both facility improvements and policy or operational changes.

## Part I: Setting

The setting of any community has a large impact on how people travel in and through that community, and ultimately affects the type of recommendations that will be effective in improving the bicycling and walking environment. For this study, the setting is viewed through the following lenses:

- Study Area
- Topography
- Planning Environment
- Demographics

# Setting: Study Area

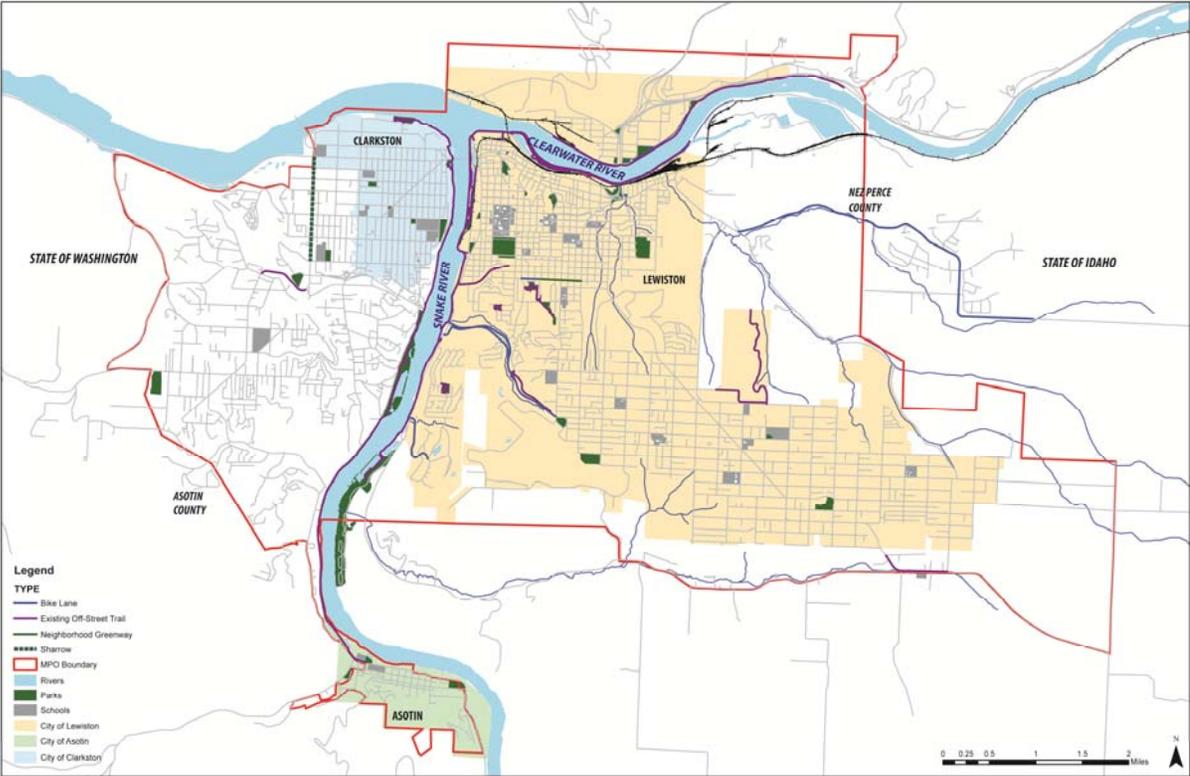


Figure 1: The Lewis Clark Valley

## The Lewis Clark Valley

The Lewis-Clark Valley Metropolitan Planning Area is a unique area that spans two states, two counties and three cities. In the State of Washington, jurisdictions include the City of Clarkston, the City of Asotin and urban portions of Asotin County. In the State of Idaho, the City of Lewiston and urban portions of Nez Perce County are included.

The Lewis-Clark Valley sits at the confluence of two major rivers; the Snake and Clearwater. The north flowing Snake River forms the boundary between the two states. Located 465 miles from the Pacific Ocean, the City of Lewiston is the most inland seaport on the West Coast.

This region boasts a moderate, semi-arid climate with four distinct seasons. Summers are hot and dry, while winters are cold but short, with an average of 14 freezing days per year. There is an average of 169 days of sunshine per year.

# Setting: Topography

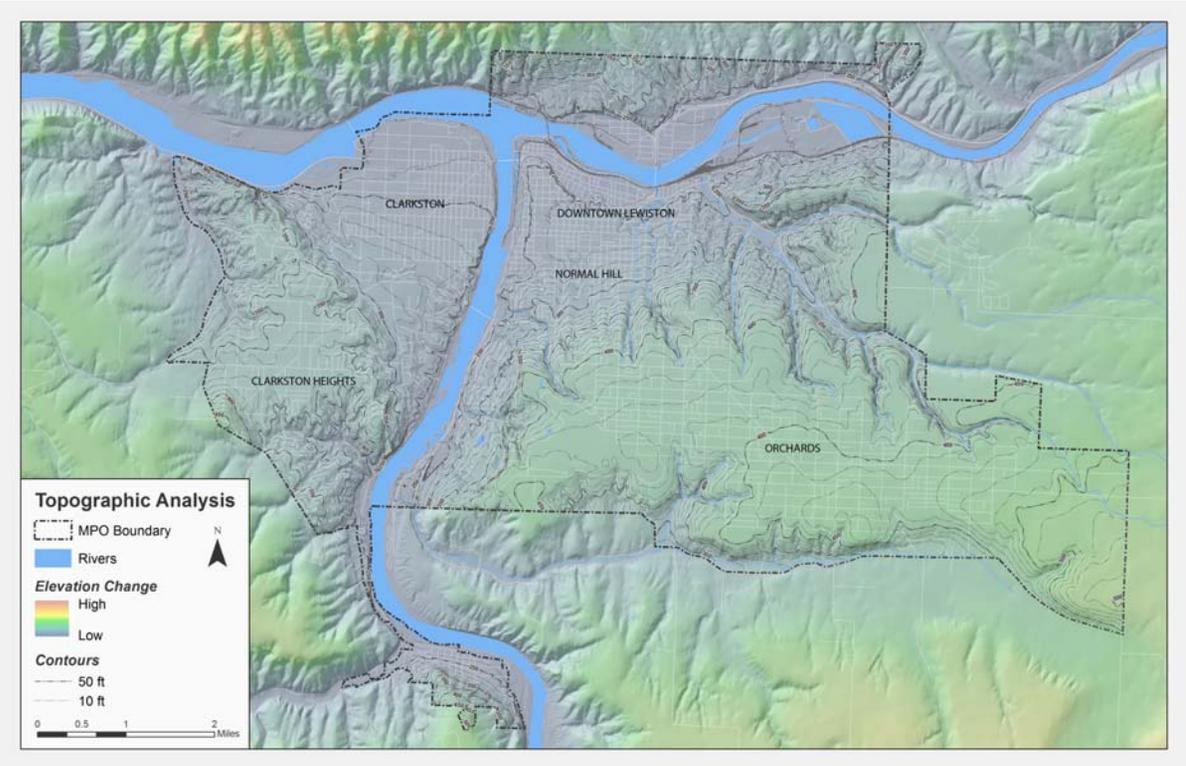


Figure 2: Elevation change in the Lewis Clark Valley

## The Lewis Clark Valley

The Lewis-Clark Valley is situated within a valley formed by the two rivers. Both rivers are located at 730 feet above sea level, with downtown Lewiston between 730 and 780 feet. Radiating out from both downtown Lewiston and Clarkston, the elevation increases to just over 1500 feet above sea level at the urban fringe.

In both Lewiston and Clarkston, the identified areas of town are related to the topography. Downtown Lewiston and Normal Hill are close to the river or slightly higher. Away from downtown the terrain gains elevation quickly. The heavily residential southern half of the city is referred to as "The Orchards".

Clarkston has downtown (near river level) and the Clarkston Heights, which is mostly residential.

The Lewiston Hill, rises nearly 2900 feet above sea level to the north of the MPO.



## Setting: Demographics - Population

	Population 2000	Population 2010	% Change
<b>Lewiston, ID</b>	30,904	31,894	3.20
<b>Clarkston, WA</b>	7337	7,229	-1.47
<b>Asotin, WA</b>	1,095	1,251	14.25
<b>Asotin County, WA (urban MPO areas only) (inclusive of city)</b>	19,466	20,676	6.22
<b>Nez Perce County (urban MPO areas only) (inclusive of city)</b>	31,454	32,597	3.63

Table 1: Population change in the Lewis Clark Valley  
 Source: US Census Bureau –American FactFinder  
 ([http://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml))

### Stats and Demographics

According to the US Census Bureau, over 53,000 people live in the urban areas of Asotin and Nez Perce Counties, and overall the area has seen an increase in population over the last decade of 4.6%.

The median age for the Lewis-Clark Valley is 40.5 years, and a majority (93%) of the population identifies as white, while 2% are American Indian and 3% are Hispanic/Latino.

Driving alone is the most common commuting characteristic, with 79% of commuters. Nearly 8% of commuters carpool, with the highest percentage found in Lewiston and Clarkston. Public transit is used, on average, by 2.3% of commuters in this area. Walking is a more common commute choice than biking, with 4.5% of the population walking to work and only 0.1% of the population biking – although that rate is higher for Lewiston (0.5%).

## Setting: Demographics – Bicycle Demand Analysis (BDA)

Bicycle Demand Analysis (BDA) provides a general understanding of expected activity in the bicycling environment by combining categories representative of where people live, work, play, access public transit and go to school into a composite sketch of demand. The analytical methods that follow provide an objective, data-driven process of identifying areas of high existing or potential bicycle activity.

Generally speaking, the scoring method is a function of density and proximity. Scores reflect relative impact on bicycling to and from census block corners that are located adjacent to the features (where people live, work, play, access public transit and go to school) used in the analysis. As such, scores are represented as density patterns of census block corners within a ¼ mile of each other. Subsequently, the scores are effectively a result of two complementing forces: distance decay – the effect of distance on spatial interactions yields lower scores for features over ¼ mile away from other features; and spatial density – the effect of closely clustered features yields higher scores. Scores will increase in high feature density areas and if those features are close together. Scores will decrease in low feature density areas and if features are further apart. In essence, the score is the intersection of distance and density.

Categories are scored on a scale of 1 – 5, using natural breaks as defined by Jenks to display the data, meaning the values are relative rather than absolute. The scores are based on density and proximity and then assigned weighted multipliers to reflect the relative influence categories have on bicycle activity.

### Setting: Demographics - BDA – *Where People Live*

Where people live includes 2010 census block level population density information. These locations represent potential trip origin locations. More trips can be made in areas with higher population density if conditions are right (i.e. facilities exist and connections are available).

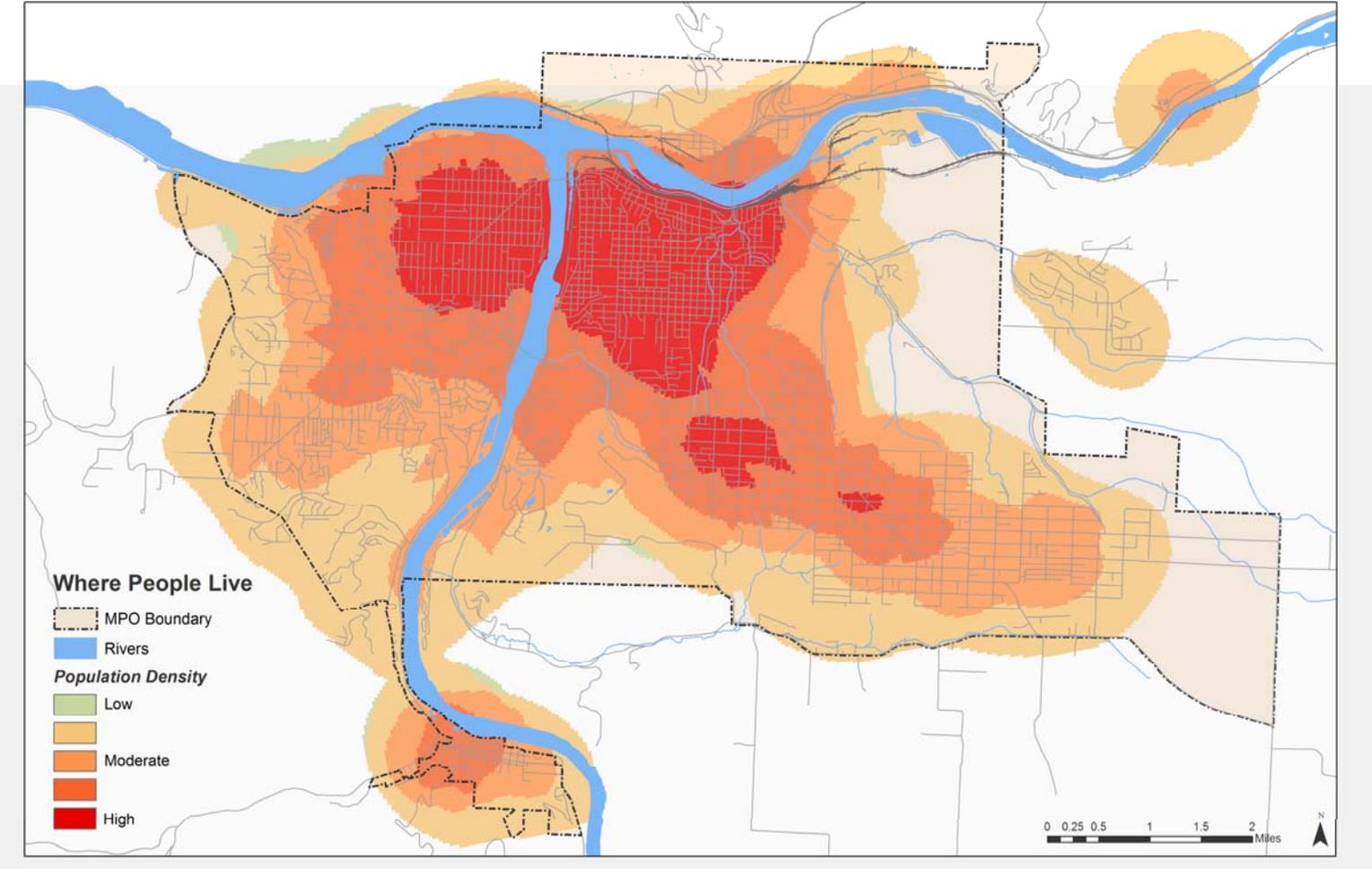


Figure 5: *Where People Live*

### Setting: Demographics - BDA – *Where People Work*

Where people work mainly represents trip ends, for people working in Lewiston and Clarkston regardless of residency. Its basis is 2010 total employment by census block. Depending on the type of job, this category can represent both trip attractors (i.e., retail stores or cafes) and trip generators (i.e., office parks and office buildings) in terms of base employment population.

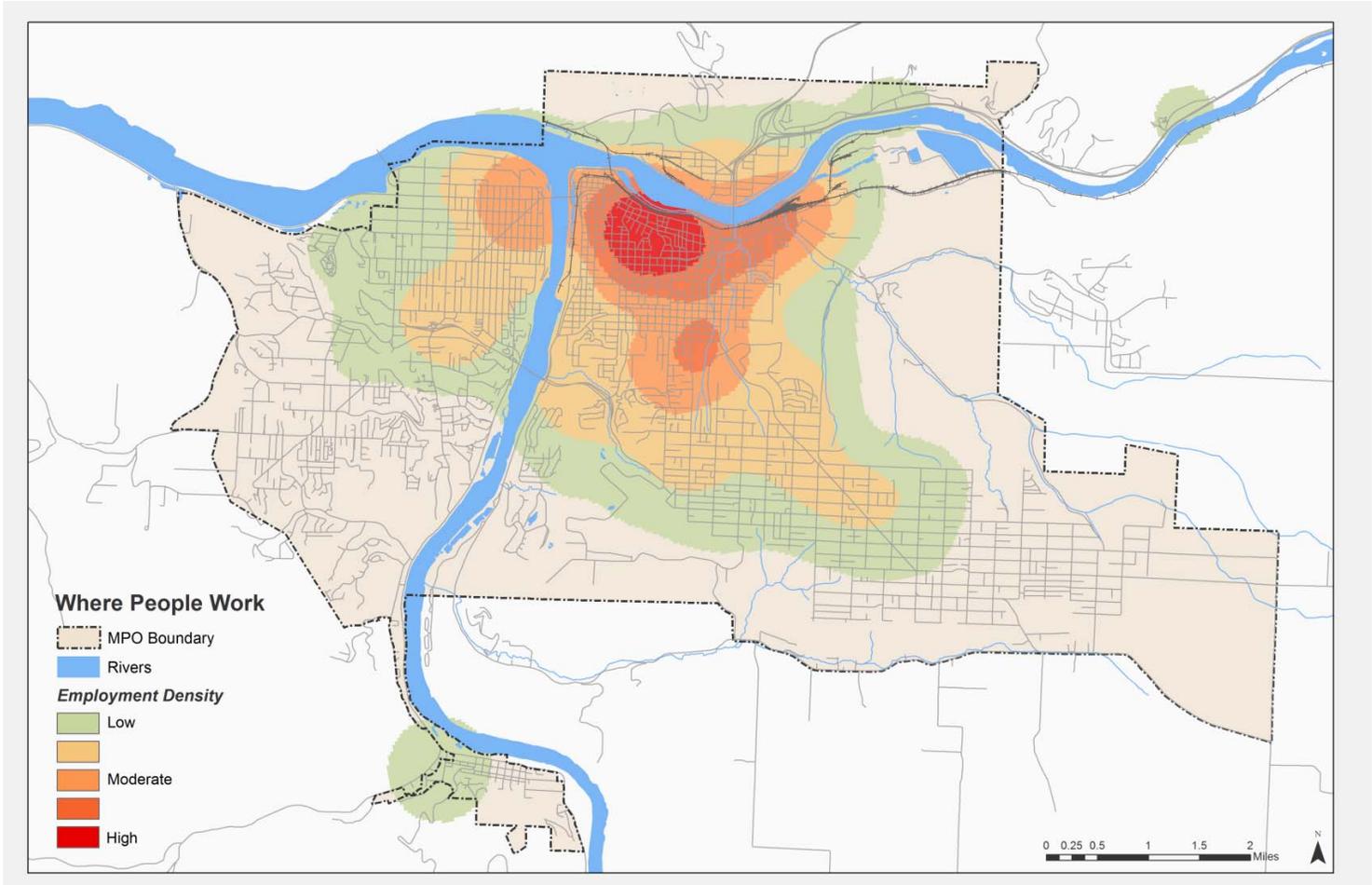


Figure 6: Where People Work

### Setting: Demographics - BDA – Where People Learn

Where people learn represents where students K-12, at community college, or at university go to school. This becomes the student-age resident equivalent of a work trip generator.

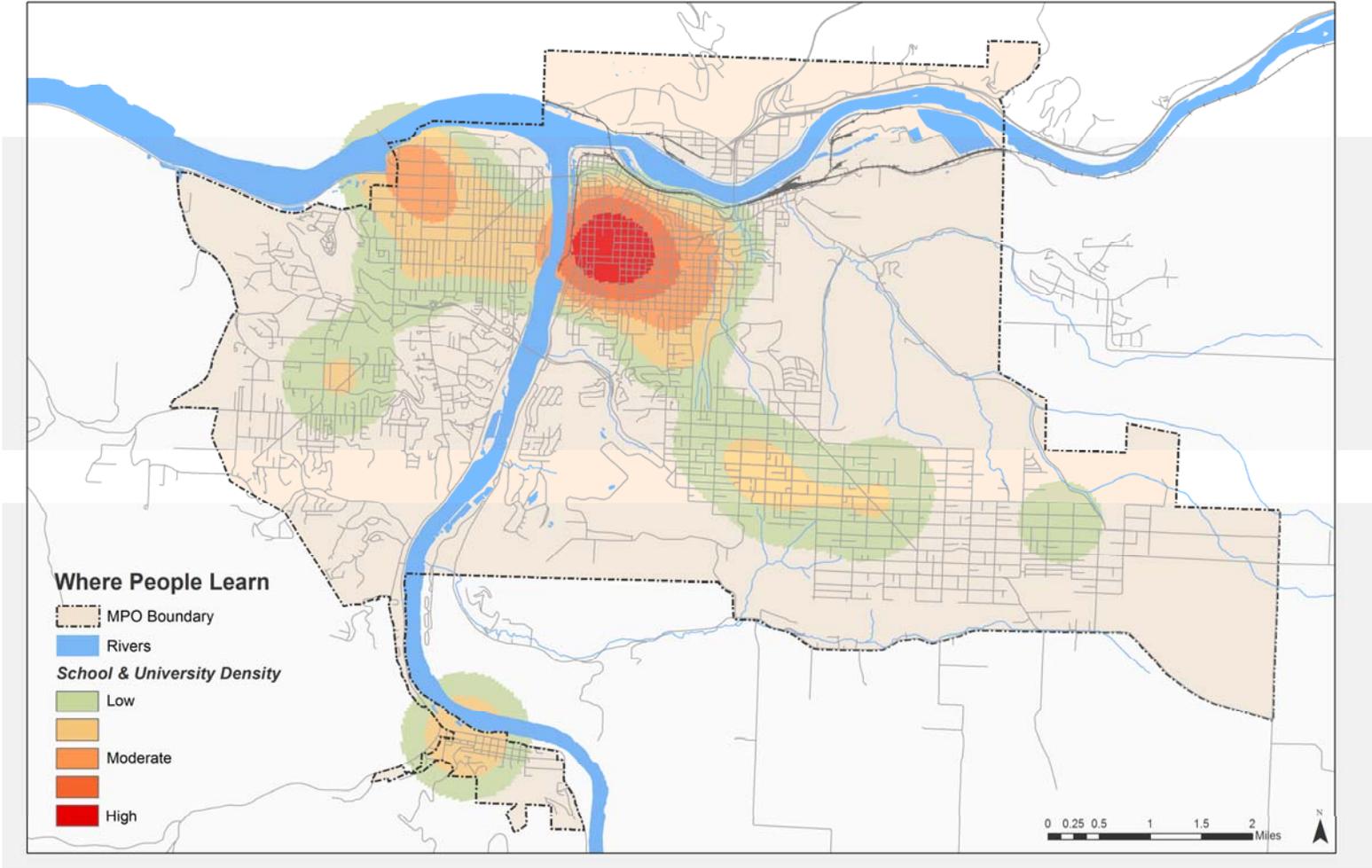


Figure 7: Where People Learn

### Setting: Demographics - BDA – *Where People Play*

Where people play is a combination of varied land use types and destinations. Overlays such as trails (in particular, the Levee Trail) and parks contribute to this category. While all destinations are not exactly where one would expect to “play,” these civic amenities are still destinations of importance reflected in this category due to the temporary nature of the visit.

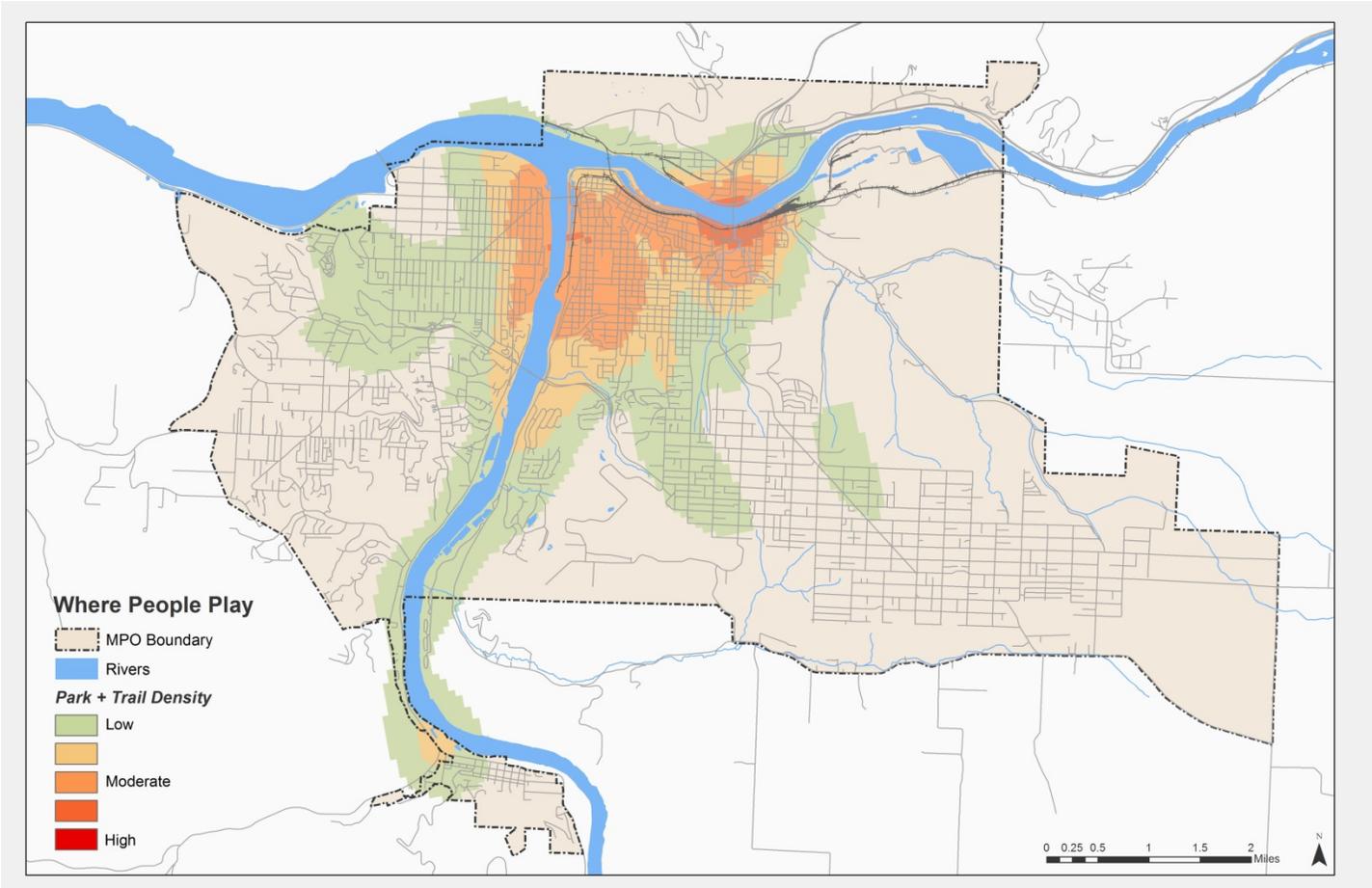


Figure 8: *Where People Play*

### Setting: Demographics - BDA – Where People Access Transit

Where people access transit assessed by location of bus stops. This category accounts for the transit stops within a 1/4 mile of each other.

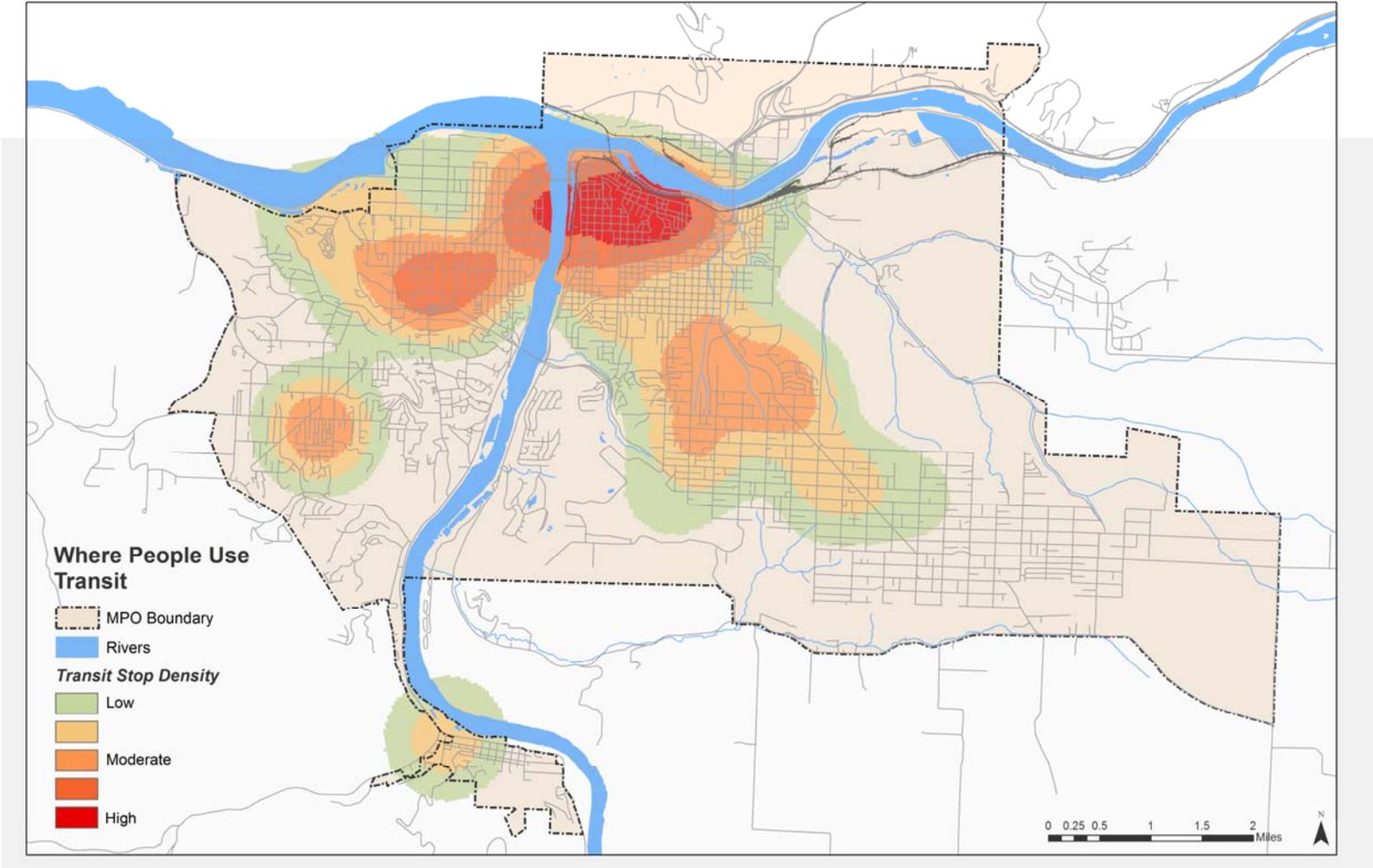


Figure 9: Where People Access Transit

### Setting: Demographics - BDA – Composite

The composite demand analysis for the Lewis Clark Valley was developed by overlaying the factor maps.

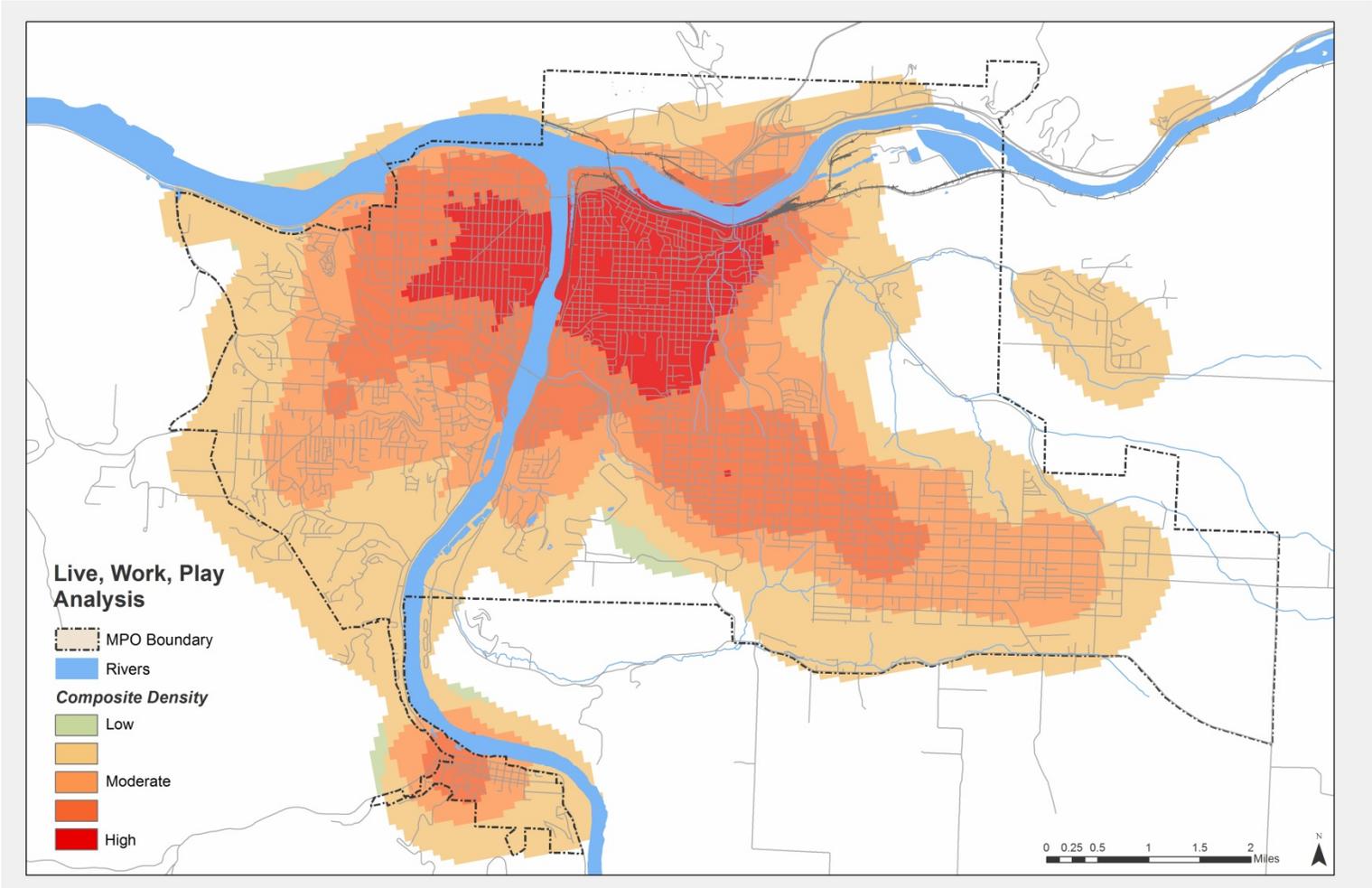


Figure 10: Composite Bicycle Demand Analysis

## Part II: Existing Conditions

### The 5 Es of Bicycle Planning

The League of American Bicyclists (LAB) uses the 5E's – Engineering, Education, Encouragement, Enforcement, and Evaluation – as an organizing principle for assessing a jurisdiction's achievements and for identifying a Bicycle Friendly Community (BFC). Part II utilizes the same organizing principle to examine the existing conditions in the Lewis Clark Valley. Table 1 below explains the 5E's in more detail.

**Table 2. The 5E's**

Category	Factor(s)
Engineering	What facilities exist?
Education	What education programs/opportunities are there for bicyclists, pedestrians, and motorists?
Encouragement	How do the member agencies of the LCVMPPO and other interested groups promote and encourage biking and walking?
Enforcement	What connections exist between law enforcement and biking and walking groups? How does the enforcement of existing policies and law occur?
Evaluation	Do any interested parties measure biking and walking rates and crash rates?

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# Engineering: Existing Bikeway Network

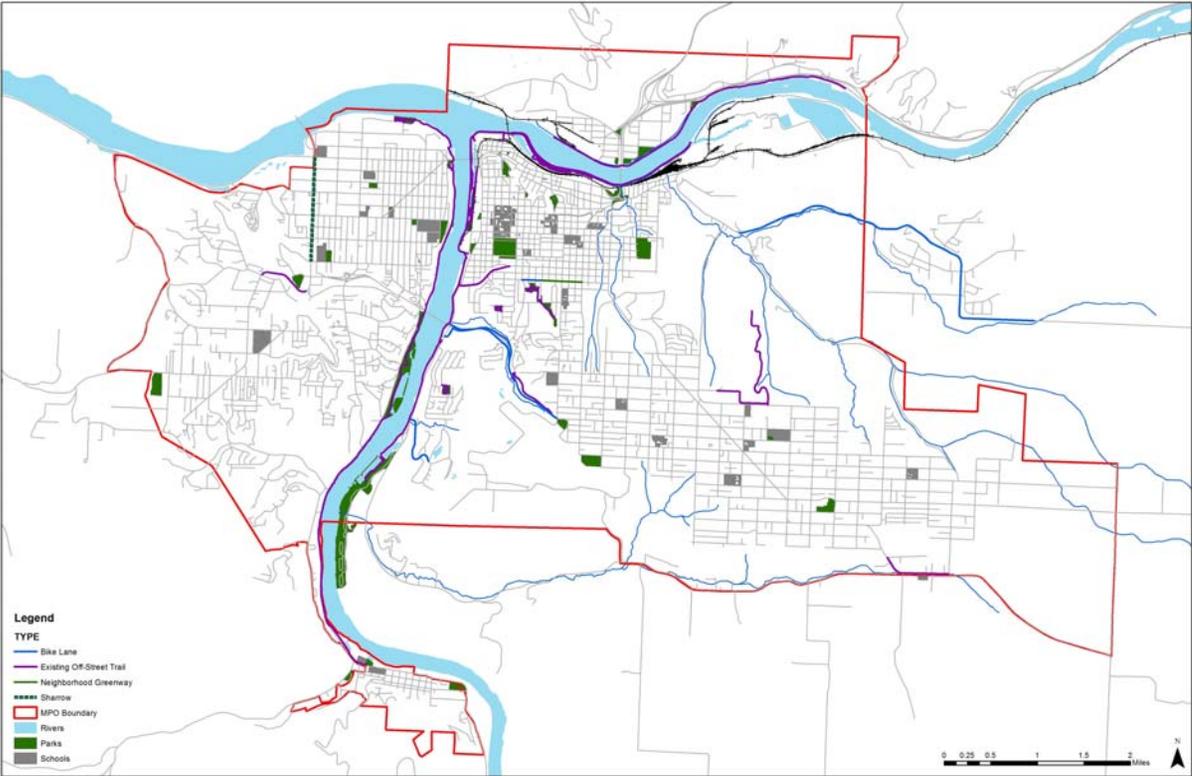


Figure 11: Existing Bikeway Network in the Lewis Clark Valley

### Existing Conditions

The bikeway network is largely made up of the levee trail system, with some short sections of bike lanes and shared lane markings (sharrows). There is very little connectivity within the existing bikeway network.

The levee trail system is an excellent resource and provides a flat riding spot for riders of all ages. It can be difficult to access though from many parts of the region.

Table 3. Existing Bikeways

Facility Type	Mileage
Off-Street	27.8
Bike Lane	7.6
Sharrow	1.1
Neighborhood Greenway	0.4

## Engineering: Existing Bicycle Level of Travel Stress (LTS)

The methods used for the Level of Traffic Stress Analysis were adapted from the 2012 Mineta Transportation Institute (MTI) Report 11-19: Low-Stress Bicycling and Network Connectivity, the most current report available on low-stress bicycle networks. The innovative approach outlined in the MTI report uses roadway network data, including posted speed limit, the number of travel lanes, and the presence and character of bicycle lanes, as a proxy for bicyclist comfort level. Road segments are classified into one of four levels of traffic stress (LTS) based on these factors. The lowest level of traffic stress, LTS 1, is assigned to roads that would be tolerable for most children to ride, and could also be applied to multi-use paths that are separated from motorized traffic (not shown in this analysis); LTS 2 roads are those that could be comfortably ridden by the mainstream adult population; LTS 3 is the level assigned to roads that would be acceptable to current “enthused and confident” cyclists; and LTS 4 is assigned to segments that are only acceptable to “strong and fearless” bicyclists, who will tolerate riding on roadways with higher motorized traffic volumes and speeds. The definitions for each level of traffic stress are shown Table 3.

A bicycle network is likely to attract a large portion of the population if its fundamental attribute is low stress connectivity. In other words, a network should provide direct routes between origins and destinations that do not include links that exceed one’s tolerance for traffic stress. The Bicycle Suitability Index is an objective, data-driven evaluation model which identifies high LTS links, bicycle network gaps and gaps between “low LTS” links, and a score assessing the relative user comfort or level of stress a user may experience on each link is mapped. Each user is different and will tolerate different levels of stress in their journey so these maps should be used as a general guide rather than an absolute truth.

LTS 1	Presenting little traffic stress and demanding little attention from cyclists, and attractive enough for a relaxing bike ride. Suitable for almost all cyclists, including children trained to safely cross intersections. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a slow traffic stream with no more than one lane per direction, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where cyclists ride alongside a parking lane, they have ample operating space outside the zone into which car doors are opened. Intersections are easy to approach and cross.
LTS 2	Presenting little traffic stress and therefore suitable to most adult cyclists but demanding more attention than might be expected from children. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a well-confined traffic stream with adequate clearance from a parking lane, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where a bike lane lies between a through lane and a right-turn lane, it is configured to give cyclists unambiguous priority where cars cross the bike lane and to keep car speed in the right-turn lane comparable to bicycling speeds. Crossings are not difficult for most adults.
LTS 3	More traffic stress than LTS 2, yet markedly less than the stress of integrating with multilane traffic, and therefore welcome to many people currently riding bikes in American cities. Offering cyclists either an exclusive riding zone (lane) next to moderate-speed traffic or shared lanes on streets that are not multilane and have moderately low speed. Crossings may be longer or across higher-speed roads than allowed by LTS 2, but are still considered acceptably safe to most adult pedestrians.
LTS 4	A level of stress beyond LTS3.

Table 4. Levels of Traffic Stress (LTS) Definitions. Source: Mineta Transportation Institute Report 11-19

# Engineering: Existing Bicycle Travel Stress - LTS Analysis

## Segment Analysis

The results of the segment-based LTS are shown in Figure 12. Much of the network consists of disconnected clusters of low-stress (LTS 1 to 2) streets, shown in green and yellow. Individually, these islands of low-stress streets are comfortable to ride for most adults, but they are isolated from one another by larger roads with higher traffic speeds that disrupt bicycle mobility.

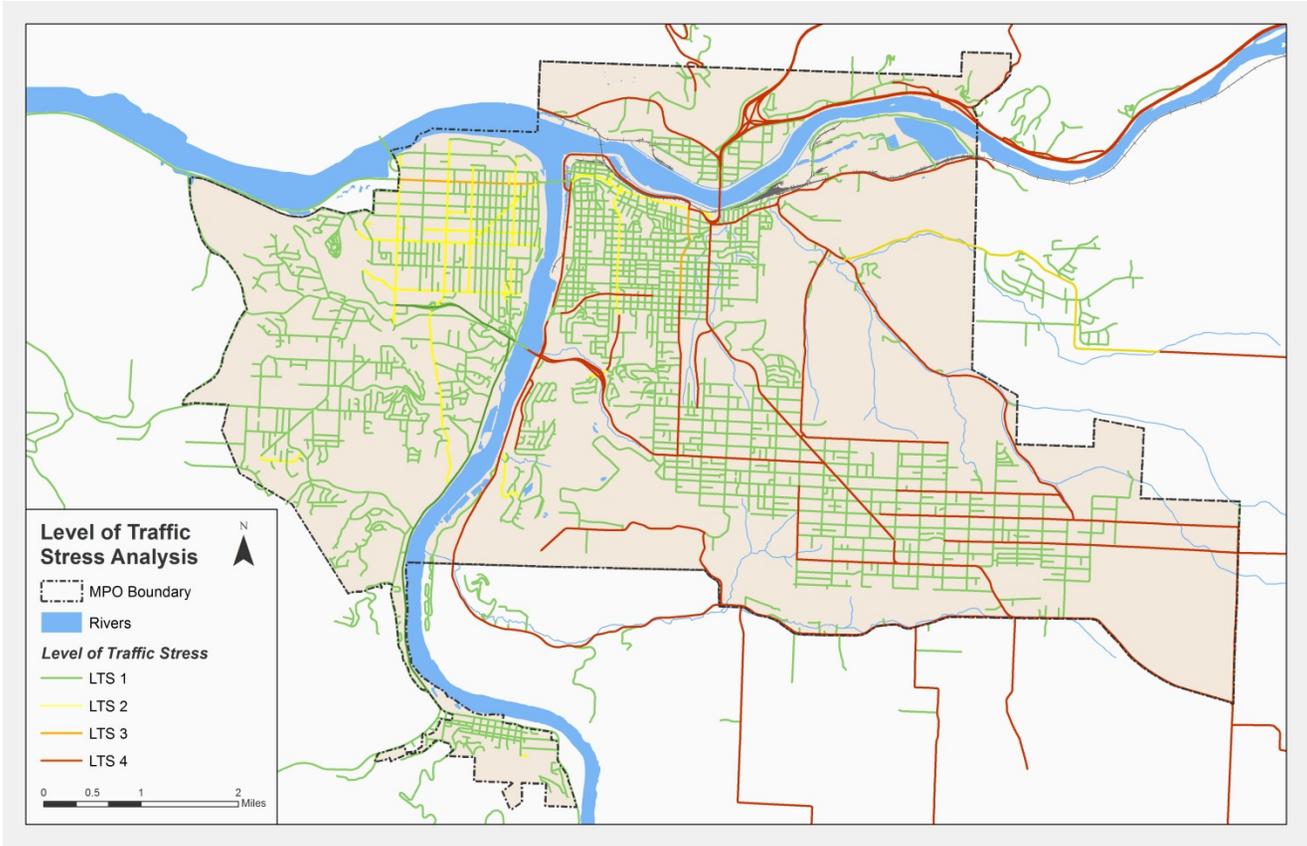


Figure 12: LTS Analysis

## Engineering: Existing Bikeway Network – Needs, Gaps, & Barriers

As in any region, the Lewis Clark Valley has many gaps and barriers in the bicycle network that make bicycling more difficult. Gaps and barriers are analyzed in order to begin to develop a set of locations to address in the recommendations phase of the plan.

### Barriers & Needs

Several corridors are identified as barriers to bicycle travel in the region. The identified barriers describe a physical impediment to travel where crossings can only occur at major interchanges or intersections. The rivers and highways are such barriers.

Other corridors in the roadways have been identified as either difficult to travel along due to lack of bicycle facilities or not meeting the needs of users despite having existing bicycle facilities. In instances where a specific need has been identified on one of these corridors, this type of facility is described as a corridor need.

### Facility Gaps

Gaps in continuous bicycle facilities exist as significant constraints, while simultaneously presenting opportunities. Gaps typically exist where physical or other constraints impede bicycle network development. Typical constraints include narrow bridges on existing roadways, narrow right-of-way, and topographic challenges. Traffic mobility standards, economic development strategies, and other policy decisions may also lead to gaps in the non-motorized network. Bicycle gaps exist in various forms, ranging from short “missing links” on a specific street or path corridor, to larger geographic areas with few or no non-motorized facilities at all. Gaps can then be organized based on length and other characteristics.

- Spot gaps: Spot gaps refer to point-specific locations lacking dedicated bicycle facilities or other treatments to accommodate safe and comfortable non-motorized travel. Spot gaps primarily include intersections and other vehicle/bicycle conflict areas

posing challenges for riders. These may also be opportunities to easily clarify vehicle and/or bicycle movements through signage and paint

- Lineal gaps: Similar to connection gaps, lineal gaps are ½- to one-mile long missing link segments on a clearly defined and otherwise well-connected bikeway or trail.
- Area gaps: Larger geographic areas (e.g., a neighborhood or business district) where few or no bikeways exist would be identified as an area gap.

### Maintenance

One final type of deterrent to bicycling in that has been identified through survey responses and public input is maintenance concerns. The primary maintenance concerns discussed by residents are listed below:

- Bike lanes or bike facilities with sand, gravel, or glass in them
- Bike facilities with poor pavement quality

# Engineering: Existing Bikeway Network – Needs, Gaps & Barriers

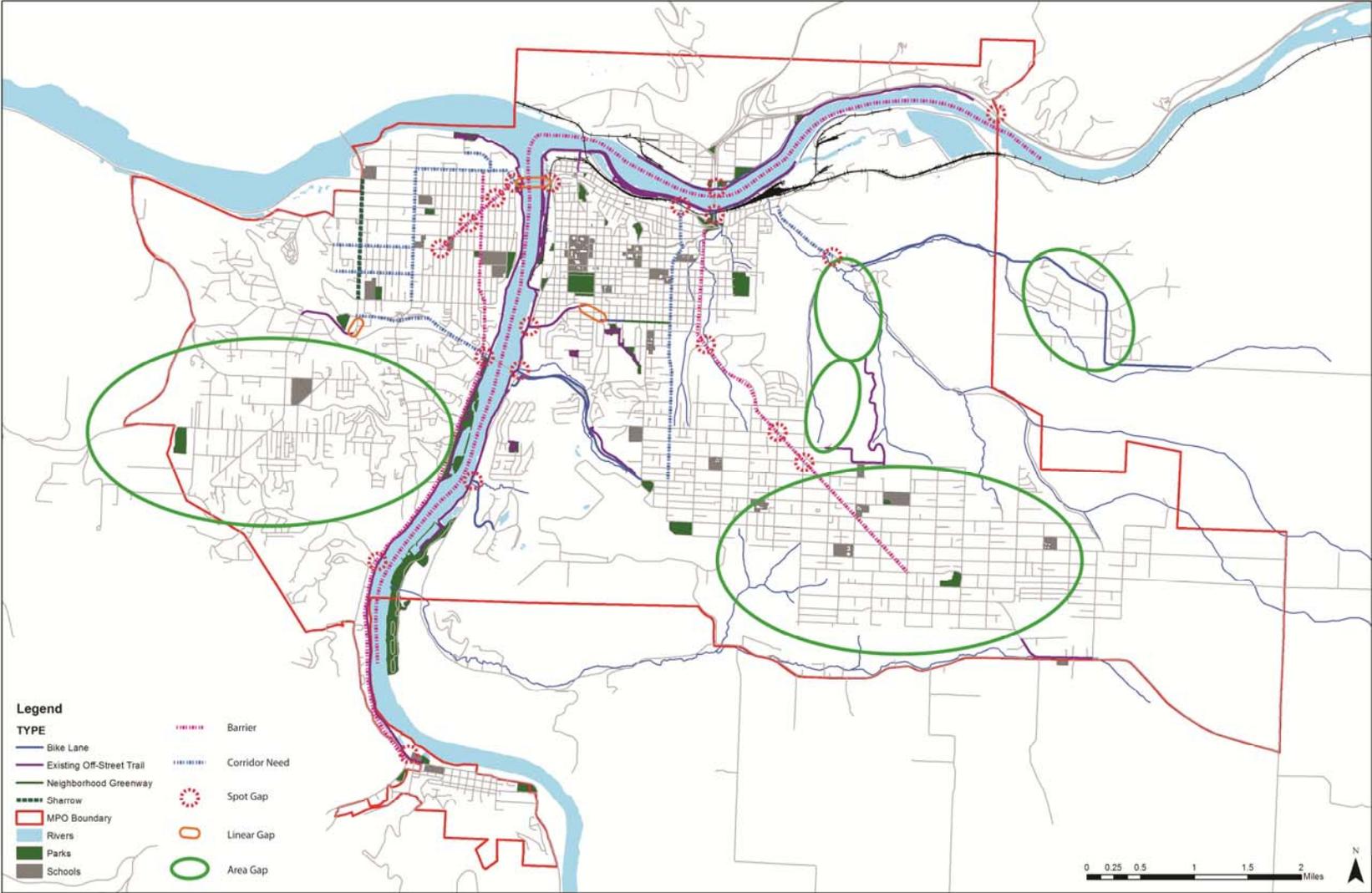


Figure 13: Identified Needs, Gaps, & Barriers

# Engineering: Existing Multimodal Connections

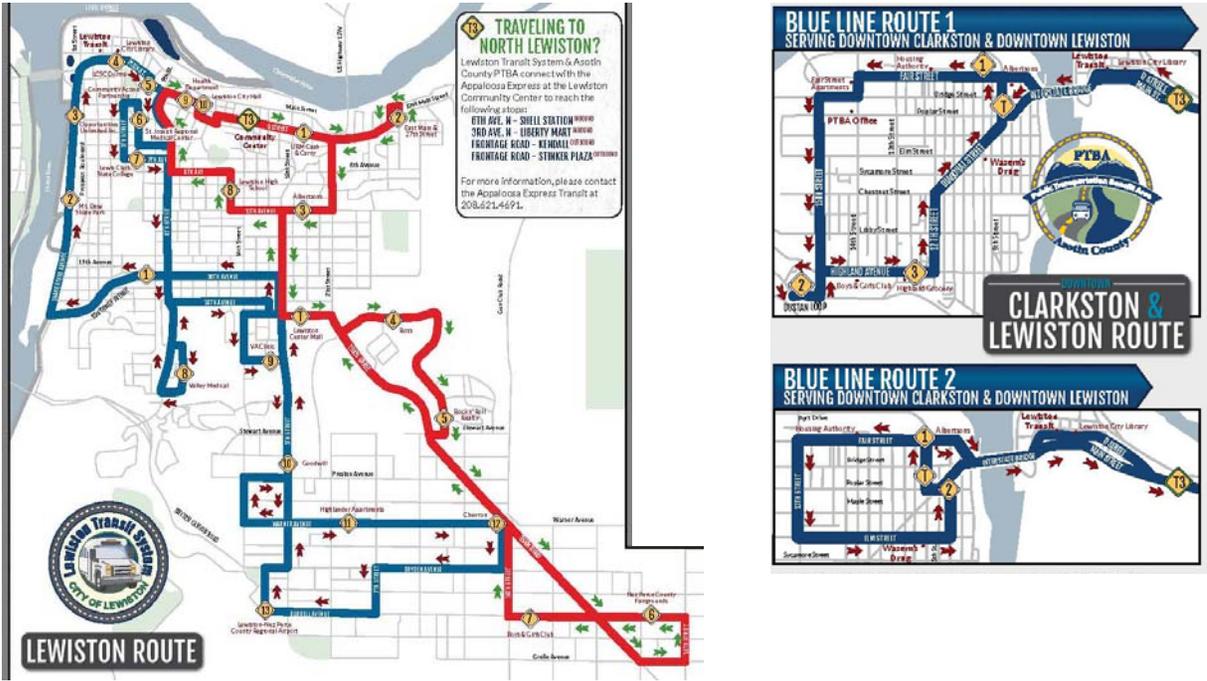


Figure 14: Existing multimodal connections in Clarkston and Lewiston

## Existing Conditions

### Ride the Valley

A collaboration between Asotin County Public Transportation Benefit Area and Lewiston Transit System, this multi-state transit system called “Ride the Valley” connects the multiple cities and counties together through a combined bus, paratransit and vanpool system. This system serves Asotin, Clarkston and Lewiston.

The vanpool system serves various employment centers, including Washington State University and the Lower Granite Dam. Individuals and companies can reserve vans for organized vanpools.

### Appaloosa Express

Appaloosa Express Transit offers service to Lenore, Greer, Orofino, Kamiah, Kooskia, Peck, Culdesac, Lapwai and Lewiston with stops at the Clearwater River and Itse’ Ye Ye casinos. Appaloosa Express Transit connects with Lewiston Transit at the Lewiston Community Center.

# Engineering: Existing Wayfinding and Signs



Typical MUTCD compliant Bike Route sign



Custom wayfinding sign in downtown Lewiston



MUTCD-compliant signage used to direct users to the appropriate side of the path



MUTCD-compliant sign indicating an active transportation crossing ahead

## Existing Conditions

### Location

Wayfinding signs are found in downtown Lewiston and along the levee trail. However, the locations chosen for the signage do not always allow for the best decision-making by system users. Most of the wayfinding in downtown is pretty consistent, but not geared towards cyclists.

### Variety

There are a variety of signage styles found throughout the community. Lewiston has developed pedestrian-scale signage for downtown. For the on-street system, the city follows state and federal guidelines with regard to color, size, and design.

## Engineering: Existing Bike Parking



*Good bike parking location with non-recommended rack style*



*Poor rack style and placement means a bike rack will see very little utilization*



*Good rack design located near the building entrance, but access can be difficult*



*Art racks can be difficult to identify as bike racks for some users*

### Existing Conditions

Bike parking is not consistently provided throughout the Lewis Clark Valley, and its absence is noted in downtown Lewiston and outside popular destinations throughout the Valley.

As the images to the left show, available rack types throughout the Valley vary greatly.

The LCBA completed a bike rack survey of downtown Lewiston in the Spring of 2014. Downtown is defined as Memorial Bridge to Interstate Bridge and bottom of the Normal Hill bluff to the rivers. The information collected is included as an appendix to this document.

## Education: Current Education Practices

### Existing Conditions

There are no existing programs dedicated to bicycle education in the Lewis Clark Valley.

The Lewis Clark Bicycling Alliance (LCBA) has its own website and is continuing to grow its activities around bicycle encouragement and education in the Valley.

The Twin Rivers Cyclists have a variety of educational videos posted at their website, including tips for beginner cyclists and children's cycling safety.

The Lewiston Police Department has, in past years, conducted an annual bicycle rodeo. At a bicycle rodeo, children learn basic bicycle safety skills through classroom instruction and practical application. The program is also a component of Safe Routes to Schools program.

Washington's Safe Routes to School program provides technical assistance and resources to cities, counties, schools, school districts and state agencies for improvements that get more children walking and bicycling to school safely, reduce congestion around schools, and improve air quality

### What Works Elsewhere

#### Walk & Bike Education Programs

The Bicycle Transportation Alliance in Portland, Oregon runs a youth education program that educates students, trains teachers and encourages families to walk and bike to school. Customizable programs create a model that works for any school or district.

#### Safety Media Campaigns

A high-profile marketing campaign that highlights bicyclist safety is an important part of helping all road users – including both motorists and bicyclists – understand their roles and responsibilities on the road. This type of high-profile campaign is an effective way to raise the profile of bicycling and improve safety for bicyclists, pedestrians, and motorists

## Encouragement: Current Encouragement Practices

### Existing Conditions

#### Twin Rivers Cyclists

The Twin Rivers Cyclists is organized to provide non-competitive cyclists with a chance to ride together over a variety of distances and participate in cycling events throughout the region and beyond.

#### Lewis Clark Bicycling Alliance (LCBA)

The members of the Lewis Clark Bicycling Alliance (LCBA) seek to bring the health, economic, and recreational benefits of bicycling and walking to the Lewis Clark Valley. They encourage input from the broader community as the primary advocacy organization for bicycling as a safe, legitimate, and equal mode of transportation in the valley.

#### Biking Resources

The statewide bicycle advocacy organizations – Washington Bikes and the Idaho Bike Walk Alliance – both provide resources for education and encouragement activities.

### What Works Elsewhere

#### Celebrate Bike to Work Week/Month

A Bicycle Commuter Campaign encourages people to commute by bicycle and to make the general public aware that bicycling is a practical mode of transportation. Events (such as a free breakfast or coffee) can encourage new riders and celebrate existing riders continuing to commute by bicycle.

#### Commuter Benefit Program.

A rewards program for commuters who regularly commute via alternative transportation can contribute to consistent commuting by biking and walking. Commuters can log their trips year-round to receive benefits for walking or biking to school/work, such as gift certificates, cash payouts, or free biking and walking accessories.

#### Information Clearinghouse

Many people do not know where to find information about walking and cycling, including laws, events, maps, tips, and biking groups. An information clearing house, a “one stop shopping” website aimed at bicyclists and

pedestrians can be invaluable. The site should include maps, legal information, local resources, links to club websites, an event calendar and other relevant information.

#### Bike Valet for Events

Providing convenient, secure bike parking at large events can make bicycling to an event more attractive and highlight bicycling as a safe and convenient transportation option. Temporary facilities, such as corrals or mobile racks, can be brought on site to meet the demand. This type of service can also prevent damage to non-parking facilities, such as trees and hand rails that bicyclists use when appropriate facilities are lacking.

#### Celebrate Unique Topography

In San Francisco, CA, a one-mile, zig-zagging bicycle route from Market Street to Golden Gate Park has become popularly known as “The Wiggle.” The route minimizes climbing grade for bicycle riders; even among the region’s famous hills, the Wiggle inclines average 3% and never exceeds 6%. There are now wayfinding signs and maps that show the route, and it has become a source of city pride along with the city’s iconic topography

## Enforcement: Current Enforcement Practices

### Current Practice

The Lewiston and Clarkston Police Departments are dedicated to community participation in reducing crime. They work in close partnership with neighborhood associations, community agencies, businesses, and other City departments.

The Lewiston Police Department conducts regular patrols of the Levee Trail, with patrols occurring by vehicle, foot, and bicycle.

The Lewiston Police Department also utilizes bike teams for patrolling downtown Lewiston occasionally during the summer months, as well as during summer events (i.e. Hot August Nights)

### What Works Elsewhere

#### **Bike Safety & Bike Citation Diversion Class**

Many communities provide the opportunity for ticketed offenders to attend a class on bike safety in lieu of paying a fine for certain citations. This is available to motorists, bicyclists, and pedestrians.

#### **Enforcement, Education & Training**

Particularly effective at the start of the school year and summer, stepped-up enforcement allows the police the opportunity to remind everyone about the safe use of the roadways and crossings.

## Evaluation: Track Implementation Progress

### Best Practices

It is a useful benchmarking activity to publish an annual report measuring accomplishments and performance against goals.

An annual report should include relevant bicycling and pedestrian metrics (count results, new bikeway/greenway facility miles, major completed projects, pedestrian- and bicycle-involved crashes, bike share, number of organized events, innovative solutions, new policies) and may also include information on user satisfaction, public perception of safety, or other qualitative data that has been collected related to cycling. Cumulative bikeway and trail mileage should be shown to demonstrate long-term progress in improving infrastructure.

Currently some data is collected for updated planning or design projects, but this is not done consistently by project or at a regular interval.

ITD receives all crash data (for Lewiston at least) including bike data. This is compiled and put into GIS format and returned/available for City use. Crash data lags by one year.

Bicycle counts could be counted when the LCVMPPO does traffic counts (but probably not annually). Other count efforts could be undertaken by volunteers on a more regular basis. Some example reports are included in Appendix B.