

Transportation Corridor Study

Draft April 2020

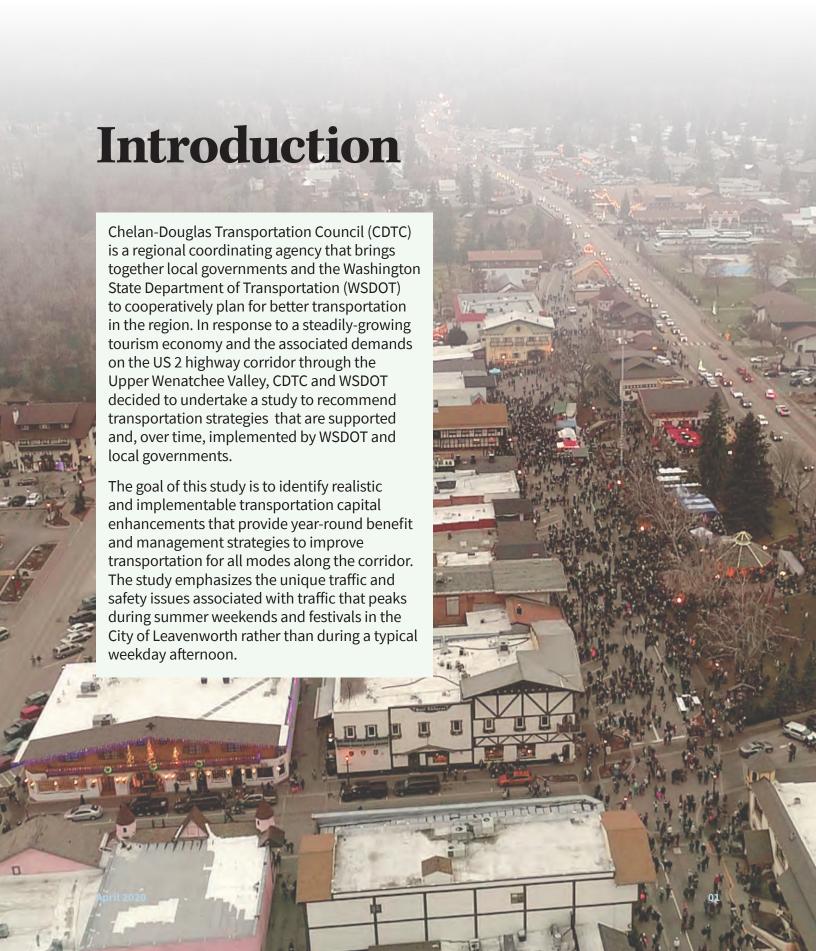






Table of Contents

→ Introduction	01
	······································
→ Executive Summary	02
Chapter 1	
→ Project Background	04
Chapter 2	
→ Vision & Guiding Principles	09
Chapter 3	
→ Evaluated Projects	19
→ Appendices A-G	53
→ A. Existing Planning & Context Memorandum	
→ B. Stakeholder Interview Summary	
→ C. Project Meeting Summary	
→ D. Community Engagement Summary	
→ E. Project Evaluation Matrix	
→ F. Project Findings	
→ G. Data Collection	



Executive Summary

As one of two major state highway corridors over the Central Cascades, US 2 serves as a route to desirable locations across the state. US 2 also serves as a vital regional and local connection for the communities of Leavenworth, Dryden, Peshastin, Cashmere, and Wenatchee, while operating as a "main street" within the City of Leavenworth.

Within the Upper Wenatchee Valley, between Coles Corner and Cashmere, this corridor also has several unique characteristics that create additional transportation challenges on US 2. Through this region, topography varies from narrow canyons to agricultural land, increasing cost and complexity to expand US 2, or build new or wider county roads. Seasonal travel to recreational destinations increases traffic on US 2 by as much as 50 percent on weekends during the summer months. US 2 also serves as the route to and from festivals and events in Leavenworth, which draw as many as 20,000 visitors to the area resulting in miles of queues on US 2 and limiting emergency services access to the area.

Corridor Vision & Guiding Principles

This study establishes a future vision for the US 2 Upper Wenatchee Valley Corridor that:

- » Provides reliable transportation options for all means of travel;
- » Accommodates emergency access, local trips, US 2 highway travelers into and out of the area, and freight movement;
- » Enhances the region's unique identity.



To achieve this corridor vision, a set of guiding principles was established with input from the Project Advisory Committee and the community. These guiding principles were used to identify investments and strategies that advance the creation of a US 2 Upper Wenatchee Valley corridor that is:

Reliable



Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.

Safe & Complete



The corridor offers complete, multimodal infrastructure where appropriate to meet users' needs and enhance corridor safety.

Vibrant



Improvements support Leavenworth's tourism industry and growing seasonal usage of the corridor.

Realistic



Improvements are practical, fundable, and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from seasonal and special event travel.

Supported



Stakeholders and the community will be engaged to identify mutually beneficial solutions.

The Findings

This study evaluated over 70 project ideas and concluded that there is no one solution that will eliminate congestion on US 2 entirely. Solutions identified in this study do improve local and emergency access, increase transit reliability in the region, improve the lane markings and intersections on US 2 to better serve all modes through Leavenworth, and provide new local road connections.

The study did include the evaluation of ideas that have been around for many years, including widening US 2 to four lanes, reconstructing parallel county roads, and constructing a complete US 2 bypass around Leavenworth. While these projects seem like sensible solutions to reduce congestion on US 2, they were all found to be very expensive, environmentally infeasible, and in some cases unsupported. As a result, these projects were deemed fatally flawed and removed from consideration.

While the solutions in this study are not currently funded, these are ideas that align with the guiding principles and vision for the US 2 corridor and can serve as a guide to advance meaningful transportation improvements. These improvements include:

- » Build a US 2 Roundabout at Icicle Road
- » Create US 2 Express Bus Access at Peshastin
- » Implement Parking Management Strategies
- » Create a new connection across the Wenatchee River between Chumstick Highway and River Bend Drive
- » Implement US 2 Streetscape, Lane Marking and Intersection Improvements through Leavenworth
- » Build a US 2 Pedestrian and Bicycle Undercrossing to downtown and waterfront parks

US 2 Roundabout at Icicle Road

PROJECT DESCRIPTION

This project would construct a single-lane roundabout at the intersection of Icicle Road and US 2. Paired with center-island landscaping, a display of public art or a sculpture, and Bavarian-themed signage, the roundabout would create a gateway to Leavenworth as visitors arrive from Tumwater Canyon. Located at the western terminus of Link Transit's Route 22, this project would also create an improved turn-around for transit and shuttles operating on the US 2 corridor through Leavenworth.



PROJECT BENEFITS

- ✓ Improved local access to US 2
- A western gateway to Leavenworth
- ✓ Improved transit and shuttle circulation

This project would improve access for locals using Icicle Road to access homes or jobs without impacting travel times or congestion on US 2. Today, US 2 through traffic has priority at the intersection over traffic turning left onto Icicle Road and traffic on Icicle Road, which is stop-controlled. This configuration forces locals to wait for gaps in traffic on US 2, which can be difficult during periods of high congestion. With roundabout control at this intersection, all approaches would be yield-controlled, giving more equal opportunities for local and through traffic.

A roundabout configuration would reduce serious and fatal injury crash potential at the intersection by reducing speeds and limiting opportunities for severe collisions.

The Icicle Road intersection marks the transition of US 2 from a mountainous highway to Leavenworth's "main street". Installation of a roundabout would reinforce this gateway, by slowing speeds paired with signage and landscaping that would serve as a way to alter driver expectations and behaviors from the nearly 65 mile stretch of US 2 across the Cascades. Moreover, landscaping features of a roundabout provide the opportunity to incorporate Bavarianthemed elements, reinforcing the unique identity of Leavenworth.

The intersection is also the western terminus of Link Transit's Route 22. The current configuration of the intersection requires transit operators to make a left-turn onto Icicle Road before pulling into the gas station on the southeast corner of the intersection and using the parking lot as the turnaround before continuing eastbound. Construction of a roundabout and relocating the transit stop from the parking lot to US 2 would improve transit service and efficiency at the west end of Leavenworth.



Example of a roundabout in Breckenridge, CO. Source: MTJ, 2017

GUIDING PRINCIPLES

Reliable

The roundabout improves local access onto the US 2 corridor, while not diminishing through traffic.movement.

Safe & Complete



The roundabout reduces entry and exit vehicle speeds and in doing so reduces the potential for serious and fatal crashes at the intersection.

Vibrant



Paired with landscaping, public art or a sculpture, and signage, this project would create a unique and welcoming gateway into Leavenworth for visitors traveling on US 2. This project would also serve as a point to transition drivers from the mountain highway driving through Tumwater Canyon, to the slower speeds and behaviors needed when driving on a "main street".

Realistic



This project is the lowest cost capital project and can be completed almost entirely within available right-of-way.

Supported



This project was not only added by the community as part of the engagement process, but also received over 60 "likes" on the online map.

ADDITIONAL CONSIDERATIONS

Temporary Traffic Control - Roundabout control limits the opportunity to deploy temporary traffic control measures. While queueing reaching Icicle Road was not observed this should be considered in evacuation planning.

Landscaping & Art Costs - While the roundabout would be constructed on a WSDOT facility, their fund contributions would not cover the addition of art or other visual enhancements to create a visual gateway to Leavenworth. Similarly, any center-island landscaping would be maintained by the City of Leavenworth.

Future Growth - This roundabout location could be metered with traffic-signals if future growth or congestion resulted in queueing reaching this intersection.

COST



Implement Parking Management Strategies

PROJECT DESCRIPTION

This project builds on strategies identified as part of the Downtown Leavenworth Parking Management Plan and in some cases, identified for implementation in the near-term by the City of Leavenworth Parking Committee. Strategies maximize efficient use of the parking supply such that visitors can easily find parking, reducing congestion in Downtown that results from cruising for parking. These strategies would also and allow the City to flexibly manage parking during high demand events.

Strategy 1: Allocate remote parking for employees that work in Downtown. With the recent transition of the WSDOT lot to City ownership, a portion of the available capacity in this lot would be allocated to employee parking. This lot is adjacent to the US 2/Mill Street transit stop, which would connect employees parking at this location to jobs in Downtown. Creating employee parking at this lot would also be supported by the TDM Strategies and Bike/Scooter Share projects discussed in the following section and the US 2 Ski Hill to River Bend Streetscape Improvements project.

Strategy 2: Make other remote options available to employees. Any unused capacity at the existing Willkommen Village could also be utilized followed by the paid use of parking in private-lots for employees.

Strategy 3: Active management of on-street parking Downtown. Once employees have adequate options to park remotely and connect to jobs in Downtown, measures including paid on-street parking and time-restricted parking in Downtown should be deployed to ensure that employees utilize remote parking opportunities leaving spaces in Downtown available for visitors.

Strategy 4: Event-specific parking management.With an active management plan for parking in place, the City would be able to transition use of the parking supply during large events. During events demanding large amounts of parking, the City could transition

some of the parking available to employees with additional incentives available to employees to travel to Leavenworth by rideshare or public transit during events and festivals. This would allow the City to better accommodate and manage the parking required for festivals, without construction of additional remote parking facilities.

PROJECT BENEFITS

- A parking system that visitors can easily navigate
- The flexibility to transition parking between employees and visitors
- A system that allows visitors to park once

GUIDING PRINCIPLES

Vibrant



Several strategies identified as part of this project focus on more efficiently parking employees, which creates more opportunities for parking visitors.

Realistic



Many of the management strategies identified as part of this project can be implemented without significant costs and within the near-term (less than five years).

Supported



Project stakeholders, PAC members, and community members have all expressed support for parking management strategies as part of this study.



2-Hour Parking Sign. Source: City Of Seattle, 2020.

Turnover of parking in
Downtown Leavenworth
was measured to be below
typical parking turnover rates
when data was collected
for the Downtown Parking
Management Plan. The data
indicated that parking spots
in Leavenworth were turning
over approximately half as
often as the industry average.
This was believed to be a result

of employees using on-street parking in Downtown. By shifting employees to parking located outside of Downtown connected by transit, parking in Downtown would be more frequently available to visitors near their destination. This would limit the need for people unfamiliar with Leavenworth to circulate through



Example of On-Street Parking Meters. Source: City of Lexington, KY.

Downtown looking for parking, improving not only the parking system, but also reducing congestion in Downtown.

Today, management of parking within Leavenworth for events and festivals requires starting from scratch each time management is needed and relies on parking lot owners to actively manage their parking supply. By putting management strategies in place, first focused on the management of employee parking, those systems can be leveraged to more efficiently manage the supply during times of high demand.

These strategies paired with other identified projects would help to create a "park once" experience for visitors in Leavenworth. With the ability to transition remote parking to visitors and have transit and bike/scooter share options in place, visitors can park and easily navigate between destinations using other modes.

ADDITIONAL CONSIDERATIONS

Support of Other Projects - Strategies above would support the US 2 Ski Hill to River Bend Streetscape Improvements Project, Transit-on-Shoulders, and Bike/Scooter Share Projects, and TDM strategies. These management strategies would ensure that Leavenworth's parking system has adequate capacity in strategic locations encouraging visitors to park and then leverage other mode choices to travel within Leavenworth.

Increased Transit Service - As Link Transit continues to increase service on Route 22 over the next several years and continues the operation of the circulator shuttle to complete Route 22 within Leavenworth, the use of transit by employees participating in TDM programs will continue to increase

The Downtown Parking Plan - While many of the strategies identified as part of this study are also documented in the Downtown Parking Plan, solutions in this study are strategies that would provide meaningful benefit to the US 2 corridor as a whole and support other projects identified by this study. The continued implementation of other strategies documented in the Downtown Parking Plan, not discussed in this plan, will continue to contribute to improving Leavenworth's transportation system.

COST

Cost for this project would vary depending on implementation of management strategies.

US 2 Express Bus Access at Peshastin

PROJECT DESCRIPTION

This project would relocate the Peshastin bus stop to the shoulders of US 2, significantly reducing travel time for Route 22 between Leavenworth and Wenatchee. To connect bicyclists and pedestrians from Peshastin to the stops on US 2, this project would construct a bicycle and pedestrian bridge adjacent to the existing Main Street Bridge in Peshastin. Improvements to pedestrian facilities between the new bridge and School Street would be completed as part of this project, as would enhanced crosswalk markings connecting the bridge to the improved transit stop.

PROJECT BENEFITS

Transit travel time savings between Wenatchee and Leavenworth

An all-ages all-abilities bicycle and pedestrian bridge to Peshastin that connects to transit

The narrow Main Street Bridge has an outdated design without opportunity for expansion to better serve non-motorized modes. By constructing a separate, parallel footbridge the project would accommodate bicyclists and pedestrians on a separate facility that would be accessible and comfortable for people of all ages and all abilities with a direct connection to transit.

To serve Peshastin, Route 22 must currently divert off of US 2 over the Main Street bridge. This loop into

Peshastin adds six minutes to the route travel time, resulting in higher costs to operate the route and less competitive travel times compared to driving. The additional six minutes is estimated to add \$250,000 in operating costs to Route 22 over the course of one year. By creating a connection and improved stop on US 2, this project would lower operating costs while improving travel time and reliability.



Bicycle & Pedestrian Bridge. Source: Public Square, 2018.



GUIDING PRINCIPLES

Reliable

Safe & Complete

Vibrant

Supported



With the travel time savings from eliminating the loop into Peshastin, Route 22 would operate more efficiently with better on-time performance making transit a more attractive and reliable option.



A parallel facility would serve both bicyclists and pedestrians of all-ages and abilities through the separation from vehicles crossing the Wenatchee River.



The addition of an all ages, all abilities bicycle and pedestrian bridge serves the dual purpose of making transit more efficient and creating an amenity that could benefit outdoor recreation along the US 2 corridor.



Both Link Transit and community members have expressed support for this project.

ADDITIONAL CONSIDERATIONS

Cost-Benefit - This project would result in a direct cost-savings for Link Transit. With an estimated savings of \$250,000 per year and a total capital cost of between \$4 and \$5 million, investment in this project would be recovered in approximately 15 years.

Support of Other Projects - Transit travel time savings and reliability resulting from this project benefit other high-performing projects including: Parking Management, US 2 Ski Hill to River Bend Streetscape Improvements Enhancement. This project would also support several other projects including Employee Travel Demand Management and the Transiton-Shoulders project, making transit a more attractive option during congested conditions.

Funding Sources - This project could apply for grants and other funding sources that could not be used for roadway capacity improvements.

COST



US 2 Ski Hill to River Bend Drive Streetscape Improvements

PROJECT DESCRIPTION

This project would reconfigure US 2 in Leavenworth to provide a more complete and efficient facility for vehicles, transit, walking and bicycling. The improvements would enhance local accessibility for residents, prioritize the needs of emergency service vehicles, transit, and shuttles along the corridor and separate bicyclists and pedestrians from vehicles on US 2.

To improve mobility for local traffic using US 2 to access residential neighborhoods and Downtown Leavenworth, the existing westbound right-turn lane at Chumstick Highway, 9th Street, and Front Street would be extended. Only right-turning vehicles, transit, shuttles and emergency services would be able to utilize the extended right-turn lanes. All signalized intersections along US 2 in Downtown Leavenworth would be modified such that, only transit, shuttles, and emergency services would be able to continue through the intersection in this lane, with all other drivers being forced to turn right.

As part of this project, a traffic signal would be added at Front Street and the existing signals would be upgraded to include signal preemption. Signal preemption would allow vehicles with the appropriate transponder (emergency services, transit, and

shuttles) to preempt the regularly operating traffic signal to prioritize their movement through the intersection. To allow emergency services, transit, and shuttles to access the general purpose traffic lane ahead of the queue on US 2, the traffic signal would hold all through traffic on US 2 for approximately seven seconds to allow emergency services, transit, and shuttles in the right-turn lane to transition back into the general purpose lane.

Pedestrian improvements would include the addition of a visually appealing fence or landscaped buffer to provide separation between pedestrians and bicyclists and vehicles on US 2. This barrier would also discourage jaywalking across US 2 between intersections, reducing pedestrian crash potential and improving traffic flow on US 2.

Bicyclists on US 2 would be accommodated by a shared-use path between Chumstick Highway and Ski Hill Drive. The existing sidewalk on the north side of US 2 would be widened to accommodate both bicyclists and pedestrians. While bicyclists would transition to the shared-use path between Ski Hill Drive and Chumstick Highway, to the east and west of the improvements the existing on-street bicycle lane would be maintained. Crossings at Ski Hill Drive and Chumstick Highway would be restriped with additional markings, including green painted conflict areas, to connect bicyclists to the north side of US 2.





PROJECT BENEFITS

- Truly multimodal US 2 that is more inviting to pedestrians and bicyclists
- Travel time benefits for transit, shuttles, and emergency services without adding measurable delay for general traffic
- Destinations in Leavenworth better connected via transit, shuttles and bike/scooter share

Today US 2 has on-street bicycle lanes through most of downtown and sidewalks on both sides. While confident cyclists use the on-street lanes, less confident cyclists tend to use the sidewalks, which vary in width and cannot always accommodate both bicyclists and pedestrians. With the addition of a shared-use path on the north side of US 2, this project would create a space designed to be shared by bicyclists and pedestrians. Paired with wayfinding and crossing improvements, the shared-use path would create an accessible route through downtown for both bicyclist and pedestrians.

Signal priority paired with queue-jump at signalized intersections would improve travel time through Leavenworth for emergency services, transit, and shuttles. Travel time improvement for shuttles and transit not only improves on-time operations, but also creates an incentive to use transit or shuttles to travel with Leavenworth. For emergency services, improved travel times translates into lower response times, meaning they can get to people in need in less time.

The priority for transit and shuttles paired with complete bicycle and pedestrian facilities would create more options in how people travel between Willkommen Village and Icicle Road. Paired with a bike/scooter share program, discussed in the following section, visitors would have access to multiple options to travel within Leavenworth whether arriving by transit or shuttles or driving and parking off the corridor or remotely.

GUIDING PRINCIPLES

Reliable



Using extended right-turn lanes paired with signal preemption to prioritize transit would create a more reliable transit option within the region. The extended right-turn lanes available only for use by transit, shuttles, emergency services, and right-turning vehicles would also ensure better access to residential neighborhoods.

Safe & Complete



With improved access and signal priority, this project would allow for emergency services to reduce response times for Leavenworth residents.

Vibrant



This project would encourage more efficient use of the corridor by creating mode shift opportunities by incentivizing the use of transit and shuttles through travel-time savings.

Supported



Identifying a way to better prioritize emergency services along US 2 through Leavenworth while continuing to accommodate vehicles, bicyclists, pedestrians, and transit was supported by the community.

ADDITIONAL CONSIDERATIONS

US 2 Driveway Access - While full access would be maintained at all intersections along US 2, the extended right-turn pocket would eliminate the ability for eastbound traffic to turn left between intersections from Chumstick Highway to Front Street.

Support of Other Projects - This project would support the Bike/Scooter Share, Transit-on-Shoulders, and Shuttle Partnership projects. This project ensures that transit and shuttles operating on US 2 have a travel-time savings and can operate efficiently within Leavenworth encouraging higher use of the services, resulting in mode-shift for trips to Leavenworth. The project also increases comfortable space for bicyclists encouraging them to park once and utilize bike share and transit options to travel within Leavenworth. The reliable connection between Leavenworth destinations

would also support parking management strategies and make the "park once" strategy achievable for Leavenworth visitors.

General Purpose Traffic Travel Time - While this project would improve travel time for transit, shuttles, and emergency vehicles, there would be no benefit to travel time for drivers traveling through Leavenworth on US 2.

Implementation - This project could be implemented in steps as funding is available. Improvements could be made one intersection at a time or with priority for the westbound direction, followed by the eastbound direction.

COST



Cost for this project is expected to vary based on phased implementation.

Chumstick Highway to River Bend Drive Connection

PROJECT DESCRIPTION

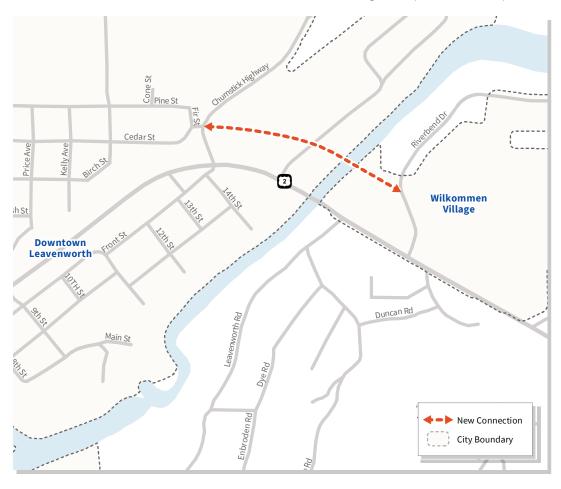
This project would create a new connection across the Wenatchee River connecting Chumstick Highway to River Bend Drive. This project would include construction of a new intersection with Chumstick Highway, a bridge across the Wenatchee River, and improvements to River Bend Drive from the new connection to US 2.

The new bridge would provide two general purpose travel lanes (one in each direction) to accommodate vehicles. Bicyclists would be accommodated in a siderunning path shared with pedestrians on the north side of the bridge, while a sidewalk on the south side of the bridge would accommodate pedestrians.

To create the opportunity for transit to bypass US 2

during events (when US 2 is highly congested) and to facilitate better transit connections to residential neighborhoods, both the River Bend Drive intersection with US 2 and the Chumstick Highway intersection could be upgraded to include transit pre-emption. This technology could also be utilized by emergency services using this connection to access residential neighborhoods in Leavenworth.

The Chumstick Highway to River Bend Drive connection is the only viable project evaluated as part of this study that would result in significant travel time savings on US 2 during typical summer weekends. Evaluation of this project under summer weekend conditions resulted in a travel time savings of four minutes in the eastbound direction on US 2 and three minutes in the westbound direction. These travel time savings are equivalent to a 40 percent reduction from





Example of New Bridge Cross-Section. Source: Aspen Public Radio, 2018.

existing summer weekend travel times on US 2. During peak festival times heavy congestion on US 2 would still be expected to occur as a result of the limited capacity on US 2 as it exits Leavenworth.

PROJECT BENEFITS

- 40% reduction in summer weekend travel times on US 2 through Leavenworth
- Additional capacity to move people across the Wenatchee River
- Improved bicycle and pedestrian connections to local trails and destinations

Today, US 2 is the only route that crosses Wenatchee River within the Leavenworth city limits, with extensive out-of-direction travel required to reach alternate crossings. Bottlenecks at both the Chumstick Highway and River Bend Driver intersections meter traffic on the bridge. While a new bridge would operate at a lower capacity than US 2, it would also reduce the bottleneck for traffic traveling on US 2 at both the Chumstick

Highway and River Bend Drive, increasing the number of vehicles able to cross the existing bridge. Considering the removal of bottlenecks and additional capacity offered by a new bridge, this project would increase the number of vehicles that can cross the Wenatchee River more than 50 percent compared to the capacity that exists today.

While a new bridge would facilitate the movement of vehicles across the Wenatchee River, it would also serve as an important connection for bicyclists. The improvements already in place for bicyclists and pedestrians west of Chumstick Highway paired with dedicated facilities on the new bridge would create a parallel route to US 2 between River Bend Drive and Ski Hill Road through Leavenworth. The route would also provide a connection to the middle school and high school for students living on the east side of the Wenatchee River.

GUIDING PRINCIPLES

Reliable



This project would improve travel times on US 2 by 40 percent during summer weekend conditions, making US 2 a more reliable route during periods of congestion. A new connection across the Wenatchee River would also ensure that movement across the river could continue to occur in the event of an incident on the US 2 bridge.

Safe & Complete



This project would improve public safety by creating an additional capacity to move people, vehicles, and emergency responders across the Wenatchee River in the event of an emergency or natural disaster. With dedicated facilities for bicyclists and pedestrians, this project would also reduce the exposure of bicyclists crossing the Wenatchee River creating a safer and more comfortable bicycling experience.

Vibrant



The new connection across the Wenatchee River would serve as a gateway to Leavenworth for local residents, bicyclists and pedestrians. With improved facilities for bicyclists and pedestrians crossing the river, this connection could also encourage a mode shift for local trips crossing the river.

ADDITIONAL CONSIDERATIONS

Right-of-Way - A new connection between Chumstick Highway and River Bend Drive including construction of a new bridge will require significant right-of-way acquisition.

Continuing Public Outreach - Advancing this concept past the planning level will require engagement and support of the greater Leavenworth community.

Environmental - Work near the Wenatchee River is likely to require special permits and coordination with resource agencies.

Additional Improvements - Reconfiguration will be required for several local roadways including Chumstick Highway, Alpensee Strauss, Riverbend Drive and access to Safeway.

Maintenance - This bridge would be a local road owned and maintained by the City of Leavenworth.

COST



\$27M to \$32M

US 2 Undercrossing

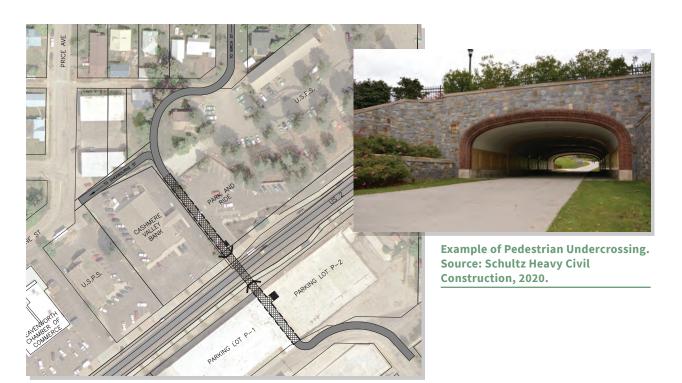
PROJECT DESCRIPTION

This project would connect the residential neighborhoods north of US 2 to downtown Leavenworth and the Wenatchee River Waterfront by constructing a US 2 undercrossing near the Leavenworth Park and Ride. The undercrossing would be accessible from both the Park and Ride lot and Sherbourne Street on the north and Division Street on the south, creating a more seamless connection across US 2 for bicyclists and pedestrians.

Leavenworth's Comprehensive Plan identifies US 2 as a barrier for biking and walking that separates the downtown area from the residential areas. All existing options for crossing US 2 near downtown expose bicyclists and pedestrians to conflicts with right-turning vehicles, except for the High-Intensity Activated Crosswalk (HAWK) beacon at City Hall, which is a mid-block crossing. The large number of pedestrian crossings that can occur in Downtown Leavenworth on a summer day or during events (over 3,000 pedestrians were counted on a Sunday in August at one crossing) create delay for vehicles along the US 2 corridor. Providing a grade separated crossing for and pedestrians creates fewer conflicts and more comfortable experience that reduces barriers to visiting the waterfront, encourages parking once in Downtown to visit multiple destinations, and improves operations at signalized intersections.

PROJECT BENEFITS

- Separation of vehicles and pedestrians and bicyclists crossing US 2
- Elimination of a barrier for residents accessing the waterfront area
- Encouragement for Downtown employees and patrons to "park once"



GUIDING PRINCIPLES

Reliable



The large number of pedestrian crossings that can occur on a summer weekend or during events reduce the efficiency of signalized intersections and add delay to the US 2 corridor. Providing a grade-separated crossing of US 2 would reduce this conflict, improving the efficiency and reliability of the corridor. Similarly, a grade separated crossing would make parking once in downtown and traveling between destinations more feasible, reducing the number of vehicles in downtown cruising in search of a parking space.

Supported



The community and stakeholders have supported project ideas that lower the number of pedestrians crossing US 2 during summer weekends and festivals.

Safe & Complete



The separation of pedestrians and bicyclists crossing US 2 would not only reduce potential conflicts with vehicles, but also create a more comfortable biking and walking experience.

Vibrant



Encourages residents to walk or bike to the downtown or the waterfront area by eliminating the need to cross US 2, which is identified as a barrier separating downtown Leavenworth and the waterfront from residential neighborhoods. The ability to "park once" also makes downtown a more accessible destination.

ADDITIONAL CONSIDERATIONS

Enhanced Pedestrian Separation - This project should be paired with enhanced modal separation on US 2, through use of planters or visually appealing fencing to encourage use of the undercrossing.

Wayfinding - Wayfinding signs will be required to direct bicyclists and pedestrians on both sides of US 2 to the undercrossing.

Right-of-Way - Some right-of-way acquisition will be required to connect the undercrossing to neighborhood streets facilitating a connection for residents.

COST





Project Background

As one of two major state highway corridors over the Central Cascades, US 2 serves as a route for travel to and from desirable locations across the state. Within the Upper Wenatchee Valley, US 2 also serves as a vital regional and local connection for the communities of Leavenworth, Dryden, Peshastin, Cashmere, and Wenatchee. Tourist travel in the area is driven by outdoor recreation near Leavenworth and throughout the eastern slope of the Central Cascades and festivals hosted within the City of Leavenworth, including Oktoberfest and the Christmas Lighting Festival.

→ Transportation Challenges on the Corridor

While US 2 is a major highway that traverses the Cascades connecting Eastern and Western Washington, it also operates as a "main street" through the City of Leavenworth. The dual purpose as both a major highway and local main street creates the need to serve both regional and local trips in the corridor. While residents rely on the corridor for daily errands and to commute to and from work, it must also accommodate regional auto and freight trips passing through the Upper Wenatchee Valley, as well as recreational travel by all modes.

The corridor has several unique travel characteristics, described on the following page.



Geography & Topography

Throughout the study area, the US 2 corridor is constrained by geography, limiting options for capacity improvements. This study focuses on a 23-mile stretch of US 2 bounded by Coles Corner to the west and Cashmere to the east. Just as the geography and topography vary throughout the study area, so do the constraints on the US 2 corridor.

From Coles Corner to Leavenworth city limits, US 2 traverses Tumwater Canyon. This portion of the corridor is bounded by steep slopes on one side and the Wenatchee River on the other. Due to the topography along this portion of the corridor, US 2 is a two-lane road with paved shoulders and a passing lane provided intermittently. This portion of the corridor is prone to closure due to avalanches in Tumwater Canyon. The only alternative route for this portion of the corridor is SR 207 to Chumstick Highway, which is not only a much longer route, but is also not traversable by freight due to tight curves between Plain and Leavenworth.

Within the City of Leavenworth the main topographic constraint for the corridor is the Wenatchee River. US 2 crosses the Wenatchee River between Alpensee Strasse and E. Leavenworth Road. This is the only river crossing within Leavenworth city limits. At the west end of

Leavenworth, Icicle Road crosses the Wenatchee River, approximately one mile south of US 2; however, connecting back to Leavenworth, requires an out-of-direction route totaling nearly six miles. To the east, the closest river crossing is three miles away, where the Main Street Bridge crosses the river and connects to US 2 in Peshastin. Accessing this crossing from the City of Leavenworth requires an additional two miles of out-of-direction travel using Chumstick Highway and North Road. The limited number of crossings with a direct connection to Leavenworth put added pressure on US 2, which serves as both the "main street" through Leavenworth and the primary ingress option for emergency services and egress option for residents in the event of a natural disaster.

East of Leavenworth, steep rock face paired with two narrow bridges over channels constrain US 2 just outside the Leavenworth city limits. Beyond Prey's Fruit Barn & Orchards, land along the corridor transitions to agricultural land and there are fewer topographic constraints on the corridor. Through this portion of the corridor, US 2 widens to provide local access intermittently through a two-way-left-turn lane and/or dedicated right-turn lanes before transitioning to a four-lane facility at the SR 97 interchange.



Seasonal Travel

US 2 is one of the primary routes connecting the population in Western Washington to recreational destinations on the east side of the Cascades. This results in a significant increase in traffic volume on US 2 during the summer months, which is particularly pronounced on summer weekends. West of Leavenworth, US 2 traffic volume on summer Saturdays (June, July, and August) is 48 percent higher than winter Saturdays (December, January, February). East of Leavenworth, US 2 traffic volume on summer Saturdays is 31 percent higher than winter Saturdays, with an overall increase in traffic occurring during the summer months.



Festivals & Events

Throughout the year festivals and events take place in Leavenworth, attracting visitors from all over the state. The largest event, the Christmas Lighting Festival, can draw over 20,000 visitors, creating parking, circulation, and emergency access issues not only within Leavenworth, but also on US 2. During the Christmas Lighting Festival, queues on US 2 can extend as far as the interchange with SR 97, approximately four miles. In recent years, the City, Chamber of Commerce and law enforcement agencies in the area have partnered to deploy management strategies including traffic control by flaggers at US 2 intersections in the City and emergency response staging.

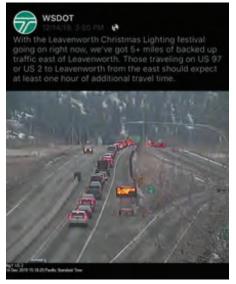


Figure 1: Queueing on US 2 during Leavenworth's Tree Lighting Festival. Source: Facebook, 2019





→ Existing Plans & Studies

Recent plans and studies have identified potential improvements to the US 2 corridor and strategies for managing parking demand in the City. These plans and studies include:

Chelan County Transportation Element Leavenworth Comprehensive Plan

Leavenworth Downtown Strategic Parking Management Plan







For a detailed summary, see the Existing & Planning Context Memo, located in **Appendix A.**

Chapter 2

Vision & Guiding Principles



Vision & Guiding Principles

The US 2 Upper Wenatchee Valley Corridor Transportation Study began in late 2018 with data collection and field observations conducted during the Tree Lighting Festival. The study was guided by and consistent with WSDOT's Practical Solutions approach to ensure that policies, programs, and projects identified by this study are not only realistic, but also vetted by the community.

A key step in this study was the development of the vision for the corridor and a set of guiding principles, which were used to inform the entire process, including the selection and evaluation of the highest performing corridor improvements. The vision and guiding principles were established with collaboration and input the Project Advisory Committee, which is described in the following section.

Corridor Vision

This study establishes a future vision for the US 2 Upper Wenatchee Valley Corridor that:

- » Provides reliable transportation options for all means of travel;
- » Accommodates emergency access, local trips, US 2 highway travelers into and out of the area, and freight movement;
- » Enhances the region's unique identity.

Overall Study Guiding Principles

The following guiding principles were established for evaluating potential solutions along the US 2 Upper Wenatchee Valley Corridor. Investmentsidentified by this study must advance the creation of a corridor that is:

Reliable



Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.

Safe & Complete



The corridor offers complete, multimodal infrastructure where appropriate to meet users' needs and enhance corridor safety.

Vibrant



Improvements support Leavenworth's tourism industry and growing seasonal usage of the corridor.

Realistic



Improvements are practical, fundable, and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from seasonal and special event travel.

Supported



Stakeholders and the community will be engaged to identify mutually beneficial solutions.

Chapter 2

→ Stakeholders & Community Engagement Methods

Over the course of the study, a variety of engagement methods were deployed so that input from the perspectives offered by diverse corridor stakeholders and the broader community was heard at appropriate study milestones.

Stakeholder Interviews

As part of the early engagement process, 17 stakeholder interviews were completed by the study team. Stakeholder interviews included residents, local business owners, local community group representatives, service providers, and agencies responsible for operations along the US 2 corridor. Stakeholder interviews were used to understand the opportunities and constraints along the corridor from the agencies and individuals that rely on the corridor on a daily basis.

The full list of interviews conducted is shown to the right and a detailed summary of the interviews can be found in **Appendix B.**

Festival Operators

- » Chantell Steiner, Leavenworth Festhalle Civic Center Oversight Committee
- » Steve Lord, Chair of Oktoberfest
- » Nancy Smith, Executive Director of Leavenworth Chamber of Commerce

Community Groups

- » Wilma Cartagena, President of NCW Hispanic Chamber of Commerce
- » Doug Clarke, Vice-Chairman of Peshastin Community Council
- » Tim Bentz, Transportation Supervisor with Cascade School District
- » Josh Harmening, House Manager with Tierra Village

Businesses & Service Providers

- » Dan Carr, Owner of Visconti's Restaurant
- » Chris John, General Manager of Posthotel
- » Gary Plannagan, Owner of Osprey Rafting Company
- » Ed Rutledge, Owner of Eagle Creek Winery
- » Brian Pulse, Director of Emergency Medical Services with Cascade Medical Center
- » Lisa Worthen and Eric Worthen, Owners of Dan's Food Market

Agencies

- » Lieutenant Kelly Gregerson, Washington State Patrol
- » Terry Van Hoven, WSDOT Maintenance
- » Steve Burger, Link Transit
- » Monica Lough and Craig Larson, Port of Chelan County

Project Advisory Committee

The US 2 Upper Wenatchee Valley Transportation Study benefited from the expertise of a Project Advisory Committee (PAC), which was comprised of volunteers from the following organizations:

» Chelan-Douglas Transportation Council

» Leavenworth Chamber of Commerce

» Chelan County

» Friends of Leavenworth

» Chelan County Fire District #3

» Link Transit

» Chelan County Sheriff

» WSDOT

» City of Leavenworth

» Local Growers

» Leavenworth Planning Commission

The PAC met five times over the course of the project. Their role was to provide local input and context from the perspective of their representative organizations and to serve as a sounding board for study decisions.

During the meetings, the study team shared cross-section, intersection, and non-motorized access concepts and asked PAC members to provide input on potential fatal flaws and/or opportunities that could be leveraged with each investment. Summaries of the PAC meetings are included in **Appendix C.**

→ Community Input

The community was successfully engaged at three major milestones.

The Vision & Principles

Input on the Corridor Vision and Guiding Principles, developed through collaboration with the PAC, was collected from the community in the form of a survey. The community was asked to provide input on the Vision and Guiding Principles, including identifying the principles that were most important to them and identify any additional corridor opportunities and constraints not identified by the study team. The survey received responses from 166 community members, ranging from Leavenworth residents to people who reside west of the Cascades.

Input from the survey was used to finalize the Guiding Principles and Vision for the study. The top two Guiding Principles, selected by the community through the survey, were also weighted more heavily during the project evaluation process.

The Projects

The PAC had an influential role in developing project ideas for this study. At the first PAC meeting, members were asked which modes of transportation would be most important on each of the four segments of the corridor. With consideration for walking, biking, local trips, regional trips, emergency services, freight, and "other", members were asked whether they thought each mode was necessary to accommodate on US 2, could be accommodated on parallel routes, or did not need to be accommodated at all. This input from the PAC began the framework for project development and prioritization along the corridor. The community also had an opportunity to provide input on project ideas through an online



pin-map. Using this map, the community could "like" or "dislike" project ideas developed by the study team, add their own project ideas, or comment on ideas on the map. The opportunity to provide input was live during the summer months and was promoted at the Leavenworth Farmers Market, on agency websites, and on changeable message signs on US 2 during a summer weekend. The community added 115 ideas to the pin-map and provided 175 comments and nearly 1,000 "likes" and "dislikes" for project ideas.

Input collected from the online pin-map was used to evaluate projects under the Supported Guiding Principle. Nine projects added by community were also added to the project ideas and carried through the project evaluation process.

The Plan

The Draft Plan was presented to the community at a February 13, 2020 Community Workshop.

At the meeting, community members had the opportunity to view the projects evaluated in greater detail, ask questions and provide input. At the end community members were asked to identify projects that they thought should be moved forward if funding were available. This opportunity to provide input was also made available on the project website. This information was then used to refine how projects are presented in the final plan. For a more detailed summary of the Community Engagement process, see Appendix D. A time line summarizing engagement of both the PAC and broader community is shown on the following pages.







Picase to fac where you fee. This will help us better understand your feedback

(9) Bud the desired

(9) Bud the desired

(1) Bud the feedback

(2) Bud the feedback

(3) Bud the feedback

(4) Bud the feedback

(5) Bud the feedback

(6) Bud the feedback

(7) Bud th

अ



此

Q

PAC MEETING #1

- How should we accommodate US 2 users?
- •What is the vision for the US 2 corridor?
- •What principles should guide this study?
- Draft Vision & Guiding Principles
- •Existing Planning & Context
- Stakeholder Interviews

PAC MEETING #2

- Provided input on Vision & Guiding Principles
- •How should we evaluate potential projects?

COMMUNITY SURVEY

- •Completed on the project website with 166 responses received
- •Do the guiding principles align with community values?
- Which principles are most important?
- •Are there other guiding principles this study should consider?



Number	Guiding Principles	Metric Description	Ranking
1	Salidah, Josef, organical communices, foreigh, and emergency requiredes have applicate to maintain a reliable travel time between key declinations.	Ingraves cardioris and line under current or future availables.	As Reduced ofference in twelf time requirement along unrished between converse exercision, and even times and grid conditions for both summe exercised, and events. As Reduced of times between the private of the As Reduced to deliference in hard forces between the private conditions and somewar excitation or events, that not both particularly a behinder improved or exercised by a planning or programatic and the private of the private of the private of the area of the planning or programatic forces on the private of the ofference in the condition on the condition between the Common of Improved the difference in these times in the condition to the private of th
		1.2 Creatins more reliable transportation connections in the region.	En Major Connection (Serves large number of uses or multiple modes). In Minor Connection (Serves primarily local bigs, or only one mode of low 0- No.
	Safe & Complete. The constant offers appropriate multimodic infradracture to exect users' needs and exhance safety.	21: Improves energiesly requires times and assess to the sumbles.	So Yes So No
2		2.2 Pions a lineare sight distance issue or identified model conflict point, including impressing the linequency or conflict of pedestrian constings, and access to more complete kitcycle and pedestrian facilities along the contribute.	Sin Yes. Sin No.
	Elevat. Improvements supporting the region's economy and growing seasonal mage of the sortidar.	E1: Provides for a unique and selectning local experience.	So Major amonity or enhancement In Ministeramonity or enhancement On Nissee
		1.2 Project encourages more efficient use of the contider, in series of the times often people based, the modes they use, and toos vehicles are stored.	for Project encourages shifting of trips by mode, to other peak times and improves parking management to No.
4	Radidia, impronnents are precinal fundate and implementation within a manufacte timehame and imbule continue solutions to before manage traffic impacts from seasonal and special event baset.	E1. Project can be completed within available Eight of Step.	En No Kight of Way Aquation Required En Massaul Right of Way Aquation Required On Signiflusari Right of Way Aquation Required
		E2 Project costs are aligned with lookyet constraints.	So Lose Cotal Improvement (SD-SEDCOD) So Maderate Improvement cost (SEDCOD) So High cost (SIM+)
	Supported. Saleholders and the community will be engaged to identify mutually condition on times	1.1 Receives support from the community and diabeholders. Broughout this shale.	Ez-High So Medium









LOCAL EVENT

- •In-person event for local residents
- What ideas do you have for improvements on US 2?
- Development of potential project ideas
- •Created project evaluation matrix to help screen projects with fatal flaws

PAC MEETING #3

- •What have we heard from the community so far? How have we used their input?
- •Does our project evaluation matrix work?
- •How should we rank project ideas?



- •Online map live during the summer travel months
- •Asked the community to provide input on potential project ideas
- Community members added projects they wanted to see considered
- •Received 115 new ideas, 175 comments and over 700 "likes" and "dislikes"
- Completed evaluation matrix for all 75 projects
- Began evaluating topperforming projects
- •Collected summer weekend traffic data on US 2
- Presentation of top-performing projects and project benefits
- •Which projects do you see as most important for the US 2 corridor?
- Which projects do you not support? Why?



April 2020 29

→ Technical Analysis & Project Evaluation

With consideration for the different contexts of US 2 over the 23-mile study area, the study areawas divided into four separate segments based on the roadway characteristics and the land use context in each area. The four corridor segments, shown on **Figure 2**, are:

- 1. Northwest: from Coles Corner to Icicle Road
- 2. Leavenworth: from Icicle Road to the Leavenworth city limits
- 3. Peshastin: from Leavenworth to US 97
- 4. Southeast: from US 97 to Hay Canyon Road

Data Collection

The following data were collected along the US 2 corridor from Coles Corner to Cashmere to describe key corridor characteristics:

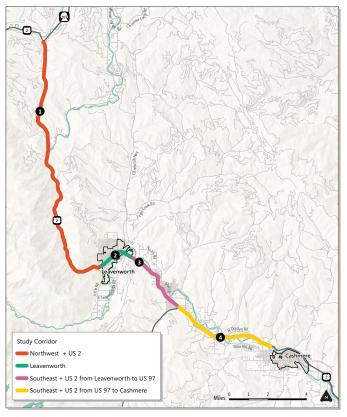


Figure 2: Corridor Segments. Source: Fehr & Peers, 2019

- » **Land Use**: Land use context around each segment, including land use types (residential, commercial, etc.), future plans for redevelopment, neighborhood access, environmental conditions, as well opportunities and constraints created by these uses.
- » Pedestrian/Bike Facilities: Conditions for walking and biking along each segment as well as parallel routes in the area, and considerations for how the need to serve those users will influence potential treatments.
- » **Transit**: A description of services operating along the segment, headways, and stops along the segment.
- » **Vehicle Operations**: Roadway configurations and features for each segment, as well as trends in volume data.
- » Safety: Crash data, provided by WSDOT, for a four-year period (January 2015 to November 2018) was evaluated for crash history, crash factors, and crash density along the segments and within the City of Leavenworth.

To better understand trends for each of these topic areas throughout the study corridor, see **Appendix A,** the Planning Context report developed for this study.



→ Project Evaluation

A total of 75 project ideas were considered by this process as ways to help achieve the Corridor Vision. The study team evaluated each of these potential investments according to the Guiding Principles established by the PAC.

The 75 project ideas were first evaluated using the Project Evaluation Matrix (see **Figure 3**). The matrix provided an objective means for evaluating how potential projects advanced the five Guiding Principles for this corridor plan. Projects could receive a maximum of 84 points based on their consistency with each of the Guiding Principles. This process assigned the most points for consistency with the top two Guiding Principles identified by the community: **Safe & Complete** and **Reliable**.

Once the evaluation matrix was complete, the ranked projects were divided into three tiers. Project tiers were based on points, with projects scoring 60 points or more being considered in the top tier (Tier 1), projects scoring between 30 and 60 points in the middle tier (Tier 2), and projects scoring less than 30 points in the bottom tier (Tier 3).

Results of the project evaluation step, including the project tiers, were then used to group projects as described in the following section.

The complete Project Evaluation Matrix, including scoring criteria, can be found in **Appendix E.**

US 2 Upper Wenatchee Valley Corridor Transportation Study Project Evaluation Criteria						
Number	Guiding Principles	Metric Description	Ranking			
1	Reliable. Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.	1.1: Improves corridor travel time under current or future conditions.	8= Reduces difference in travel times experienced along corridor between summer weekends and event times and typical conditions for both summer weekends and events 4= Reduces the difference in travel times between typical conditions and summer weekends or events (but not both) 2= Minimal improvement expected as a result of a planning or programtic solution. 0= Does not improve the difference in travel times on the corridor between summer/event times and typical conditions			
		1.2: Creates more reliable transportation connections in the region.	4= Major Connection (Serves large number of users or multiple modes) 2= Minor Connection (Serves primarily local trips or only one mode of travel) 0= No			
2	Safe & Complete. The corridor offers appropriate multimodal infrastructure to meet users' needs and enhance safety.	2.1: Improves emergency response times and access to the corridor. 2.2: Fixes a known sight distance issue or identified modal conflict point, including improving the frequency or comfort of pedestrian crossings, and access to more complete bicycle and pedestrian facilities along the corridor.	6= Yes 0= No 6= Yes 0= No			
3 the region's	Vibrant. Improvements supporting the region's economy and growing seasonal	3.1: Provides for a unique and welcoming travel experience.	6= Major amenity or enhancement 3= Minor amenity or enhancement 0= None			
	usage of the corridor.	3.2: Project encourages more efficient use of the corridor, in terms of the times when people travel, the modes they use, and how vehicles are stored.	6= Project encourages shifting of trips by mode, to other peak times and improves parking management 0= No			
4	Realistic. Improvements are practical, fundable and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from seasonal and special event travel.	4.1: Project can be completed within available Right-of-Way.	6= No Right of Way Aquistion Required 3= Minimal Right of Way Aquistion Required 0=Significnat Right of Way Aqusition Required			
		4.2: Project costs are aligned with budget constraints.	6= Low Cost Improvement (\$0-\$400,000) 3= Moderate improvement cost (\$400,000-\$3M) 0= High cost (\$3M+)			
5	Supported. Stakeholders and the community will be engaged to identify mutually beneficial solutions.	5.1: Receives support from the community and stakeholders throughout this study.	12= High 6= Medium 0= Low			

Figure 3: Project Evaluation Metrics & Scoring. Source: Fehr & Peers, 2019.

→ Project Selection

Once project evaluation was complete, the projects were identified as either an evaluated project or project not advancing based on feasibility, project complexity, timeline for implementation and adherence to the Project Guiding Principles.

Project Not Advancing

This category includes projects that were found not to advance more than two of the Guiding Principles or that received fewer 30 points in the evaluation matrix (Tier 3 projects). This category also includes projects identified as having a fatal flaw through the project evaluation process that would make implementation unachievable. Several projects identified as fatal flaw projects through the evaluation process are discussed in detail in the following chapter.

Evaluated Projects

This category includes all the projects identified by this study that were found to advance three or more of the Guiding Principles. A number of projects in this category are projects that could be implemented fairly quickly outside the scope of this study and projects that may be beneficial to multi-modal travel in the area but could be evaluated as part of other studies or transportation plans. For these projects, a description of the project as well as considerations for implementation, such as coordination needs, right-of-way, and technical challenges have been included in the following chapter.

Six of the highest performing projects, identified as providing measurable benefit to the corridor at spot locations or corridor wide were selected for a more detailed evaluation. For each of these investments, the following chapter outlines the more detailed evaluation of benefits to users, conceptual design and cost. A final list of projects selected for evaluation was determined based on information presented at the September 26, 2019 PAC meeting.



Chapter 3

Evaluated Projects



The Projects

Of the 75 project ideas that came out of this process, 39 project ideas were found to be consistent with the corridor's guiding principles and were not identified as having a fatal flaw. The following chapter summarizes first projects that were identified as having fatal flaws, then describes the projects evaluated as part of this study.

→ Fatally Flawed Projects

Fourteen project ideas were identified as having a fatal flaw that would make them either infeasible to implement or inconsistent with the ultimate goals of this US 2 corridor plan. Fatal flaws were identified through input from the community, stakeholders, the PAC, and in some cases through technical evaluation.

All projects identified as having a fatal flaw can be found in the Project Evaluation Matrix in **Appendix E.** Three major capital investments that were found to be fatally flawed are summarized below.

Roundabouts at Primary US 2 Intersections

One question that has been frequently asked is if converting US 2 intersections to roundabouts would better manage traffic by improving local access to US 2 and removing signal delay. The study team evaluated the feasibility of constructing roundabouts at three major US 2 intersections: Ski Hill, 9th Street, and Chumstick Highway. Using the Project Evaluation Matrix, this project was identified as a Tier 2 project. The project also received community and PAC member support and advanced four of the five Guiding Principles (Safe & Complete, Reliable, Vibrant, and Supported). As a result, a traffic simulation analysis of this project was performed.

The evaluation of this project in greater detail led to the identification of two fatal flaws: queueing on US 2 and the inability to implement temporary traffic control once roundabouts were in place.

Simulation of the US 2 corridor through Leavenworth with roundabouts at these intersections indicated that on a summer weekend queueing along the corridor would spillback into upstream roundabouts blocking the side-street traffic entering the roundabouts. The analysis also indicated that heavy through traffic flows on US 2 would result in relatively few gaps for traffic from local streets to enter the roundabout, which could exacerbate high delays for residents and traffic attempting to access US 2.

Another key limitation of roundabouts is the inability to deploy temporary traffic control measures. Given the dynamic nature of Leavenworth and the need for flexible traffic management during events like Oktoberfest and the Tree Lighting Festival, or even more critically, during a natural disaster, the limited flexibility associated with roundabouts was also identified as a fatal flaw. For example, in the event an evacuation was needed, the current two-way-left-turn lane could be repurposed as a receiving lane to add capacity in the eastbound direction. With a roundabout in place, this repurposing of space would no longer be possible.

Identification of these two fatal flaws resulted in the recommendation that this project be removed from further consideration as part of this study.

US 2 Widening

When the traffic volume on a roadway exceeds capacity and results in heavy congestion, as is experienced during peak times on US 2, one of the most apparent solutions is to widen the roadway. With approximately 60 feet of space between curbs on US 2 through Leavenworth, the widening of US 2 from two general purpose lanes and a two-way-left-turn lane to four general purpose lanes was considered.

While additional capacity through Leavenworth could reduce delay for through trips on the corridor, impacts to local access, parking, bicycle lanes, and sidewalks would be substantial.

Chapter 3

Right-of-way exists to accommodate four lanes of travel, but maintaining local access at US 2 intersections would require the removal of parking both on-street and in some business parking lots along the corridor. This would also require sidewalks along US 2 to be narrowed throughout Leavenworth. Widening the highway would also eliminate the ability to accommodate bicyclists on US 2 as it would require removal of the existing on-street bicycle lanes. This may result in the bicyclists choosing another route through Leavenworth or using the sidewalk with pedestrians. With the need for pedestrians to cross two additional lanes of traffic on US 2, an additional seven seconds would need to be added to pedestrian crossing time at signalized intersections on US adding additional delay to trips traveling through on US 2.

With any roadway widening project, one important consideration is induced demand. As a result of the congestion that occurs today on US 2 through Leavenworth, it is likely that there are additional users who want to travel on US 2 but choose not to. These users may be taking alternate routes, either local or regional, shifting their travel to off-peak times, or using other modes like biking or walking. As widening US 2 through Leavenworth would be expected to reduce congestion and make traveling on US 2 more appealing, this may lead to users altering their routes, travel times, or mode choices, resulting in an increase in demand on US 2.

Lastly, for US 2 widening to be truly effective, the widening would need to extend all the way to SR 97. Through a microsimulation evaluation of two-lane travel through Leavenworth, the simulation indicated that at the east end of Leavenworth, the transition from two through lanes of travel to a single through lane would create a bottleneck resulting in significant queueing and congestion.

A high-level cost estimate developed for widening US 2 from the west end of Leavenworth to SR 97 resulted in a cost of at least \$32,000,000¹. Given the costs required to widen US 2 through this entire section and the impact of widening US 2 to local access, businesses and parking and biking on the corridor, this project was identified as not feasible and removed from further consideration.



¹Cost-estimated using estimated cost per mile for roadway improvements developed by Arkansas Department of Transportation. Costs for widening from a 2 lane to 4 lane roadway in an urban area we determined to be most applicable to the Leavenworth section. Given the extent of rock blasting and bridge widening determined necessary for widening between Leavenworth and SR 97, costs associated with construction of a new roadway in a mountainous area were determined to be most applicable to that section. This cost estimate does not include a number of other likely costs, such as right of way acquisition.

Improving Parallel Routes

Another question that often comes up is whether there's the opportunity create a US 2 bypass or sufficiently modify parallel routes to offer a viable US 2 alternative. To answer this question, the study team considered what it would take to improve three potential US 2 alternatives.

Icicle Road to East Leavenworth Road: The first route considered, Icicle Road to East Leavenworth Road could be designated as an alternate route for the segment of US 2 through Leavenworth. This route provides access to resorts and residential areas located in Chelan County. Both Icicle Road and East Leavenworth Road are two-lane roadways; however, Icicle Road has paved shoulders wide enough to accommodate bicyclists, while East Leavenworth Road has no shoulders. Both roadways are also heavily utilized by bicyclists and other recreational modes of travel and have direct access to residential driveways.

Using this route as an official alternate to US 2 through Leavenworth would require substantial improvements to both Icicle Road and East Leavenworth Road. On East Leavenworth Road, widening would be required to provide a dedicated space for bicyclists or other non-motorized modes that is separate from vehicles. Increased demand on these roadways would also require significant improvements to the pavement and increase on-going maintenance costs as trucks and recreational vehicles degrade pavement faster than passenger-cars. A high-level cost estimate for this project indicates that roadway reconstruction with needed widening to improve the roadway for more consistent use would be approximately \$15,000,000.²

While the costs of capital improvements and the on-going maintenance that would be required for these roadways is one consideration in this project's feasibility, the intended use of the roadway must also be considered. This area provides public access to several recreational areas, including trailheads and Icicle Creek, some of which are located directly adjacent to the roadways. Land use in this area is mostly residential, with many residents having direct access to both Icicle Road and East Leavenworth Road. With no other route options into Leavenworth, these residents would be heavily impacted by use of these roadways as an alternate route. This impact to residents led to this project being unsupported by project stakeholders and ultimately identified as having a fatal flaw likely to prohibit the project from moving forward.

North Road to Chumstick Highway: A second route that was considered as an option to bypass both Leavenworth and Tumwater Canyon is North Road to Chumstick Highway, which connects to SR 207 near Lake Wenatchee and then US 2 at Coles Corner.

Chumstick Highway is a narrow two-lane road with hairpin curves that prevent large trucks from using this route. North Road is also a narrow two-lane roadway with no shoulder. North Road is also heavily used by the agricultural land uses between Peshastin and the connection to Chumstick Highway.

This route was identified as having several fatal flaws by the study team and stakeholders. First, while Chumstick Highway is currently used as an alternative route when Tumwater Canyon is closed, encouraging more use of this route would require significant reconstruction. This would include straightening of roadway to eliminate hairpin curves on Chumstick Highway that make it inaccessible to some vehicles. On North Road, an increase in traffic volume (which would include general purpose traffic

²Cost-estimated using estimated cost per mile for roadway improvements developed by Arkansas Department of Transportation. Assumes 10 lanemiles of reconstruction for a rural non-freeway facility.



and agricultural vehicles) would also require geometric changes such as widening to provide shoulders.



Today, North Road is a narrow roadway with many curves surrounded by agricultural uses.

The construction and widening of shoulders along with improving horizontal curves, visibility, and signage between Fox Road and Nibblelinke Road was identified as a 20-year project in Chelan County's Transportation Element. The planning level cost estimates for these improvements resulted in an estimate of \$3,500,000 and account for only 1.5 of the four miles of North Road that would need to be reconstructed. Assuming improvements on North Road are likely to cost approximately \$2,300,000 per mile, based on previous estimates completed, this project is estimated to cost nearly \$10,000,000. The cost alone would likely make these improvements infeasible but paired with the fact that this alternate route would require substantial out-ofdirection travel, this was also considered to be a fatal flaw for this project. On a typical summer weekend, travel time between the east side of Leavenworth and Coles Corner is estimated to be 22 minutes on US 2. Using Chumstick Highway to bypass Leavenworth and Tumwater Canyon is estimated to be 34 minutes, a 50 percent increase in travel time due to the longer distance even when considering congestion in Leavenworth.

Lastly, this alternate route was not supported by stakeholders or the community. Community input noted that this route is heavily utilized by not only bicylists, but cross-country skiers, and people accessing the Wenatchee River, a major concern when considering increasing not only traffic volume, but freight vehicles. The community and stakeholders also noted the concern for ongoing maintenance costs as a major concern for this project.

With costly safety improvements required, no way to make the route travel time competitive, and no support, this project was eliminated from further consideration.

Leavenworth Bypass: A third alternative route option that has been discussed in the Upper Wenatchee Valley since the 1960's is the idea of constructing a bypass that would take US 2 around both Tumwater Canyon and Leavenworth.

A reconnaissance report developed by WSDOT in 1965 evaluated the idea of US 2 leaving the current alignment at Merritt, just west of Coles Corner, following the existing SR 207 and Chumstick Highway alignment, before rejoining the current US 2 alignment just west of Peshastin. While the concept was never advanced, as congestion on US 2 has continued to increase through Leavenworth and Tumwater Canyon, the question of "would a bypass solve US 2 congestion?" continues to be asked.

The primary benefit of a bypass is to move more of the regional through trips that don't have an origin or destination in Leavenworth to a separate route that is unaffected by local traffic. In theory, through traffic could continue at higher speeds and would no longer impact Leavenworth's local mobility during the summer season.

Similar to the other alternate route options, the costs of this bypass far exceed the potential benefits. The most feasible option for a Leavenworth bypass, consistent with the idea evaluated in the 1960's would follow SR 207 and Chumstick Highway, a route with many fatal flaws as discussed above. All other potential routes would require constructing a new route through the Cascades, which would still require out-of-

direction travel, significantly reducing the potential travel benefit. As such, this alternate route was also considered fatally flawed without developing a cost estimate but is assumed to be at least \$100 million if not substantially higher.

Evaluated Projects

The projects presented in this chapter represent the most effective actions that WSDOT, Chelan County, City of Leavenworth, and Link Transit could take to achieve the ultimate vision of a US 2 Upper Wenatchee Valley Corridor that:

- » Provides reliable transportation options for all means of travel;
- » Accommodates emergency access, local trips, US 2 highway travelers into and out of the area, and freight movement;
- » Enhances the region's unique identity.

This report describes the technical analysis, stakeholder collaboration, and community outreach that collectively helped arrive at these projects. These projects all received community and/or stakeholder support, are not associated with fatal flaws, and advance the Guiding Principles established for investments along this corridor:

Reliable



Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.

Safe & Complete



The corridor offers complete, multimodal infrastructure where appropriate to meet users' needs and enhance corridor safety.

Vibrant



Improvements support Leavenworth's tourism industry and growing seasonal usage of the corridor.

Realistic



Improvements are practical, fundable, and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from seasonal and special event travel.

Supported



Stakeholders and the community will be engaged to identify mutually beneficial solutions.

First, six high-performing projects that were evaluated in greater detail are presented, including a summary of project benefits, adherence to the Guiding Principles, additional considerations, and cost.

To understand the project evaluation process and findings in more detail, see **Appendix F**. These projects include:

- » US 2 Roundabout at Icicle Road
- » Parking Management
- » US 2 Express Bus Access at Peshastin
- » US 2 Ski Hill to River Bend Streetscape Improvements
- » Chumstick Highway to River Bend Drive Connection
- » Undercrosing at US 2 Park and Ride.

These six projects are followed by numerous other projects found to advance the Guiding Principles, that should be considered for further evaluation by local agencies.

High Performing Projects

→ US 2 Roundabout at Icicle Road



Project Description:

This project would construct a single-lane roundabout at the intersection of Icicle Road and US 2. Paired with center-island landscaping, a display of public art or a sculpture, and Bavarianthemed signage, the roundabout would create a gateway to Leavenworth as visitors arrive from Tumwater Canyon. Located at the western terminus of Link Transit's Route 22, this project would also create an improved turn-around for transit and shuttles operating on the US 2 corridor through Leavenworth.

Implementation Considerations:

The first consideration is the ability to deploy temporary traffic control. Roundabout control limits the opportunity to deploy temporary traffic control measures. While queueing reaching Icicle Road was not observed this should be considered in evacuation planning.

Costs associated with maintaining landscaping and including public art in the roundabout design should also be considered. While the roundabout would be constructed on a WSDOT facility, their fund contributions would not cover the addition of art or other visual enhancements to create a visual gateway to Leavenworth. Similarly, any center-island landscaping would be maintained by the City of Leavenworth.

As growth occurs and traffic volume at this intersection increases, the need to install traffic signals to meter traffic through the roundabout may need to be considered if queueing and congestion reach this intersection in the future.

This project is estimated to cost between \$2.5 to \$3.5M.

Project Benefits:

This project would advance all five of the Guiding Principles as described below.

Reliable

This project would improve access for locals using Icicle Road to access homes or jobs without impacting travel times or congestion on US 2. Today, US 2 through traffic has priority at the intersection over traffic turning left onto Icicle Road and traffic on Icicle Road, which is stop-controlled. This configuration forces locals to wait for gaps in traffic on US 2, which can be difficult during periods of high congestion. With roundabout control at this intersection, all approaches would be yield-controlled, giving more equal opportunities for local and through traffic.

The intersection is also the western terminus of Link Transit's Route 22. The current configuration of the intersection requires transit operators to make a left-turn onto Icicle Road before pulling into the gas station on the southeast corner of the intersection and using the parking lot as the turnaround before continuing eastbound. Construction of a roundabout and relocating the transit stop from the parking lot to US 2 would improve transit service and efficiency at the west end of Leavenworth.

Safe & Complete

A roundabout configuration would reduce serious and fatal injury crash potential at the intersection by reducing speeds and limiting opportunities for severe collisions and fatal injury crash potential at

the intersection by reducing speeds and limiting opportunities for severe collisions.

Vibrant

The Icicle Road intersection marks the transition of US 2 from a mountainous highway to Leavenworth's "main street". Installation of a roundabout would reinforce this gateway, by slowing speeds paired with signage and landscaping that would serve as a way to alter driver expectations and behaviors from the nearly 65 mile stretch of US 2 across the Cascades. Moreover, landscaping features of a roundabout provide the opportunity to incorporate Bavarianthemed elements, reinforcing the unique identity of Leavenworth.

Realistic

This project is the lowest cost capital project and can be completed almost entirely within available right-of-way.

Supported

This project was not only added by the community as part of the engagement process, but also received over 60 "likes" on the online map.

→ Parking Management

Project Description:

This project builds on strategies identified as part of the Downtown Leavenworth Parking Management Plan and in some cases, identified for implementation in the near-term by the City of Leavenworth Parking Committee. Strategies maximize efficient use of the parking supply such that visitors can easily find parking, reducing congestion in Downtown that results from cruising for parking. These strategies would also and allow the City to flexibly manage parking during high demand events.

Strategy 1: Allocate remote parking for employees that work in Downtown. With

the recent transition of the WSDOT lot to City ownership, a portion of the available capacity in this lot would be allocated to employee parking. This lot is adjacent to the US 2/Mill Street transit stop, which would connect employees parking at this location to jobs in Downtown. Creating employee parking at this lot would also be supported by the TDM Strategies and Bike/ Scooter Share projects discussed in the following section and the US 2 Ski Hill to River Bend Streetscape Improvements project.

Strategy 2: Make other remote options available to employees. Any unused capacity at the existing Willkommen Village could also be utilized followed by the paid use of parking in private-lots for employees.

Strategy 3: Active management of on-street parking Downtown. Once employees have adequate options to park remotely and connect to jobs in Downtown, measures including paid on-street parking and time-restricted parking in Downtown should be deployed to ensure that employees utilize remote parking opportunities leaving spaces in Downtown available for visitors.

Strategy 4: Event-specific parking

management. With an active management plan for parking in place, the City would be able to transition use of the parking supply during large events. During events demanding large amounts of parking, the City could transition some of the parking available to employees with additional incentives available to employees to travel to Leavenworth by rideshare or public transit during events and festivals. This would allow the City to better accommodate and manage the parking required for festivals, without construction of additional remote parking facilities.

Implementation Considerations:

Strategies identified as part of this project would support the US 2 Ski Hill to River Bend Streetscape

Improvements Project, Transit-on- Shoulders, and Bike/Scooter Share Projects, and TDM strategies. These management strategies would ensure that Leavenworth's parking system has adequate capacity in strategic locations encouraging visitors to park and then leverage other mode choices to travel within Leavenworth.

As Link Transit continues to increase service on Route 22 over the next several years and continues the operation of the circulator shuttle to complete Route 22 within Leavenworth, the use of transit by employees participating in TDM programs will continue to increase and would be supported by the parking management strategies recommended as part of this study.

While many of the strategies identified as part of this study are also documented in the Downtown Parking Plan, recommendations in the study are strategies that would provide meaningful benefit to the US 2 corridor as a whole and support other projects identified by this study. The continued implementation of other strategies documented in the Downtown Parking Plan, not discussed in this plan, will continue to contribute to improving Leavenworth's transportation system.

Cost for this project would vary depending on implementation of management strategies.

Project Benefits:

This project would advance three of the Guiding Principles.

Vibrant

Turnover of parking in Downtown Leavenworth was measured to be below typical parking turnover rates when data was collected for the Downtown Parking Management Plan. The data indicated that parking spots in Leavenworth were turning over approximately half as often as the industry average. This was believed to be a result of employees using on-street parking in Downtown. By shifting employees to parking located outside of Downtown connected by

transit, parking in Downtown would be more frequently available to visitors near their destination. This would limit the need for people unfamiliar with Leavenworth to circulate through Downtown looking for parking, improving not only the parking system, but also reducing congestion in Downtown.

Today, management of parking within
Leavenworth for events and festivals requires
starting from scratch each time management
is needed and relies on parking lot owners to
actively manage their parking supply. By putting
management strategies in place, first focused
on the management of employee parking, those
systems can be leveraged to more efficiently
manage the supply during times of high demand.

These strategies paired with other identified projects would help to create a "park once" experience for visitors in Leavenworth. With the ability to transition remote parking to visitors and have transit and bike/scooter share options in place, visitors can park and easily navigate between destinations using other modes.

Realistic

Many of the management strategies identified as part of this project can be implemented without significant costs and within the near-term (less than five years).

Supported

Project stakeholders, PAC members, and community members have all expressed support for parking manage¬ment strategies as part of this study.

→ US 2 Express Bus Access at Peshastin

Project Description:

This project would relocate the Peshastin bus stop to the shoulders of US 2, significantly reducing travel time for Route 22 between Leavenworth and Wenatchee. To connect bicyclists and



pedestrians from Peshastin to the stops on US 2, this project would construct a bicycle and pedestrian bridge adjacent to the existing Main Street Bridge in Peshastin. Improvements to pedestrian facilities between the new bridge and School Street would be completed as part of this project, as would enhanced crosswalk markings connecting the bridge to the improved transit stop.

Implementation Considerations:

This project is estimated to cost between \$4M and \$5M and would result in a direct cost-savings for Link Transit. With an estimated savings of \$250,000 per year and a total capital cost of between \$4 and \$5 million, investment in this project would be recovered in approximately 15 years.

This project could apply for grants and other funding sources that could not be used for roadway capacity improvements.

Transit travel time savings and reliability resulting from this project benefit other high-performing

projects including: Parking Management, US 2 Ski Hill to River Bend Streetscape Improvements Enhancement. This project would also support several other projects including Employee Travel Demand Management and the Transiton-Shoulders project, making transit a more attractive option during congested conditions.

Project Benefits:

This project advances four of the Guiding Principles.

Reliable

To serve Peshastin, Route 22 must currently divert off US 2 over the Main Street bridge. This loop into Peshastin adds six minutes to the route travel time, resulting in higher costs to operate the route and less competitive travel times compared to driving. The additional six minutes is estimated to add \$250,000 in operating costs to Route 22 over the course of one year. By creating a connection and improved stop on US 2, this project would lower operating costs while improving travel time and reliability.

Safe & Complete

A parallel facility would serve both bicyclists and pedestrians of all-ages and abilities through the separation from vehicles crossing the Wenatchee River.

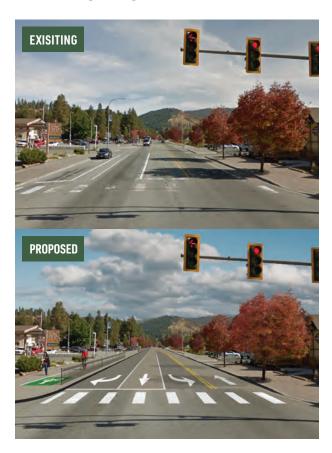
Vibrant

The narrow Main Street Bridge has an outdated design without opportunity for expansion to better serve non-motorized modes. By constructing a separate, parallel footbridge the project would accommodate bicyclists and pedestrians on a separate facility that would be accessible and comfortable for people of all ages and all abilities with a direct connection to transit.

Supported

Both Link Transit and commu¬nity members have expressed support for this project.

→ US 2 Ski Hill to River Bend Streetscape Improvements



Project Description:

This project would reconfigure US 2 in Leavenworth to provide a more complete and efficient facility for vehicles, transit, walking and bicycling. The improvements would enhance local accessibility for residents, prioritize the needs of emergency service vehicles, transit, and shuttles along the corridor and separate bicyclists and pedestrians from vehicles on US 2.

To improve mobility for local traffic using US 2 to access residential neighborhoods and Downtown Leavenworth, the existing westbound right-turn lane at Chumstick Highway, 9th Street, and Front Street would be extended. Only right-turning vehicles, transit, shuttles, and emergency services would be able to utilize the extended right-turn lanes. All signalized intersections along US 2

in Downtown Leavenworth would be modified such that, only transit, shuttles, and emergency services would be able to continue through the intersection in this lane, with all other drivers being forced to turn right.

As part of this project, a traffic signal would be added at Front Street and the existing signals would be upgraded to include signal preemption. Signal preemption would allow vehicles with the appropriate transponder (emergency services, transit, and shuttles) to preempt the regularly operating traffic signal to prioritize their movement through the intersection. To allow emergency services, transit, and shuttles to access the general purpose traffic lane ahead of the queue on US 2, the traffic signal would hold all through traffic on US 2 for approximately seven seconds to allow emergency services, transit, and shuttles in the right-turn lane to transition back into the general purpose lane.

Pedestrian improvements would include the addition of a visually appealing fence or landscaped buffer to provide separation between pedestrians and bicyclists and vehicles on US 2.This barrier would also discourage jaywalking across US 2 between intersections, reducing pedestrian crash potential and improving traffic flow on US 2.

Bicyclists on US 2 would be accommodated by a shared-use path between Chumstick Highway and Ski Hill Drive. The existing sidewalk on the north side of US 2 would be widened to accommodate both bicyclists and pedestrians. While bicyclists would transition to the shared-use path between Ski Hill Drive and Chumstick Highway, to the east and west of the improvements the existing on-street bicycle lane would be maintained. Crossings at Ski Hill Drive and Chumstick Highway would be restriped with additional markings, including green painted conflict areas, to connect bicyclists to the north side of US 2.

Implementation Considerations:

While this project would improve travel time for transit, shuttles, and emergency vehicles, there would be no benefit to travel time for drivers traveling through Leavenworth on US 2.

This project would maintain full access at all intersections along US 2; however, the extended right-turn pocket would eliminate the ability for eastbound traffic to turn left between intersections from Chumstick Highway to Front Street.

This project would also support the Bike/
Scooter Share, Transit-on-Shoulders, and Shuttle
Partnership projects. This project ensures that
transit and shuttles operating on US 2 have a
travel-time savings and can operate efficiently
within Leavenworth encouraging higher use of
the services, resulting in mode-shift for trips
to Leavenworth. The project also increases
comfortable space for bicyclists encouraging
them to park once and utilize bike share and
transit options to travel within Leavenworth.
The reliable connection between Leavenworth
destinations would also support parking
management strategies and make the "park once"
strategy achievable for Leavenworth visitors.

This project could be implemented in steps as funding is available. Improvements could be made one intersection at a time or with priority for the westbound direction, followed by the eastbound direction. Cost for this project would also vary based on implementation.

Project Benefits:

This project would advance four of the Guiding Principles.

Reliable

Signal priority paired with queue-jump at signalized intersections would improve travel time through Leavenworth for emergency services, transit, and shuttles. Travel time

improvement for shuttles and transit not only improves on-time operations, but also creates an incentive to use transit or shuttles to travel with Leavenworth. For emergency services, improved travel times translates into lower response times, meaning they can get to people in need in less time.

Safe & Complete

Today US 2 has on-street bicycle lanes through most of downtown and sidewalks on both sides. While confident cyclists use the on-street lanes, less confident cyclists tend to use the sidewalks, which vary in width and cannot always accommodate both bicyclists and pedestrians. With the addition of a shared-use path on the north side of US 2, this project would create a space designed to be shared by bicyclists and pedestrians. Paired with wayfinding and crossing improvements, the shared-use path would create an accessible route through downtown for both bicyclist and pedestrians.

Vibrant

The priority for transit and shuttles paired with complete bicycle and pedestrian facilities would create more options in how people travel between Willkommen Village and Icicle Road. Paired with a bike/scooter share program, discussed in the following section, visitors would have access to multiple options to travel within Leavenworth whether arriving by transit or shuttles or driving and parking off the corridor or remotely.

Supported

Identifying a way to better prioritize emergency services along US 2 through Leav¬enworth while continuing to accommodate vehicles, bicyclists, pedestrians, and transit was supported by the community and project stakeholders.

→ Chumstick Highway to River Bend Drive Connection



Project Description:

This project would create a new connection across the Wenatchee River connecting Chumstick Highway to River Bend Drive. This project would include construction of a new intersection with Chumstick Highway, a bridge across the Wenatchee River, and improvements to River Bend Drive from the new connection to US 2.

The new bridge would provide two general purpose travel lanes (one in each direction) to accommodate vehicles. Bicyclists would be accommodated in a side-running path shared with pedestrians on the north side of the bridge, while a sidewalk on the south side of the bridge would accommodate pedestrians.

To create the opportunity for transit to bypass US 2 during events (when US 2 is highly congested) and to facilitate better transit connections to residential neighborhoods, both the River Bend Drive intersection with US 2 and the Chumstick Highway intersection could be upgraded to include transit pre-emption. This technology could also be utilized by emergency services using this connection to access residential

neighborhoods in Leavenworth.

The Chumstick Highway to River Bend Drive connection is the only viable project evaluated as part of this study that would result in significant travel time savings on US 2 during typical summer weekends. Evaluation of this project under summer weekend conditions resulted in a travel time savings of four minutes in the eastbound direction on US 2 and three minutes in the westbound direction .These travel time savings are equivalent to a 40 percent reduction from existing summer weekend travel times on US 2. During peak festival times heavy congestion on US 2 would still be expected to occur as a result of the limited capacity on US 2 as it exits Leavenworth.

Implementation Considerations:

A new connection between Chumstick Highway and River Bend Drive including construction of a new bridge will require significant right-of-way acquisition and special environmental permits for work along the Wenatchee River. This project would also require reconfiguring several local roadways and access points including Chumstick Highway, Alpensee Strauss, Riverbend Drive and access to Safeway. Advancing this concept past the planning level will also require ongoing engagement and support from the greater Leavenworth community.

This bridge would be a local road owned and maintained by the City of Leavenworth, construction is estimated to cost between \$27M to \$37M.

Project Benefits:

This project would advance three of the Guiding Principles.

Reliable

Today, US 2 is the only route that crosses Wenatchee River within the Leavenworth city limits, with extensive out-of-direction travel required to reach alternate crossings. Bottlenecks

at both the Chumstick Highway and River Bend Driver intersections meter traffic on the bridge. While a new bridge would operate at a lower capacity than US 2, it would also reduce the bottleneck for traffic traveling on US 2 at both the Chumstick Highway and River Bend Drive, increasing the number of vehicles able to cross the existing bridge. Considering the removal of bottlenecks and additional capacity offered by a new bridge, this project would increase the number of vehicles that can cross the Wenatchee River more than 50 percent compared to the capacity that exists today.

Safe & Complete

While a new bridge would facilitate the movement of vehicles across the Wenatchee River, it would also serve as an important connection for bicyclists. The improvements already in place for bicyclists and pedestrians west of Chumstick Highway paired with dedicated facilities on the new bridge would create a parallel route to US 2 between River Bend Drive and Ski Hill Road through Leavenworth. The route would also provide a connection to the middle school and high school for students living on the east side of the Wenatchee River.

Vibrant

The new connection across the Wenatchee River would serve as a gateway to Leavenworth for residents, bicyclists, and pedestrians. With improved facilities for bicyclists and pedestrians crossing the river, this connection could also encourage a mode shift for local trips crossing the river.

→ Undercrossing at US 2 Park and Ride

Project Description:

This project would connect the residential neighborhoods north of US 2 to downtown Leavenworth and the Wenatchee River Waterfront by constructing a US 2 undercrossing near the

Leavenworth Park and Ride. The undercrossing would be accessible from both the Park and Ride lot and Sherbourne Street on the north and Division Street on the south, creating a more seamless connection across US 2 for bicyclists and pedestrians.

Leavenworth's Comprehensive Plan identifies US 2 as a barrier for biking and walking that separates the downtown area from the residential areas. All existing options for crossing US 2 near downtown expose bicyclists and pedestrians to conflicts with right-turning vehicles, except for the High-Intensity Activated Crosswalk (HAWK) beacon at City Hall, which is a mid-block crossing. The large number of pedestrian crossings that can occur in Downtown Leavenworth on a summer day or during events (over 3,000 pedestrians were counted on a Sunday in August at one crossing) create delay for vehicles along the US 2 corridor. Providing a grade separated crossing for and pedestrians creates fewer conflicts and more comfortable experience that reduces barriers to visiting the waterfront, encourages parking once in Downtown to visit multiple destinations, and improves operations at signalized intersections.

Implementation Considerations:

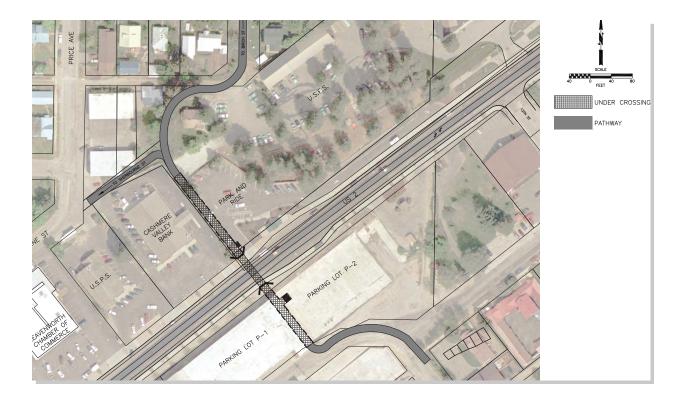
This project should be paired with enhanced modal separation on US 2, through use of planters or visually appealing fencing to encourage use of the undercrossing. Wayfinding signs will also be required to direct bicyclists and pedestrians on both sides of US 2 to the undercrossing.

Some right-of-way acquisition will be required to connect the undercrossing to neighborhood streets facilitating a connection for residents.

This project is estimated to cost between \$3.5M and \$4.5M.

Project Benefits:

This project advances four of the Guiding Principles.



Reliable

The large number of pedestrian crossings that can occur on a summer weekend or during events reduce the efficiency of signalized intersections and add de-lay to the US 2 corridor. Providing a grade-separated crossing of US 2 would reduce this conflict, improving the efficiency and reliability of the corridor. Similarly, a grade separated crossing would make parking once in downtown and traveling between destinations more feasible, reducing the number of vehicles in downtown cruising in search of a parking space.

Safe & Complete

The separation of pedestrians and bicyclists crossing US 2 would not only reduce potential conflicts with vehicles, but also create a more comfortable biking and walking experience.

Supported

The community and stakeholders have supported project ideas that lower the number of pedestrians crossing US 2 during summer

weekends and festivals.

Vibrant

Encourages residents to walk or bike to the downtown or the waterfront area by eliminating the need to cross US 2, which is identified as a barrier separating downtown Leavenworth and the waterfront from resi¬dential neighborhoods. The ability to "park once" also makes downtown a more accessible destination.

→ Segment 1 – Coles Corner to Leavenworth

The projects summarized in this section would improve the stretch of US 2 between Coles Corner and Leavenworth's city limits.



Signage & Wayfinding for Designated Parking Areas

Project Description: Add signage along US 2 between Coles Corner and Leavenworth to inform drivers of designated parking areas. Parking areas could include recreational areas, existing pull-outs with capacity to accommodate parking, or improved pull-outs. Signs informing drivers of designated parking areas could eliminate parking on the shoulder throughout the Tumwater Canyon.

Implementation Considerations: Wayfinding signs should direct drivers to parking areas near desired recreational areas or vistas to ensure use of parking. The capacity to accommodate parking in existing pull-outs or recreational areas will need to be considered to avoid directing visitors

to areas that cannot accommodate parking. Each parking area should also include signage with the distance to the next available parking location if demand exceeds capacity. Warning signs indicating potential pedestrian crossings should also be constructed on US 2 in advance of parking areas.

Benefits: Currently, people accessing trailheads, the Wenatchee River, or vistas throughout the Tumwater Canyon park on shoulders and in areas not designated for parking. This not only creates safety concerns for drivers on US 2 as the roadway varies in width throughout the canyon, but also results in pedestrians crossing US 2 with no warning to drivers. Consolidation of parking would allow for better signage for potential pedestrian crossing sings. Parking through the Tumwater Canyon can also cause issues for roadway maintenance when parked cars block access to areas requiring maintenance.

Upgrade Existing Pullouts

Project Description: This project would expand existing pullouts to provide additional space for cars to park. In addition to space for more parking, upgrades would include signage alerting drivers of available parking and striping to ensure efficient use of the space.

Implementation Considerations: The location of upgraded pullouts should be selected based on proximity to recreational areas or vistas.

Sight distance near the pullouts should also be considered when selecting locations to upgrade, so that vehicles driving on US 2 can see vehicles turning into and out of the pullouts.

Benefits: Upgrading existing pullouts would be less costly than creating new pullouts or parking areas in Tumwater Canyon. This would also create more parking opportunities for vehicles accessing areas within the canyon, eliminating the safety and maintenance concerns associated with vehicles parked along US 2.

Modify Edge Lines to Increase Shoulder Size

Project Description: The only available space for bicyclists in Tumwater Canyon is the shoulders of US 2, which vary in width throughout the Canyon. This project would restripe the white edge line on the outside of US 2 in both directions to provide additional space for bicyclists on the shoulder and reduce travel lane widths.

Implementation Considerations: Roadway striping must conform with standards documented in the Manual on Uniform Traffic Control Devices (MUTCD).

Benefits: Moving the edge line to narrow the driving lane would provide additional space on the shoulders, lowering bicyclists stress through Tumwater Canyon.

No Parking Signs

Project Description: The addition of "No Parking" signs throughout Tumwater Canyon.

Implementation Considerations: No parking areas should be located where parking creates safety concerns for operations on US 2, requires pedestrians to cross in areas without adequate sight-distance, or creates access issues for maintenance or emergency responders. As there is a strong demand for parking within US 2, no parking areas should not be located near desired recreational areas or vistas. Prohibiting parking near desired areas could result in people parking farther away and walking on or near US 2 creating a safety concern.

Benefits: Without "No Parking" signs in locations where parking creates the potential for increased crashes on US 2, there is no way to control or regulate parking without temporary signs. With signs in place, violations are enforceable, discouraging illegal parking in areas identified as having roadway characteristic that could lead to increased crash potential with parking or where access is critical in the event of an emergency.

No Pedestrian Crossing Signs

Project Description: This project would recommend "No Pedestrian Crossing" signs be added on US 2 in areas where pedestrian crossings conditions, such as speed, intersection complexity, or geometry create conditions that increase pedestrian crash potential beyond acceptable levels.

Implementation Considerations: Locations identified for "No Pedestrian Crossing" signs should be areas with a high demand for pedestrian crossing that also include design or operational characteristics that an engineering assessment deem beyond acceptable levels, such as high-speed limited stopping sight distance. Signage should also denote where pedestrians may cross.

Benefits: This project would prohibit pedestrians from crossing in identified areas that have higher crash potential and allow for enforcement of no crossing signs, lowering the likelihood that dangerous pedestrian crossings will continue to occur.

High Friction Surface Treatments (also identified for Segment 3 and 4)

Project Description: This project would apply pavement treatments to areas along US 2 where pavement friction is reduced due to wet or icy surface conditions or the speed and geometry of the roadway. The pavement treatment would include application of a high-quality aggregate, which would increase pavement friction.

Implementation Considerations: To determine locations where this treatment would lower friction related crash potential, a detailed review of the most recent crash data long US 2 would need to occur. This evaluation would consider pavement condition and wet weather related crashes or other contributing factors that benefit from increased friction would take place.



Benefits: The application of high friction surface treatment would lower friction related crash potential reducing the number of crashes occurring on US 2.

Variable Speed Area

Project Description: Installation of electronic speed limit signs throughout Tumwater Canyon that would allow speed limits to be adjusted based on roadway conditions. Speed limit adjustments would be made during inclement weather, high-congestion, or peak recreational times when parking and pedestrian activity in the canyon where crash potential would be lowered based on reduced speed.

Implementation Considerations: Operation of a variable speed area would require the installation of sensors in the roadway to gather information on traffic speed, volume, and weather conditions. Implementation would also require a traffic operations center to interpret data and adjust speeds accordingly. Coordination with law enforcement agencies would also be required so that enforcement officers are aware of current speed limits.

Benefits: Conditions on US 2 within Tumwater Canyon can change significantly as a result of weather conditions. This project would allow for the changing of speed limits to slow drivers down as conditions degrade in the canyon. Speed limits could also be lowered when congestion on US 2 increases, or during peak recreational times, when visitors parking and crossing US 2 causes safety concerns within the canyon.

Increase Shoulder Widths to Accommodate Bicyclists

Project Description: This project would widen the shoulders on US 2 between Coles Corner

and Leavenworth to provide additional space for bicyclists.

Implementation Considerations: Shoulder treatments such as edge-line rumble strips should also be considered if adequate space is available to alert drivers that they are departing from the travel lane and potentially encroaching on space allocated for bicyclists.

Potential Benefits: Widened shoulders would provide additional space to separate bicyclists from vehicles in Tumwater Canyon, which is a mountainous highway.

Roundabout at US 2 and SR 207

Project Description: A single-lane roundabout could replace the existing two-way stopcontrolled intersection at the junction of US 2 and SR 207 in Coles Corner.

Implementation Considerations: The footprint of a roundabout at this intersection would likely exceed the footprint of the current intersection requiring right-of-way acquisition.

Potential Benefits: The roundabout would increase the predictability of traffic flow and reduce traffic conflicts at the intersection by by increasing sight distance and createing delineation for vehicles and pedestrians. Over the past five years, there have been seven vehicle collisions at the intersection, caused by drivers not giving proper right-of-way, driver inattention, speeding, or the influence of drugs or alcohol. Roundabouts have been found to reduce injury crashes by 75% at intersections where stop signs or signals were previously used for traffic control³.

April 2020 51

³Insurance Institute for Highway Safety, sourced by WSDOT: https://www.wsdot.wa.gov/Safety/roundabouts/benefits.htm

→ Segment 2 - Leavenworth

Projects summarized below include management strategies and improvements that would encourage users to chose transit or active transportation modes, creating the opportunity to reduce congestion on US 2 within the City of Leavenworth.





Figure 4: Eastern Sierra Transit shuttle service. Source: PCT, 2019

Potential Benefits: Increasing transit shuttle service frequency in the region would give visitors more options for where to stay and how to travel into Leavenworth. Shifting transportation modes to transit would alleviate traffic congestion, particularly around summer weekends and events. Reducing motorized vehicle travel also has a relationship to reduced crash potential.

Transit Shuttle Service

Project Description: This project could be paired with improvements on US 2 to provide travel time benefit for shuttles and parking management strategies encouraging parking outside the downtown core.

Implementation Considerations: This project would require collaboration with shuttle operators in the region, which could include multiple small entities. Creation of this program, establishing rules for how these shuttles operate and where they can drop off/pick up, and promoting this program with operators would require action by the City.

Parking App

Project Description: As the City of Leavenworth transitions its on-street parking to a time limited and/or a paid parking environment as well as a more active approach to parking management, a parking application would benefit all users of the parking system. There are numerous parking applications from which to choose from; the app should be tied to meter rates (if applicable), offstreet rates, locations, and real-time occupancy information (if possible) to allow users to determine which parking option is desired.

Implementation Considerations: To reinforce brand awareness, the parking application should display the City of Leavenworth's wayfinding signage brand, so that drivers can quickly recognize and navigate the parking options as they drive to their desired parking stall. Coordination with parking meter technology and occupancy technology (if applicable) should be integrated with the parking application. Additionally, transportation options connections (Link Transit, bicycle, pedestrian) should be clear so that a parking once option is available. Therefore, pairing this project with the identified parking meter technology will facilitate a more efficient parking system - both Downtown and at park and ride locations.

Potential Benefits: This project would allow residents, employees and visitors to know their parking options before reaching Leavenworth along US 2. The benefits of allowing users to predetermine their parking options are multiple; less congestion as drivers look for available parking; a more efficient parking system; fewer conflicts between vehicular, bicyclists, and pedestrian road users. Pairing this project with a strong marketing/public relations effort in and outside of Leavenworth would educate not only the locals, but the influx of visitors who travel along US 2.



Figure 5: Parking App Example. Source: Pinterest, 2020.

Bicycle Parking

Project Description: This project would expand the bike parking network in the City of Leavenworth. The bike parking could be designed to be covered for all weather, corrals in high bike traffic locations, or artful and creative. Given Leavenworth's Bavarian character, embracing bicycle parking as art would be a fitting step. The city could increase installations over time, with opportunities for public involvement by having the public vote on new bike parking installations.

Implementation Considerations: Locations for sidewalk bike parking should be identified near business and in high amenity pedestrian areas. Bike corrals could be located on-street (in a parking space) and in plazas adjacent to high-traffic business areas. Park & Ride lots, transit stops, and the train station are all great locations to add bike parking. Coordination with the City of Leavenworth, Link Transit and downtown businesses is key to identify the best locations for bike parking.

Potential Benefits: Providing bicycle parking encourages bicycle travel to businesses and expands the capacity of the overall parking supply. Bicycle racks are a visible indicator of a bike-friendly community, and can be artful and creative. Bike parking would support future efforts to expand the bicycle and trail network in City of Leavenworth and along US 2.

Transit/Emergency Signal Preemption

Project Description: This project would install transponders on signalized intersections on US 2 (River Bend Drive, Chumstick Highway, and 9th Street) that would allow emergency responders and transit to preempt the traffic signal. By preempting the regularly operating traffic signal, first responders and transit would have a green light in the direction they are traveling allowing them to progress through the intersection without stopping.



Source: Pinterest, 2019

<u>Considerations</u>: Coordination between WSDOT, emergency services and the transit agencies will be required so that that the technology installed can be utilized by all groups. Installation of signal preemption would also support other projects, including the US 2 Ski Hill to River Bend Streetscape Improvements and Transit-on-Shoulders projects.

Potential Benefits: Signal preemption decreases response times for first responders, while also improving the safety at intersections. By prioritizing travel in the direction of travel for emergency responders and stopping conflicting traffic, emergency vehicles can proceed through the intersection without potential conflicts from other vehicles attempting to enter the intersection.

Signal preemption would also allow transit to operate more efficiently along the corridor. This would improve on-time operations, which paired with prioritized movement along the corridor could encourage mode-shift to transit reducing parking demand within Leavenworth and congestion on US 2.

Employee Transportation Demand Management Strategies

Project Description: There are a wide range of Transportation Demand Management (TDM) strategies to encourage methods of getting to work other than through driving alone. These strategies include incentivizing carpooling, transit, walking and biking. TDM strategies that could be applied for employees in Leavenworth include:

- » Public transit and private shuttle improvements through increased service.
- » Integrating park & rides, pedestrian and cycling seamlessly with transit.
- » Bicycle infrastructure improvements and secure bicycle parking at destinations.
- » Mobility hubs, including micro-mobility options such as bike share, scooter share and electric vehicles.
- » Implementing paid parking, permit parking, and/or time limit parking in downtown Leavenworth.
- » Offering incentives for carpooling to work, such as free parking (when paired with paid and permit parking).
- » Commuter financial incentives such as parking cash out or free transit passes to employees.

Implementation Considerations: To implement a successful TDM program, clarifying the goals and objectives for the program will help to identify the most appropriate TDM strategies to consider. Coordination between local employers, Link Transit, and the City is also critical in implementation of a successful TDM program.

Potential Benefits: Employee TDM strategies help to reduce congestion and are a lower cost alternative to expanding roads and parking facilities. Reducing traffic also lowers potential for crashes.



Figure 6: Downtown Leavenworth. Source: VRBO, 2019

Delivery Hours/Permits

Project Description: Currently, deliveries for some businesses along US 2 in Leavenworth occur in the two-way left-turn lane in the existing US 2 right-of-way. One of the projects for evaluation is repurposing the right-of-way along US 2, which would remove the existing two-way left-turn lane. Instead, an on-street parking permit program would allow deliveries to occur on designated areas along the curb on local streets. Signage in these areas would state "30 Minute Commercial or Permit Vehicle Load Only." Only commercial vehicles may load/unload for up to 30 minutes, and payment or a valid permit is required to use the space.

Implementation Considerations: The location of these zones needs to be carefully considered through consultation with local businesses. Impact to on-street parking and the use of curb space must also be considered as part of the implementation of this project.

Potential Benefits: This project would allow deliveries to continue in convenient locations for businesses along US 2 after the two-way left-turn lane is removed. The cost of a permit parking program would depend upon several factors, including administration and enforcement costs. However, costs could be partially or wholly recouped through permit fees.

Bike Share/Scooter Share Program

Project Description: This project would create a bike or scooter share program with a focus on connecting key destinations within the City of Leavenworth. Both bike and scooter share could serve as a last-mile connection for visitors arriving in Leavenworth on transit or shuttles, or to connect visitors with parking outside of the Downtown core or off the US 2 corridor.

Implementation Considerations: Both bike and scooter share programs can be owned and operated by a local agency or operated by a private company permitted by the City. With the amount of coordination, infrastructure, and maintenance required, it is likely that a program operated by a private company would be the best option for Leavenworth.

While the program may be operated by a private company, the City must still set policy related to station types (dock less or docked systems), station locations, parking zones, monitoring and enforcement, and system operations.

Year-round operations should also be considered. While Leavenworth is a bike-friendly community

and easily traversed by a bike or scooter, visitors traveling to Leavenworth during the winter months may be less likely to utilize the program, resulting in program infrastructure being unused during winter months.

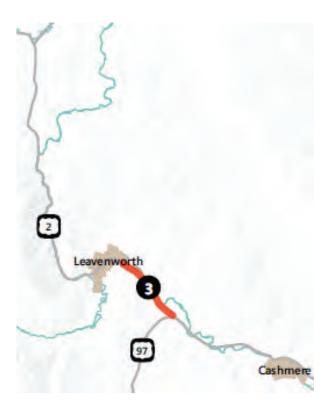
Potential Benefits: An option to use bike or scooter share system would allow visitors to travel between key destinations in Leavenworth with a five to ten minute ride and would pair well with other corridor investments, including enhanced shuttle and/or transit service and enhanced multimodal facilities along the US 2 corridor.



Figure 7: Example of a commercial permit sign. Source:(SDOT, 2015).

→ Segment 3 - Leavenworth to SR 97

The projects summarized in this section would improve the stretch of US 2 between Coles Corner and Leavenworth's city limits.



Transit-on-Shoulders

Project Description: This project would widen US 2 between SR 97 and Leavenworth to accommodate transit operating on the shoulders in the westbound direction. An additional six feet would be added to the shoulders to create the 12-foot lane needed to accommodate buses. During congested conditions on US 2, buses, shuttles, and emergency services could operate on the shoulder reducing travel time and increasing reliability.

Implementation Considerations: Widening of this segment of US 2 would require right-of-way acquisition, rock blasting and widening of two bridges. This project could be implemented in phases to support other projects including Parking Management and the US 2 Ski Hill to River

Bend Streetscape Improvements project.

Potential Benefits: It is estimated that a bus, operating at the maximum speed limit allowed for transit operating on the shoulders (35 miles per hour), would save eight minutes of travel time between the SR 97 interchange with US 2 under congested conditions. With a savings of eight minutes, transit reliability (a barrier to event/seasonal transit usage) would be improved making transit a more attractive travel choice.

During high-congestion periods on US 2 when queues can extend to SR 97, emergency services struggle to navigate the portion of the corridor between SR 97 and Leavenworth, which greatly increases emergency response times. With this project in place, emergency services would have priority for operating on the shoulder, resulting in improved response times.

Bus Stop Snow Removal

Project Description: This programmatic improvement would add Link Transit stops to the list of locations identified for snow removal. Snow removal would include the roadway and pedestrian facilities adjacent to stops so that that bus service is not interrupted during winter storms.

Implementation Considerations: Coordination between Link Transit and the agencies currently responsible for snow removal in the area would be required to identify high priority stops, and responsibility of cost for additional snow removal efforts.

Potential Benefits: Snow removal at transit stops would allow transit service to continue during winter months. When snow removal does not occur or the storage of snow makes stops inaccessible, transit service can be disrupted for long periods during the winter months. The ability to operate more reliably would help maintain ridership and create more robust travel options during winter events (the Tree Lighting Festival).

Bicycle Shoulder Treatments (Also Identified for Segment 4)

Project Description: This project would add edge-line rumble strips on US 2 between Leavenworth and Cashmere. Edge-line rumble strips would overlap with edge line of the travel lane to provide the most space possible for bicyclists without forcing them to navigate the rumble strips.

Implementation Considerations: It is recommended that there be at least four feet between the edge of rumble strips and edge of the shoulder, which is the area of the roadway occupied by cyclists. There may be some areas along US 2 between Leavenworth and SR 97 where the shoulder is not wide enough to accommodate four feet. In those areas a smaller rumble strip should be considered.

Rumble strips can be designed for bicyclists, but often bicyclists voice concern. To navigate public outreach to bicyclists within the community, a public awareness campaign should accompany further investigation or implementation of this project.

This project would conflict with the Transit-on-Shoulders between SR 97 and Leavenworth, discussed above. That project would proposed to improve the westbound shoulders to allow transit to operate on the shoulders during periods of heavy congestion. When that project is implemented, wayfinding signs directing bicyclists off of US 2 in the westbound direction before SR 97 should be considered.

Potential Benefits: Edge-line rumble strips would alert drivers with noise and vibration when they are departing from the travel lane. As bicyclists on US 2 must use the shoulders in Segment 3 and 4, this warning for drivers would lower the potential for vehicles to drift into the space being occupied by bicyclists.

Maximize LINK Bus Route 22 Efficiency

Project Description: The replacement of the existing deficient 85-year-old West Cashmere Bridge is currently under contract and scheduled for construction in 2020 and 2021. The new bridge will be constructed in approximately the same location as the existing bridge and will include an all abilities connection for pedestrians. The new structure will remove the height and weight restrictions needed for the current bridge, including allowing for transit to use the new bridge. In addition to the bridge replacement, there are opportunities to improve transit route efficiency to serve west Cashmere and add a Park and Ride on the north side of the Wenatchee River.

Implementation Considerations: This project is tied to the completion of the West Cashmere Bridge replacement, for which construction is expected to begin in spring 2020 and end in fall 2021. The project requires coordination with WSDOT, Chelan County, Link Transit, Chelan Douglas Transportation Council and the City of Cashmere.

Potential Benefits: The project would increase transit ridership, allowing visitors and commuters traveling to Leavenworth to park in the Park & Ride, and alleviate parking capacity concerns in the City during busy summer weekends and events. To encourage transit use, this project pairs best with reallocating right-of-way to allow transit on shoulders between Cashmere and Leavenworth.

Provide Parallel Facilities for All Modes (Also applies to Segment 4)

Project Description: This project would identify a parallel trail corridor parallel to US 2, from Chumstick Highway to Peshastin. This trail would serve as an alternative route for pedestrians and bicyclists instead of US 2. Installing a parallel trail would provide vulnerable road users separation from motor vehicles and provide comfort for travelers of all modes.

Implementation Considerations: This would require multiple jurisdictions to work together, including Chelan County and local municipalities. Moreover, road crossings will need to be carefully designed for each of the respective road users. If there is enough right-of-way around the railroad southeast of North Road, one consideration could be a more direct and level bicycle and pedestrian trail along the existing railroad alignment.

Potential Benefits: Currently, US 2 does not accommodate walking and biking due to vehicles speeds and right-of-way constraints. Designing a trail parallel to US 2 would remove vehicle and vulnerable road user and increase the comfort of walking and cycling, meeting the current demands for people visiting the corridor.

Spot Treatments at Local Access Driveways

Project Description: This project would identify spot treatments at local access points along US 2 with a high collision density. Improvements could include: dedicated lanes for vehicles turning into or out of driveways, allowing only right-turn movements at driveways where sight distance on US 2 is a concern, advanced signage warning drivers of upcoming local access points, lower speed limits, and acceleration lanes for vehicles merging onto US 2.

Implementation Considerations: Additional data collection should be completed to understand the number of vehicles turning into and out of driveways along US 2 to identify the appropriate improvements.

Also, widening to accommodate dedicated lanes for vehicles turning into driveways could eliminate space for the Transit-on-Shoulders project. Widening could also narrow shoulders making it harder for cyclists to use the shoulders and creating potential conflicts with turning vehicles.

Potential Benefits: Crashes occurring between Leavenworth and SR 97 increases in areas where

local businesses have driveways with direct access to US 2. Improving access at business driveways through additional signage, dedicated storage space for vehicles turning into the driveways from US 2 and acceleration lanes for vehicles merging onto to US 2 could reduce crash potential on this portion of US 2.

→ Segment 4 – SR 97 to Hay Canyon Road

Projects identified for this segment would improve accommodation for bicyclists on US 2 and reduce crash potential on US 2. Improvements identified for Segment 4 include:

- High Friction Surface Treatments
- Bicycle Shoulder Treatments
- Provide Parallel Facilities for All Modes

The projects identified for this segment, were also identified as improvements for both Segment 1 and Segment 3, project descriptions, benefits, and implementation considerations can be found in the prior sections.



Appendices

A. Existing Planning & Context Memorandum

Sebruary 2020 Appendix

US 2 Upper Wenatchee Valley Planning Context Memorandum

Prepared for: Chelan-Douglas Transportation Council

Revised January 2020

SE18-0649

FEHR PEERS

This page intentionally left blank.

Table of Contents

	1
Overall Process	1
Timeline	2
Vision & Guiding Principles	3
Corridor Vision	3
Overall Project Guiding Principles	3
Corridor Segments	4
1. Corridor Profiles	6
Introduction	6
Existing Plans & Studies	6
Planning Context Topic Areas	9
Corridor Data	10
Land Use Data	10
Bicycle & Pedestrian Data	10
Transit Data	
Transit Data	12
Vehicle Operations Data	13
Safety/Collision Data	14
Northwest Segment: Coles Corner to Icicle Road	
Land Use	16
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
Pedestrian/Bike Facilities	16
Transit Service	16
Vehicle Operations	17

Safety/Collision Data	
Northwest Segment Key Findings	
Leavenworth Segment: from Icicle Road to Leavenworth City Limits	20
Land Use	20
Pedestrian/Bike Facilities	21
Transit Service	21
Transit Service	21
Vehicle Operations	22
Safety/Collision Data	
Leavenworth Segment Key Findings	
Peshastin Segment: Leavenworth City Limits to US 97	26
Land Use	26
Pedestrian/Bike Facilities	26
Transit Service	26
THATISIC SCIVICE	20
Vehicle Operations	27
	20
Safety/Collision Data	
Southeast Segment Key Findings	
Southeast Segment: US 97 to Cashmere	31
Land Use	31

Pedestrian/Bike Facilities	31
Transit Service	32
Vehicle Operations	33
Safety/Collision Data	33
Southeast Segment Key Findings	
Figure 1: Project Advisory Committee February 2019 Meeting	3
Figure 1: Project Advisory Committee February 2019 Meeting	3
Figure 2: Study Segments	5
Figure 3: Wenatchee Valley Bike Map, Chelan-Douglas Transportation Council	1
Figure 4: Existing Transit Service	12
Figure 5: Average Daily Boardings for Route 22	13
Figure 6: Collision density along the US 2 corridor	15
Figure 7: Collected on US 2 at milepost 80.20, west of Coles Corner	17
Figure 8: Collision density along the northwest segment	18
Figure 9: City of Leavenworth and Regional Zoning	20
Figure 10: Existing transit in Leavenworth	22
Figure 11: Collision density along the Leavenworth segment	23
Figure 12: Collisions in the City of Leavenworth	24
Figure 13: Existing Transit Peshastin Segment	
Figure 14: Collected on US 2 at milepost 103.92, Peshastin	
The Condition of Co. 2 at innepost 100.02, I condition	27
Figure 15: Collision density along the southeast segment	27
	2°

This page intentionally left blank.

Introduction

As one of two major routes over the Cascades, US 2 serves as a route for travel to and from desirable locations across the state. Within the Upper Wenatchee Valley, US 2 also serves as a vital regional and local connection for the communities of Leavenworth, Dryden, Peshastin, Cashmere, and Wenatchee. Tourist travel in the area is driven by not only by outdoor recreation, especially in the summer months, but also by festivals hosted within the City of Leavenworth, including Oktoberfest and the Christmas Lighting Festival.

Throughout the study area (from Coles Corner to Hay Canyon Road), the US 2 corridor is constrained by geography, limiting options for capacity improvements. The goal of this project is to identify solutions that can be leveraged to serve all transportation modes along the corridor, and to manage expectations associated with festivals and seasonal travel.

Overall Process

The US 2 Upper Wenatchee Valley Corridor Transportation Study began in late 2018. WSDOT's Practical Solutions approach was applied during development of this study to ensure that projects identified throughout the course of this study are not only realistic, but also vetted by the community.

This process includes one-on-one stakeholder discussions, community workshops, a project website, and a Project Advisory Committee (PAC). The PAC is comprised of the following agencies and groups:

- WSDOT
- Chelan County
- Chelan-Douglas Transportation Council
- City of Leavenworth
- Link Transit
- Leavenworth Planning Commission
- Leavenworth Chamber of Commerce
- Chelan County Sheriff
- Chelan County Fire District #3
- Friends of Leavenworth
- Local Growers



Timeline

The following timeline shows the schedule for completing the US 2 Upper Wenatchee Valley Corridor Transportation Study. The study began in late 2018 and a final report is expected by April 2020.

Vision & Guiding Principles

To guide this process, including the selection and evaluation of preferred corridor improvements, the Project Team began by establishing a vision for the corridor and set of guiding principles based on input from the PAC.

Corridor Vision

This project establishes a future vision for the US 2 Upper Wenatchee Valley Corridor that:

- Provides reliable transportation options for all means of travel;
- Accommodates emergency access, local trips, US 2 highway travelers into and out of the area, and freight movement;
- Enhances the region's unique identity.



Figure 1: Project Advisory Committee February 2019 Meeting

Overall Project Guiding Principles

The following guiding principles were established for evaluating potential solutions along the US 2 Upper Wenatchee Valley Corridor. Improvements must advance the creation of a corridor that is:

- Reliable. Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.
- **Safe & Complete:** The corridor offers complete, multimodal infrastructure where appropriate to meet users' needs and enhance corridor safety.
- **Vibrant.** Study recommendations support Leavenworth's tourism industry and growing seasonal usage of the corridor.
- Realistic. Study recommendations are practical, fundable and implementable
 within a reasonable timeframe and include creative solutions to better manage
 traffic impacts from seasonal and special event travel.



• **Supported.** Stakeholders and the community will be engaged to identify mutually beneficial solutions.

Corridor Segments

The study area is divided into four separate segments based on the roadway characteristics and the land use context in each area. The four corridors, shown on **Figure 3**, are:

- 1. Northwest: from Coles Corner to Icicle Road
- 2. Leavenworth: from Icicle Road to the Leavenworth city limits
- 3. Peshastin: from Leavenworth to US 97
- 4. Southeast: from US 97 to Hay Canyon Road

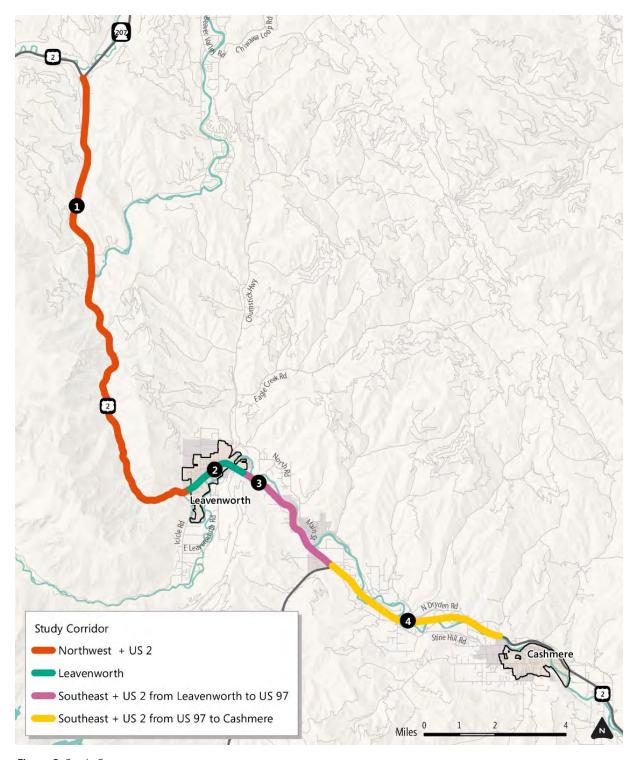


Figure 2: Study Segments



1. Corridor Profiles

Introduction

While US 2 is a major highway that traverses the Cascades connecting Eastern and Western Washington, it also operates as the "main street" through the City of Leavenworth.

This dual purpose as both a major highway and local main street, creates the need to serve both regional and local trips. While local residents rely on the corridor for daily errands and to commute to and from work, it must also accommodate regional auto and freight trips passing through the Upper Wenatchee Valley, as well as recreational travel by all modes.

The corridor has several unique travel characteristics, including:

- Peak usage occurring during the summer and on weekends.
- Constrained geography that limits options for parallel routes.
- Festival events, which tax corridor capacity both within and east of Leavenworth.
- A high demand by all modes given the mix of facilities within area.

As part of the first phase of this effort, existing plans, studies, and data collected along the corridor were reviewed and documented to inform subsequent phases. Plans, studies, and data gathered are summarized below.

Existing Plans & Studies

The four plans and studies reviewed include the Chelan County Transportation Element, the Leavenworth Comprehensive Plan, Leavenworth Six-Year Transportation Improvement Plan (TIP), and the Leavenworth Downtown Strategic Parking Management Plan. The sections of the plans relevant to the US 2 corridor are summarized below.

Chelan County Transportation Element

Chelan County completed their most recent Transportation Element in 2017, aiming to provide a 20-year vision for the County's transportation system. Since the study area is entirely within Chelan County, the project list was investigated for planned projects relevant to the US 2 corridor.

The plan defined a daily auto Level of Service (LOS) C requirement for rural roads and LOS D requirement for roadways in urban growth areas. Some near-term vehicle capacity projects that are on the 20-year project list include:



- Chumstick Highway and North Road intersection reconstruction;
- North Road reconstruction, improving safety, signage and horizontal curves between Fox Road and Nibblelink Road; and,
- Icicle Road safety improvements.
- Replacement of the West Cashmere Bridge, expected to be completed by Chelan County in 2021.

The Plan also includes the following long-range WSDOT "vision" project, for which no funding is yet identified: a bicycle and pedestrian trail that extends from Leavenworth to Peshastin providing access along US 2. Moreover, the plan references Link Transit's long-range plan examining future transit needs and resources, which is currently under development.

Leavenworth Comprehensive Plan

The City of Leavenworth's Comprehensive Plan (2017) represents the community's multimodal transportation plan for growth over the next twenty years.

Vehicles

The Comprehensive Plan designates a LOS of D for vehicles along US 2 and within the City and Urban Growth Areas (UGA), during the weekday AM and PM peak hours. Within the City of Leavenworth, intersections along US 2 are anticipated to become heavily congested if no improvements are implemented. US 2 intersections expected to operate poorly include:

- East Leavenworth Road
- Chumstick Highway
- Ski Hill Drive
- Mill Street
- Icicle Road

The plan identifies potential corridor enhancements along US 2 by partnering with WSDOT for adding turn lanes, improving sight distance and mid-block crosswalks, implementing access management, and adding traffic control, such as roundabouts at the East Leavenworth Road and Chumstick Highway intersections. Adaptive signal management and Intelligent Transportation Systems (ITS) improvements along the US 2 corridor within the City is also identified as a potential improvement along US 2.

Non-Motorized Users

The Comprehensive Plan identifies US 2 as a barrier to pedestrians as it separates the downtown commercial district from the residential area to the north. Therefore, the plan identifies pedestrian safety improvements along this corridor as vital. Crosswalk improvements are proposed at the Link Transit Station, City Hall and the City Municipal



Pool. The Comprehensive Plan also includes a grade separated pedestrian undercrossing near City Hall, and investigates the neighborhood impacts of routing US 2 away from the congested business center. At the regional level, the Upper Valley Trail is identified as an opportunity to connect non-motorized users from the City of Leavenworth to Wenatchee through Peshastin, Cashmere and Monitor.

Transit

Leavenworth has a vision to better serve commuters and visitors by transit. This includes an expanded Link Transit commuter and weekend service between Leavenworth and Wenatchee. To improve access, the City plans to construct an additional Park & Ride and bus stops in Leavenworth, as well as improve the Amtrak Icicle Station with a trail connecting Leavenworth to the station.

Leavenworth 6-Year Transportation Improvement Plan

Leavenworth adopted its most recent six-year TIP in 2018. This plan identifies projects that could be funded over this period. Along the US 2 corridor, the following projects are included:

- Relocate and improve the US 2 crosswalk at Front Street by Leavenworth Municipal Pool, including an upgrade to High-Intensity Activated Crosswalk (HAWK) beacon and illumination.
- Relocate and improve the US 2 crosswalk at City Hall, including a conversion from solar power to standard power, an upgrade to HAWK and illumination.
- Implement parking improvements based on outcome of 2018 Leavenworth Parking Study.
- Construct the Link Transit Park & Ride at Willkommen Village.
- Improve multimodal access and safety along US 2.
- Improve the North Road and Chumstick Highway intersection.

Leavenworth Downtown Strategic Parking Management Plan

The City of Leavenworth conducted a parking study in 2018 to respond to the City's unique environment, goals and objectives.

For the downtown area, the study found that the average length of stay for parked vehicles is less than three hours, despite 98% of stalls being designated as no limit parking. On Saturdays, the City has an off-street occupancy rate of over 90% and an onstreet parking occupancy rate of over 85% from 11:30 AM to 7:30 PM. Recommendations for the downtown area include, an 85% occupancy rule for measuring performance of parking supply, converting parking to a 3-hour timed stall and evaluating a process for paid on-street parking.

Looking at areas outside of downtown, the study found that privately owned off-street parking lots are typically empty on both weekdays and weekends, and recommended coupling these with a shuttle for visitors and employees. For neighborhoods impacted by parking overflow, the study recommended implementing a Residential Parking Permit Zone.

Finally, the plan identified one solution for increasing parking capacity citywide and one solution for reducing parking demand citywide. The recommendation for increasing capacity was the addition of a parking garage within the City, while increasing transit to Leavenworth was identified as a solution to reduce parking demand.

Planning Context Topic Areas

As described earlier, this report focuses on the study corridor from Coles Corner to Cashmere. The following sections describe planning context topics considered along the corridor. An overview of each topic area is provided below.

Topic Areas



Land Use: Land use context around each segment, including land use types (residential, commercial, etc.), future plans for redevelopment, neighborhood access, environmental conditions, as well as the jurisdiction of properties in the corridor, as well opportunities and constraints created by these uses.



Pedestrian/Bike Facilities: Each segment area describes conditions for walking and biking along each segment as well as parallel routes in the area, and considerations for how the need to serve those users will influence potential treatments.



Transit: Each segment area provides a description of services operating along the segment, headways, and stops along the segment.



Vehicle Operations: Summarizes roadway configurations and features for each segment, as well as trends in volume data and origin-destination data along the corridor.



Safety: Collision data, provided by WSDOT, for a three-year period (January 2015 to November 2018) were evaluated for collision history, collision factors, and collision density along the segment and within the City of Leavenworth.



Corridor Data

This section summarizes data collected along the entire corridor for each planning context area.



Sources reviewed for the current and proposed land uses along the corridor include the Chelan County Zoning Map and Comprehensive Plan, and the City of Leavenworth and Regional Zoning map.

Additional projects proposed along the corridor are also discussed by respective segment in the following sections.

Bicycle & Pedestrian Data

Figure 3 shows the Wenatchee Valley Bicycle map, which includes paved and unpaved trails, bike lanes, and suggested bike routes ranging from most comfortable to somewhat comfortable to use caution within the study area. While the segment within the City of Leavenworth acts like a "main street" and is the most accommodating for people walking and biking, as shown on the map, the rest of the segments accommodate pedestrians and cyclists on alternate routes. The latter sections of the report will describe conditions for walking and biking along each study segment, including parallel routes along the segment.

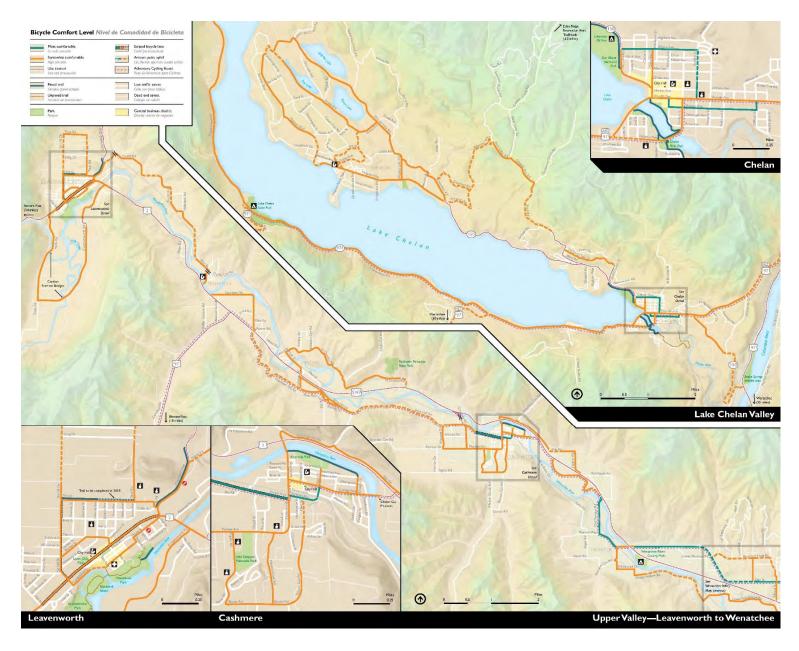


Figure 3: Wenatchee Valley Bike Map, Chelan-Douglas Transportation Council





Link Transit operates transit service along the corridor within the study area. Data provided by Link Transit summarizes current operations on Route 22, which begins at Columbia Station in Wenatchee and ends at the Icicle Road stop in Leavenworth.

In Wenatchee, westbound service for Route 22 begins at 4:40 AM from the Euclid Avenue and Penny Road stop, with service from Columbia Station beginning at 5:00 AM. In Leavenworth, eastbound service for Route 22 begins at 5:25 AM from Icicle Road and US 2. Headways for Route 22 in Leavenworth are as follows:

- Weekdays:
 - o 30 minute headways: 5:25 AM-8:00 AM and 5:10 PM-7:10 PM
 - o 60 minute headways: 8:00 AM-5:10 PM
- Weekends:
 - 120 minute headways: 8:00 AM-12:00 PM and 3:00 PM-5:00 PM
 - o 180 minute headways: 12:00PM-3:00PM

Route 22 serves three of the four segments from the western Leavenworth City Limits to the east end of the study area. **Figure 4** shows a map of the service area and transit stops along the study corridor for Route 22.



Figure 4: Existing Transit Service

Source: Link Transit, Fehr & Peers, 2018.



As of 2016, Route 22 served about 610 riders per day. A slight decline in ridership occurred from 2015 to 2016 and only minimal ridership changes between 2016 and 2018 (see **Figure 5**). Three-quarters of the boardings are on weekdays, while 25 percent of boardings are on Saturdays. There are bus shelters at some major stops along the corridor, including four within Leavenworth, one in Peshastin, two by the US 97 junction and two in Dryden.

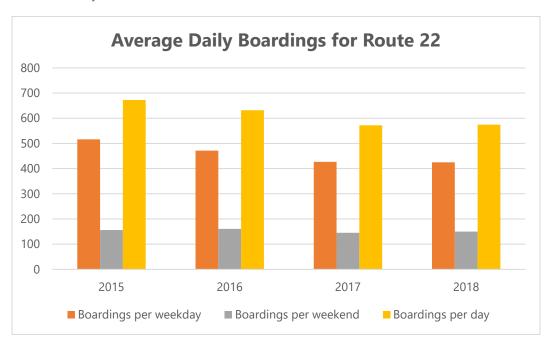


Figure 5: Average Daily Boardings for Route 22

Source: Link Transit, Fehr & Peers, 2018.



Vehicle Operations Data

Given the unique travel patterns in the region, the vehicle operations context for the corridor must be framed within the context of special events and seasonal recreational travel. The project team used a combination of traditional data counts and innovative data sources to supplement our understanding of travel behavior along the study corridor. The data collected along the US 2 corridor includes:

 Average Daily Traffic (ADT) counts per month collected by WSDOT at two locations: (1) between Leavenworth and Coles Corner and (2) east of Leavenworth, in Peshastin

¹ Based on Link Transit data from 2015 – 2018.



• Traffic volume and pedestrian counts collected a primary US 2 intersections on weekends in December 2018 and August 2019



Figure 6 shows collision density along for the entire study corridor, while collision factors by segment are covered in the sections below. Collision density for the corridor was calculated using collision data provided by WSDOT for a five-year period from January 2014 to December 2018.

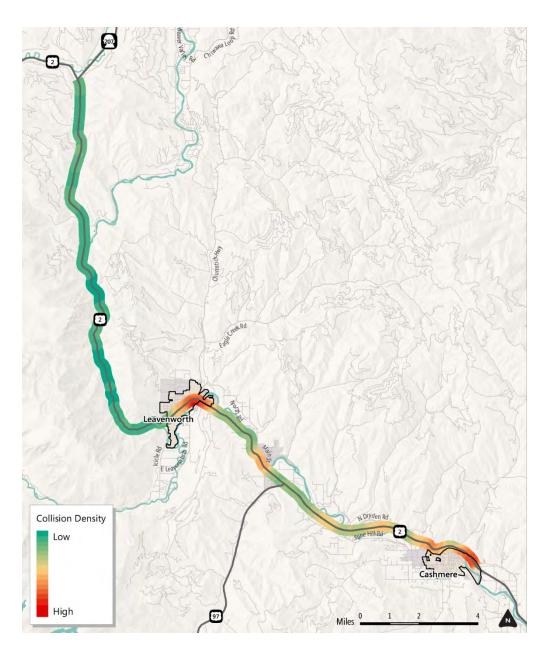


Figure 6: Collision density along the US 2 corridor

Source: WSDOT, Fehr & Peers, 2018.



Northwest Segment: Coles Corner to Icicle Road



The northwestern most segment of this corridor begins in Coles Corner at the confluence of US 2 and SR 207. This 14 - mile segment, stretching from Coles Corner to Leavenworth's western city limits and has mostly public and commercial forest lands adjacent to the corridor as it is bounded by steep slopes on one side and the Wenatchee River on the other as it winds through the Tumwater Canyon and is zoned as Commercial Forest Lands.

A small portion of this segment at the east end falls within the UGA for the City of Leavenworth. Within the UGA, zoning allows commercial tourism uses.

Development plans for an Adventure



Park on the land to the south of US 2 in this area are currently being reviewed by the City.



Pedestrian/Bike Facilities

As a result of the constrained geography along this portion of the corridor, no bicycle or pedestrian facilities exist from Coles Corner to Icicle Road. The lack of pedestrian facilities along this portion of the corridor creates concern for people who often stop along the segment to take pictures of the scenery and access trails or the river.

Transit Service

There is a seasonal transit shuttle run by the City of Leavenworth operating between the City and Stevens Pass Mountain Resort.

Vehicle Operations

From Coles Corner to Icicle Road, US 2 is a two-lane road with some three-lane sections that accommodate passing in the uphill direction.



Source: Google Earth, 2018

Due to the narrow cross-section, paved shoulders are only provided sporadically along the segment. In addition to the constrained capacity, this segment of the corridor also experiences frequent seasonal closures due to avalanche potential or threats in the Tumwater Canyon.

Figure 7 shows the ADT for this segment of US 2. As shown, this segment experienced higher traffic during the summer months, with the peak usage occurring in July, and peaking again in December. Traffic volumes on a summer Saturday (June, July and August) are 48 percent busier than those measured on a Saturday during the winter Saturday (December, January and February). Through the year, Saturday volumes are 79 percent higher than the typical weekday (Tuesday-Thursday) volumes along this segment.

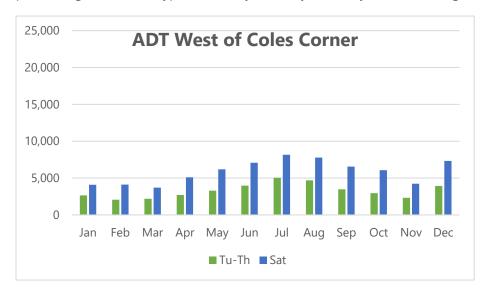
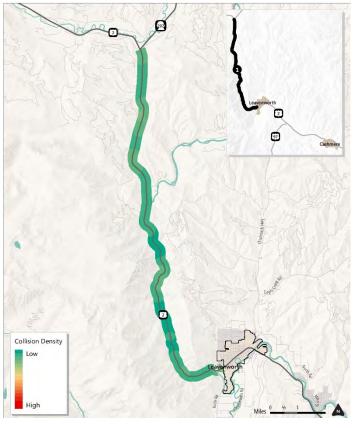


Figure 7: Collected on US 2 at milepost 80.20, west of Coles Corner

Source: WSDOT, Fehr & Peers, 2017.

Safety/Collision Data

Figure 8 summarizes the collision density along the northwest segment. As shown, collision density along the corridor is low. Key findings from the safety assement for this segment include:



• No collisions involving a bicyclist or pedestrian occurred over the last five years. 21% of collsions were due to speeding.9% of collisions were caused by driver inattention.

- 24% of collisions occurred during snowy or slush conditions, and 58% occurred in dry conditions.
- The majority of collisions (18%) occurred at 4:00 or 5:00 pm, with 58% occuring in daylight.
- 25% of collisions involved a vehicle striking a deer.

Source: WSDOT, Fehr & Peers, 2018.

Figure 8: Collision density along the northwest segment

Northwest Segment Key Findings

Segment Issues and Opportunities



• Land use development along this segment is confined to Coles Corner and the Leavenworth UGA due to geographic features.



- Currently no facilities for bicyclists or pedestrians exist along this segment of the corridor.
- Demand for pedestrian facilities along this segment is driven by travelers stopping to take scenic pictures along the corridor or access trails or the river.



- Currently no transit operates along this segment of the corridor.
- Given the land uses and destinations along this segment of the corridor, transit is likely not feasible or demanded along this segment of the corridor.
- ADT counts at Coles Corner indicate that volume on Saturdays during the summer months is almost 50% higher than Saturday volumes during the winter months.

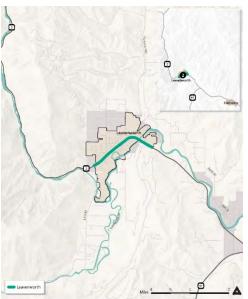


- Throughout the year, Saturday volume on this segment is 79% higher than typical weekday traffic.
- Geographic features provide limited opportunity for capacity improvements on this segment.
- This segment also experiences frequent seasonal closures due to avalanche potential or threats in the Tumwater Canyon.



• Speeding, driver inattention and hitting a deer were the leading causes of collisions from 2014 to 2018.





Leavenworth Segment: from Icicle Road to Leavenworth City Limits



As shown in **Figure 9**, the City of Leavenworth's zoning map, land uses along the corridor are zoned as general commercial, central commercial, and tourist commercial. Potential developments being considered along this segment are planned to occur at the east end of the segment. The large amounts of commercial land use, specifically within the Central Commercial Zone, contributes to a high mix of transportation modes utilizing the corridor including bicyclists, pedestrians, and vehicles.

The concentration of commercial uses to the south of the corridor and residential uses to the north must be considered as solutions for how Leavenworth residents use the corridor are identified.

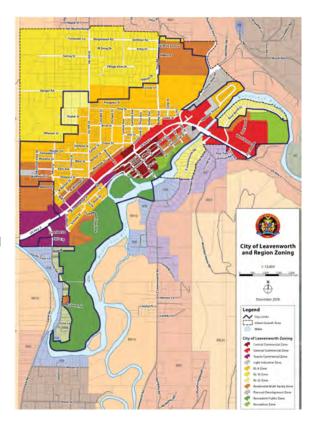


Figure 9: City of Leavenworth and Regional Zoning



Pedestrian/Bike Facilities

Beginning at the western city limits, bicycle lanes exist in both directions on US 2 until Front Street when the bicycle lane in the eastbound direction is replaced by on-street parking. From Icicle Road to Chumstick Highway, 1.25 miles of bicycle lanes are provided in both directions along the US 2 corridor. Off the corridor, paved trails and bike lanes exist on Ski Hill Drive, Pine Street and Chumstick Highway within the City. See Figure . in the previous section for a map of the Wenatchee Valley Bicycle map, which includes paved and unpaved trails, bike lanes, and suggested bike routes ranging from most comfortable to somewhat comfortable to use caution.

Along this portion of the US 2 corridor, there are sidewalks on both sides of the highway, from Icicle Road to E Leavenworth Road. From E Leavenworth road to City limits, sidewalks exist only on the north side of the highway. Pedestrian facilities for crossing US 2 by location and crossing type are:

- Mill Street signed marked crosswalk
- Ski Hill Drive signed marked crosswalk
- Enzian Inn (west of Front Street) signed marked crosswalk
- Front Street signed marked crosswalk
- Leavenworth City Hall Solar powered Rectangular Rapid Flashing Beacon (RRFB)
- Evans/9th St signalized intersection
- Leavenworth Park & Ride unsigned marked crosswalk
- Chumstick Highway signalized intersection
- River Bend Drive signalized intersection

The largest distances between intersections are 1,350 feet between Leavenworth Park & Ride and Chumstick, and 1,900 feet between Chumstick Highway and River Bend Drive. Within the center of Leavenworth, marked crossings are closer together; however, as noted above, only one crossing currently features a RRFB, which alerts vehicles that a pedestrian is crossing. All other mid-block crossings are uncontrolled.

Near term improvements planned within the City of Leavenworth include the addition two High-Intensity Activated Crosswalk (HAWK) signal and one additional RRFB for pedestrian crossings.



Along this segment, Route 22 has a total of six stops within Leavenworth. The stops and route within Leavenworth are shown on Figure 10.



Within the City of Leavenworth, Link also operates Dial A Ride Transportation (DART), which is a service offering shared ride with advanced reservations within the Leavenworth area. This service operates Monday through Friday between 7:30 AM and 5:30 PM.



Figure 10: Existing transit in Leavenworth

Source: Link Transit, Fehr & Peers, 2018.



Vehicle Operations

As shown, through the City of Leavenworth, US 2 is a three-lane facility with two travel lanes and a two-way-left-turn lane. On-street parking is also provided between Front Street and 9th Street on the eastbound side of the corridor.



Source: Google Earth, 2018

As discussed above, intersection counts collected for on peak weekends and ADT counts collected by WSDOT are being utilized for this study to understand the unique travel patterns within this region.

Traffic and pedestrian counts were collected at primary US 2 intersections on a Friday in August between 2 PM and 5 PM and between 11 AM and 2 PM on a Sunday in August. Within these time periods, traffic counts indicated that traffic volume peaked between 3:15 PM and 4:15 PM on Friday afternoon and between 12 PM and 1 PM on Sunday afternoon. Pedestrian counts at intersections and crossings on US 2 in Downtown Leavenworth ranged from 330 pedestrian crossings at the 9th Street intersection on Friday afternoon to 950 crossings at Front Street on Sunday afternoon.

Within the City of Leavenworth, the project team attempted to use StreetLight data to understand where residents travel in the area. As StreetLight data relies on aggregated data, sample size is important to be able to draw strong conclusions. We found that for unique time periods (a summer weekend and the Christmas Lighting Festival), smaller data sets and sample size limit the application of StreetLight data. This is likely due to the application of data to smaller time periods and geographic features. As this data relies on data from cell phones and other mobile routing systems, the fact that cell-phone service is lost just west of Leavenworth likely resulted in an inaccurate number of trips ending within the city limits. However, for these time periods more traditional data sets and observations (specifically at the Christmas Lighting Festival) can be used to evaluate operations along the corridor. Conditions during these events are discussed in detail in the following segment.



Collision density along this segment of the corridor was found to be higher than any other segment, with the highest densities occurring along the corridor in the eastern half of the 1.7 mile segment, as shown on **Figure 11.**

Collision data within the City of Leavenworth was also analyzed to understand locations and patterns of collisions occurring on facilities parallel to US 2. **Figure 12** shows the location and type of collision.

Key findings for collision data along this segment include:

 No collisions in the last five years involving bicycles occurred along the corridor or within the City of Leavenworth.

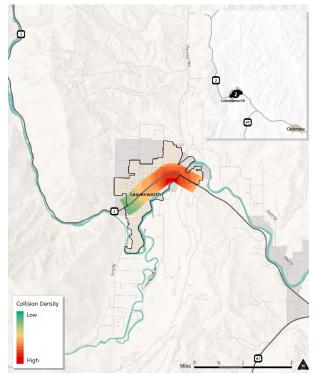


Figure 11: Collision density along the Leavenworth segment

Source: WSDOT, Fehr & Peers, 2018.



- All six pedestrian injuries in the City of Leavenworth occurred on Front Street, four of which occurred at the intersection of 9th Street and Front Street, with 33% pedestrian injuries caused by driver distraction and 33% caused by pedestrians failing to yield or failing to use a cross-walk.
- The two main contributors to collisions along the corridor were driver inattention (25%) and following too closely (18%), resulting in a large amount of rear-end collisions
- Most collisions occurred in dry roadway conditions (78%), with 12% occurring in the snow or slush.
- 56 % of collisions occurred between the hours of 11:00 am and 5:00 pm.

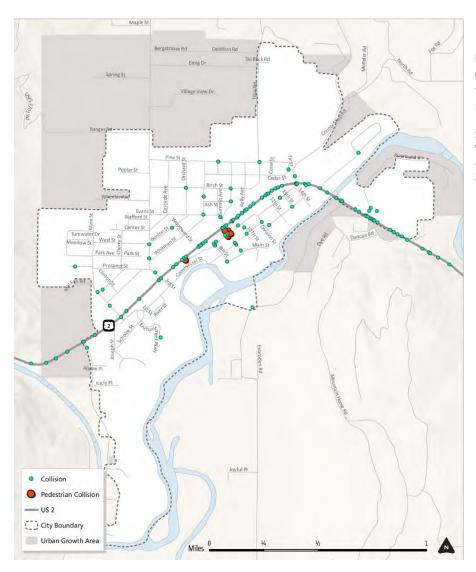


Figure 12: Collisions in the City of Leavenworth

Source: WSDOT, Fehr & Peers, 2018.

Leavenworth Segment Key Findings

Segment Issues and Opportunities



- With the exception of a planned development at the corner of US 2 and Icicle Road and potential development at the east end of Leavenworth, land use along the corridor is built out.
- As US 2 splits land use within the center of Leavenworth (generally commercial uses on the south, residential uses on the north), this drives the need for residents to cross US 2.
- Bicycle lanes are provided on US 2 for the extent of the segment, except for a section between Front Street and Evans Street in the eastbound direction where the bicycle lane is replaced by on-street parking.



- Pedestrians can utilize sidewalks along both sides of US 2 for the entire length of the segment. However, opportunities to cross US 2, specifically on the west and east end of the City are approximately a quarter mile apart.
- Within the center of Leavenworth, crossings are provided more frequently; however only one is enhanced with an RRFB for crossing, with three at signalized intersections and five crossings are uncontrolled.
- The City of Leavenworth plans to install a HAWK signal and additional RRFBs at crossings near the center of the city.



- Link Transit operates Route 22 along the corridor, with a total of six stops within Leavenworth.
- Dial-A-Ride Transportation also operates within Leavenworth on weekdays between 7:30 AM and 5:30 PM.



• Hundreds of pedestrian cross US 2 at primary downtown intersections during peak weekend hours.



- Over the last three years, no collisions with bicyclists were reported within the City of Leavenworth.
- All pedestrian collisions occurred on Front Street.
- The main contributors to collisions on US 2 were driver inattention and following too closely.





Peshastin Segment: Leavenworth City Limits to US 97



This segment of the corridor is bordered by agricultural and commercial tourism uses. This includes fruit stands, river-rafting, and wineries, which all have direct access to US 2.

Near the SR 97/US 2 interchange, the land surrounding the corridor is zoned as part of the Peshastin UGA. On the south side of US 2, the

UGA is zoned for Highway Commercial and Medium-Density Residential. To the north zoned uses include Highway Commercial and Low-Density Residential. No immediate plans for new development exist along this segment of US 2.



Pedestrian/Bike Facilities

Due to the rural nature of this segment, no bicycle and pedestrian facilities other than narrow shoulders are provided. However, bicyclists have the option to use the parallel route of North Road which is classified as a somewhat comfortable suggested bike route on the Wenatchee Valley Bike Map (see **Figure 3** in the previous section).



Transit service along this segment is provided by Link Transit's Route 22, operating as described in the Corridor Data section. There are five stops along this segment as shown on **Figure 13**.



Figure 13: Existing Transit Peshastin Segment

Source: Link Transit, Fehr & Peers, 2018.



This segment has a two-lane cross-section, with narrow shoulders from the Leavenworth City Limits to Lone Pine Road, where a two-way-left-turn lane is added providing access to retail and residential land uses in this portion of the segment. The two-way-left-turn lane is approximately half a mile long, with US 2 returning to a two-lane cross-section until Stage Road, where a short two-way-left-



Source: Google Earth, 2018

turn lane again provides access to local businesses and residential uses along the corridor.

ADT volumes (shown on **Figure 14**) on this segment are 76 percent higher than the segment to the west of Leavenworth, indicating that a large number of trips year round on this segment start or end in Leavenworth. While the amount of traffic utilizing the



corridor is much higher on this segment than west of Leavenworth, general patterns are similar.

Saturday volumes on the corridor increase by 31 percent during the summer months, which is a smaller increase than observed on the west side of Leavenworth, indicating that while seasonal travel causes an increase in traffic, it makes up a smaller percent of travel on this segment than other corridor segments. This is consistent with this segment's role as a regional commuter route. As shown below, the weekday and Saturday volumes are also more consistent throughout the year, with weekday traffic being higher than or equal to Saturday travel between January and March.

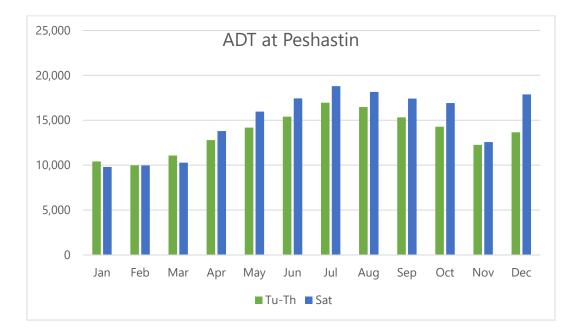


Figure 14: Collected on US 2 at milepost 103.92, Peshastin

Source: WSDOT, Fehr & Peers, 2017

Safety/Collision Data

Collision density along this segment is shown on **Figure 15**. The highest collision density occurs on the west end near Leavneworth city limits and the Main Street Bridge to Peshastin where access to local land use exists.

Key findings for collision data analyzed along this segment include:

- No collisions involving a bicyclist or pedestrian along this segment occurred in the last five years.
- The majority of collisions were caused by:
 - Driver inattention (18%)
 - Following too closely (11%)
 - Exceeding reasonable safe speed (9%)
 - o Alcohol (8%)
 - o Not granting right-of-way (7%)
- Most collisions occurred in dry conditions (67%), with 17% occurring in wet conditions and 10% occurring in snow or slushy conditions.
- The majority of collisions (30%) occurred in the afternoon from 3:00 pm to 6:00 pm, with 60% of collisions occurring in daylight.
- 21% of collisions involved a vehicle striking a deer.

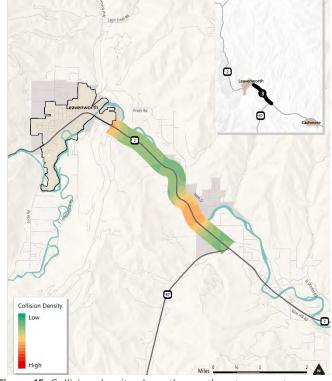


Figure 15: Collision density along the southeast segment

Source: WSDOT, Fehr & Peers, 2018.



Southeast Segment Key Findings

Segment Issues and Opportunities



 Land use along this segment is mostly rural and includes agricultural and agricultural tourism uses that have direct access to US 2.



- Bicycle and pedestrian facilities are not provided along US 2, any users wanting to be on US 2 must utilize the shoulders.
- Bicycle facilities are also not provided on the corridor, but North Road is classified as a somewhat comfortable alternative for bicycles in the area.



• Route 22 serves five stops along this segment of the corridor and connects to the community of Peshastin.

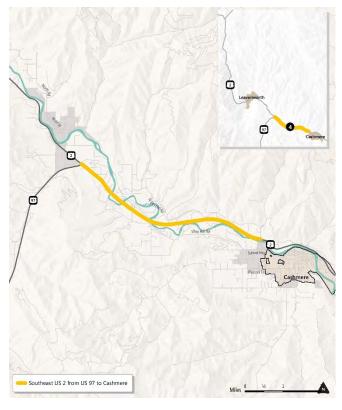


- ADT counts on this segment indicate higher weekend and summer usage; however, the peak in December is almost as high as the summer peak, confirming high usage of this segment during Christmas Tree Lighting.
- This segment sees less temporary peaking than other segments, given its role a regional commuter route.



- The highest density area for collisions along this segment are near the eastern Leavenworth City Limits and where the majority of local access driveways occur.
- Driver inattention and following too closely were the leading contributors to accidents along this segment of the corridor.

Southeast Segment: US 97 to Cashmere





This segment of the corridor is fully within Chelan County and surrounded mostly by agricultural uses. Exceptions to agricultural uses include the community of Dryden, where residential uses are adjacent to the corridor, and near the east end of the segment in Cashmere, where residential and light industrial uses exist on the north side of the corridor.

Zoning along the corridor includes commercial agriculture and low-density residential with the goal of maintaining current densities, specifically within the

Cashmere UGA.



Pedestrian/Bike Facilities

While shoulders along this segment are at least 12 feet wide on both sides of US 2, no additional bicycle or pedestrian facilities are provided.

Similar to the Peshastin Segment, alternative routes providing somewhat comfortable facilities for bicyclists exist for the length of the segment, as shown on **Figure 3** in the Corridor Data section. Parallel routes in the area include, Deadman Hill Road, Main Street, North Dryden Road, and Stine Hill Road.



Transit Service

Transit service along this segment is provided by Link Transit's Route 22, operating as described in the section above. There are two stops in each direction along this segment of the corridor as shown on **Figure 16**.



Figure 16: Existing Transit Southeast Segment

Source: Link Transit, Fehr & Peers, 2018.



This segment of US 2 has four travel lanes with a barrier in the center median. With the division of traffic and guardrails, which are provided in sections along the corridor, this segment of the corridor has more safety features than observed elsewhere. Another benefit to operations along this segment of the corridor is the limited access points. Unlike other segments, access to businesses and residential areas along the corridor is limited to intersections, rather than direct driveway access to the corridor. More limited access to the corridor reduces conflicting vehicular movements crossing on-coming traffic, both entering and exiting the corridor.



Source: Google Earth, 2018

Planned improvements along this segment includes reconstruction of the West Cashmere Bridge. Reconstruction of the bridge consists of removal of one leg at the US 2 at Hay Canyon Road intersection, and will improve connections into Cashmere, specifically for freight traffic that currently are not able to use the existing bridge.



Safety/Collision Data

The heat map of the number of collisions along both the US 2 corridor from US 97 to Hay Canyon Road is shown in **Figure 17**. The collision history for the study segment, which is 5.6 miles long, is summarized below.

- There are no collisions involving a bicyclist along this segment of US 2 in the past five years.
- There was one collision involving a pedestrian along this segment of US 2, which was a serious injury where the pedestrian did not grant right-of-way to the vehicle. The location of this collision is at the intersection of Dryden Avenue
- Majority of collisions were due to exceeding a reasonably safe speed (13%).
- Other causes include following too closely (9%) and inattention (8%).



- During peak commute hours, collisions occurring at 6:00 am made up 9% of all collisions and while 14% of collisions occurred between 3:00 pm and 5:00 pm.
- 47% of collisions occurred in daylight, while 34% of collisions occurred in the dark with no street lights on.
- 42% of collisions involved a vehicle striking a deer.

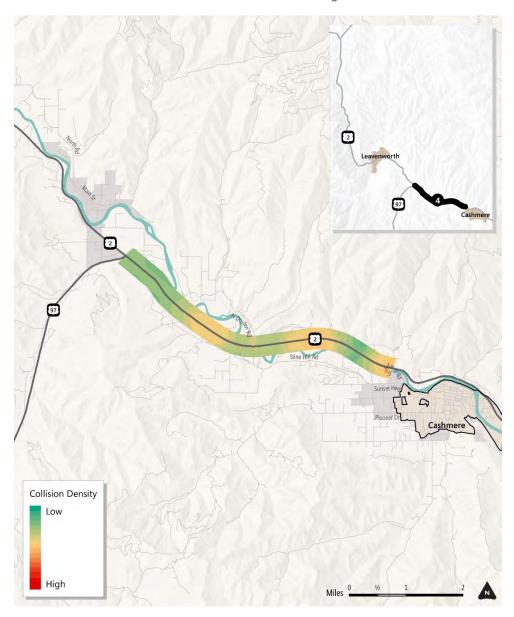


Figure 17: Collision Density- Southeast Segment

Source: WSDOT, Fehr & Peers, 2018.

Southeast Segment Key Findings

Segment Issues and Opportunities



 No major changes to the current agricultural and low-density residential uses are expected to occur along this segment of the corridor.



- Bicycle and pedestrian facilities are not provided along US 2 in this segment of the corridor so users along US 2 must utilize the shoulders.
- Alternative routes that more comfortably accommodate bicyclists include Deadman Hill Road, Main Street, North Dryden Road, and Stine Hill Road.



- Route 22 serves two stops in each direction along this segment of the corridor.
- Opportunities to reconfigure Route 22 connection to US 2 and Cashmere should be considered with upcoming reconstruction of the West Cashmere Bridge.



- Limited access, divided directional travel, and more consistent safety features improve conditions for vehicles operating on this segment of the corridor.
- Capacity along this segment is less constrained than other segments of the corridor where geography and land use limit capacity improvement options.



 Speed was the largest contributor to collisions at 13%, a result of drivers increasing speed as they transition from a two-lane undivided roadway to a four-lane divided roadway.

Appendices

B. Stakeholder Interview Summary

Sebruary 2020 Appendix



MEMORANDUM

Date: March 29, 2019

To: Jeff Wilkens, Chelan-Douglas Transporation Council

From: Kara Hall, Kendra Breiland, Fehr & Peers

Subject: US 2 Upper Wenatchee Valley Corridor Transportation Study - Stakeholder

Interview Summary

SE18-0649

The US 2 Upper Wenatchee Valley Corridor Transportation Study will propose short-term, midterm, and long-term solutions for managing congestion and expectations along the US 2 corridor between Coles Corner and Hay Canyon Road, just west of Cashmere. The goal for this study includes identifying both temporary and permanent solutions that provide transportation for all modes and improve travel reliability along the corridor. The first phase of the corridor study is focused on understanding and documenting existing challenges and opportunities. An important component of this first phase is to engage the community. Part of the initial community engagement is to evaluate existing conditions through interviews of stakeholders and representatives of the project's advisory committee.

The full list of representatives interviewed as part of the initial outreach is below.

STAKEHOLDERS INTERVIEWED

Stakeholders interviewed included residents, local business owners, local community group representatives and agencies responsible for operations along the US 2 corridor.



Festival Operators

- Chantell Steiner, Leavenworth Festhalle Civic Center Oversight Committee
- Steve Lord, *Chair of Oktoberfest*
- Nancy Smith, Executive Director of Leavenworth Chamber of Commerce

Community Groups

- Wilma Cartagena, President of NCW Hispanic Chamber of Commerce
- Doug Clarke, Vice-Chairman of Peshastin Community Council
- Tim Bentz, Transportation Supervisor with Cascade School District
- Josh Harmening, House Manager with Tierra Village

Businesses

- Dan Carr, Owner of Visconti's Restaurant
- Chris John, General Manager of Posthotel
- Gary Planagan, Owner of Osprey Rafting Company
- Ed Rutledge, Owner of Eagle Creek Winery
- Brian Pulse, Director of Emergency Medical Services with Cascade Medical Center
- Lisa Worthen and Eric Worthen, Owners of Dan's Food Market

Agencies

- Lieutenant Kelly Gregerson, Washington State Patrol
- Terry Van Hoven, WSDOT Maintenance
- Steve Burger, *Link Transit*
- Monica Lough and Craig Larson, Port of Chelan County

STAKEHOLDER INTERVIEW HIGHLIGHTS

Stakeholder interviews were conducted by Envirolssues, Fehr & Peers, and Perteet. Interviews were held both in person and over the phone. The full list of questions asked during each interview are in **Attachment A** and highlights of the interviews are summarized below.

Study Awareness & Concerns

- Roughly half of the stakeholders were aware of the study.
- Stakeholders were most concerned with congestion in Leavenworth, particularly on the weekends and during peak tourism season. Many expressed a desire to separate visitor traffic from local traffic.



- Additional concerns along the corridor include: congestion on alternate routes, parking for visitors, frequency and reliability of public transportation, and emergency response and evacuation.
- The effect of frequent pedestrian crossings combined with poor timing between signals within Leavenworth was noted as a cause of congestion within the city.
- Almost all stakeholders interviewed agreed that gridlock in Leavenworth is the worst during the Christmas Tree Lighting Festival, particularly when the lighting ceremony concludes and visitors leave the area.
- Many stakeholders expressed a strong desire for cooperation between the City of Leavenworth and festival organizers regarding the capacity of Leavenworth to accommodate the large number of visitors.
- Almost all stakeholders understand that the project area is geographically constrained by
 the Wenatchee River and mountains, so widening US 2 is unlikely going to be a promising
 alternative. As a result, they expressed interest in an innovative solution that incorporates
 transit, off-site parking and shuttles, and alleviates congestion so residents can move more
 effectively through the project area during peak tourism seasons.
- One stakeholder noted that while planning around Christmas Tree Lighting Festival has improved conditions, the hospital must be engaged as they operate ambulance services in the area.
- Currently, delivery trucks for businesses in Leavenworth unload in the two-way-left-turnlane. This causes challenges in winter months when snow plows are operating along the corridor and do not have enough room to pass unloading trucks, resulting in back-ups and delays along the corridor.

Alternate Routes

- Many stakeholders mentioned needing alternate routes between Peshastin and Dryden, and through Leavenworth to Chumstick Highway.
- Several stakeholders suggested exploring the opportunity to identify North Road as an alternate route open only for locals during events and festivals, noting concerns about GPS maps and law enforcement directing traffic onto North Road during major festivals.
- An alternate route that runs south of US 2 from Tumwater Canyon to Peshastin to bypass Leavenworth was also suggested.



- Stakeholders expressed concern that other routes do not have the infrastructure and capacity to safely accommodate more traffic volume as many of these routes also serve local agricultural needs.
- Several stakeholders noted that this corridor is greatly impacted by frequent closure of both Snoqualmie Pass and Tumwater Canyon during the winter seasons.

Parking

- Most stakeholders noted that there is insufficient parking in Leavenworth, especially for visitors, and the spillover into residential areas negatively impacts residents' ability to find parking and access their homes.
- Several stakeholders suggested building a multi-level parking garage in town or a
 designated parking area outside of Leavenworth, running a shuttle to the facility that could
 be staffed by locals, specifically Tierra Village residents, which serves adults with
 developmental disabilities.
- Tourists parking along Tumwater Canyon create safety and maintenance concerns during all seasons.
- One stakeholder noted that often the parking available in downtown is being fully utilized by employees, limiting visitor access to prime parking.

Future Developments and Changes

- Approximately half of the stakeholders interviewed mentioned the Adventure Park and concern for traffic problems associated with the development of that project.
- Other developments that were mentioned include: condominium/apartment developments and a new bus stop/transfer park-and-ride near Safeway, housing development in Peshastin, and new hotel/motel development in the area.
- One stakeholder noted that expected growth in Peshastin, includes warehousing, distillery, and manufacturing. There is also potential for the Winton Mill, near SR 207, to accommodate more employees, and a planned business park near the West Cashmere Bridge.

Public Transportation

- Some stakeholders expressed concern over the accessibility and frequency of public transit.
- Business owners thought that if public transit were more accessible and frequent, more employees would use it.



- One community organization identified the lack of transit access as the biggest barrier for their programs and residents.
- The lack of transit access to Chumstick Highway was also identified as a barrier to public transportation use.
- One local business owner mentioned that due to frequency and service times there is no viable public transit option between Wenatchee/Cashmere/Dryden to Leavenworth and therefore, most employees commute by driving.

Community Outreach

- Most stakeholders reported that residents within the study area are a tight-knit community and are highly engaged in local issues. As a result, stakeholders noted several strategies that would be effective in the study area:
 - Direct mailers and electronic newsletters
 - o Staffing local community events, like farmers markets
 - Conducting outreach through different Facebook groups (i.e. Mamas and Papas,
 City of Leavenworth, Friends of Leavenworth)
 - o Using the Leavenworth Chamber of Commerce network
 - o Advertising through the Leavenworth City Council and its newsletter
 - o Public forums and briefings, specifically with community and agriculture groups
 - Distributing project information in community hubs, like cafes and restaurants frequented by both tourists and locals
 - Local radio
- Several stakeholders suggested translating materials into Spanish, particularly surveys and factsheets.
- Some suggestions for additional stakeholders that should be engaged throughout the
 process include: Icicle Brewing, Borealis Builders, Sage Mountain, communities between
 Leavenworth and Cashmere, community outreach groups like CAFÉ, the City of Wenatchee,
 and local school districts.

Safety

 Residents of the City of Leavenworth stated their primary concern is evacuating the area in the event of a wildfire or other emergency and providing emergency response during periods of high traffic congestion.



- Narrow road width and lack of shoulder along US 2 was identified as a concern by several stakeholders.
- One stakeholder reported that the 60 mile per hour speed limit on US 2 through Coles
 Corner is too high and described seeing several moderate-to-severe accidents at the
 turnoff to SR 207.
- While speed along the US 2 corridor from Peshastin to Cashmere was a noted concern, one stakeholder stated that the recent prioritization of speed limit enforcement along that segment has improved concerns.
- Flashing red-light early warning systems are believed to have lowered the number of highspeed impact collisions.
- One stakeholder noted concern over summer rafting companies not observing typical safety procedures for passenger transport. This results in overwhelming the pull-outs along the corridor at disembarking areas upstream of common take-outs for rafting on the Wenatchee River.
- One stakeholder noted that signals along US 2 within the City of Leavenworth do not include emergency preemption; however, within Wenatchee signals do have emergency preemption.

Study Aspirations

- Stakeholders agreed that the most favorable outcome of this study is one that addresses the challenges of Leavenworth tourism during peak seasons.
- Stakeholders also agreed that no workable solution has been identified to date and that creative solutions are highly encouraged.
- Addressing parking concerns in Leavenworth was a desire expressed by most stakeholders.
- Some stakeholders hoped that the project team would consider alternatives to evenly
 distribute tourists throughout the region, such as concentrating additional lodging
 development in nearby areas and shuttling visitors into Leavenworth for recreation and
 special events.
- Improving transit operations for both residents and tourists was identified as a favorable outcome by some stakeholders.
- One previous enhancement along the corridor identified as successful by stakeholders was the improvements at the US 2/Highway 97 interchange.
- Several stakeholders noted their ideal outcomes of this study would be to expect more reasonable and reliable travel time along the corridor.



ATTACHMENT A: INTERVIEW QUESTIONS



INTERVIEW QUESTIONS

- 1. How much do you know about the traffic study being done?
- 2. What are your concerns about this corridor? How do the current corridor traffic patterns affect your business and/or people you represent including, but not limited to, residents, commuters, freight, recreation, etc.?
- 3. How could the corridor be improved to help you and/or your constituents? What are your priorities for this corridor? For the study?
- 4. Are you aware of any major changes planned along the corridor? (development)
- 5. How would you recommend we communicate with and involve the community in this study? Do you have specific suggestions or communications methods that have been successful in the past?
- 6. Are there specific people, organizations or group we should be reaching out to? Whom?
- 7. What languages are spoken within the study area?
- 8. Are there specific minority and low-income groups that we should be aware of? If yes, which?
- 9. What would be the best possible outcome from this study?
- 10. Are there any other topics, interests or concerns that we have not discussed that you would like us to address?
- 11. How can we best communicate with you about the process moving forward?

Appendices

C. Project Meeting Summary

Sebruary 2020 Appendix

Project Advisory Committee Meeting #1 February 27, 2019



PROJECT ADVISORY COMMITTEE MEETING

Wednesday, February 27, 2019 11:30 AM – 1:30 PM

AGENDA

Purpose of the Meeting:

Topic	Facilitator	Timing
1. Welcome & Introductions	Penny Mabie	10 min
PAC Charter & Project Overview	Kara Hall/ Penny Mabie	20 min
3. Balancing User Needs	Kara Hall/ Penny Mabie	40 min
 Corridor Vision & Guiding Principles 	Kendra Breiland/ Penny Mabie	40 min
5. Next Steps & Meetings	Kara Hall	10 min













Project Advisory Committee (PAC) Charter

Purpose

The main purpose of the PAC is to help inform the development of the US 2 corridor plan to address broad community needs.

Term

The PAC will meet up to five (5) times between February and November 2019.

PAC role

The PAC will:

- Review materials, complete pre-meeting activities, and come prepared to discuss, listen, and learn at meetings
- Help inform the project team's understanding of the current needs and planning context of the planning area
- Provide input and advice on development of a corridor vision, evaluation criteria, and temporary and permanent solutions to address mobility needs along the corridor
- Communicate with member constituencies about the corridor planning process and seek input in order to reflect various community and perspectives throughout the PAC's work

CDTC staff role

CDTC staff and consultants will:

- Provide information on options to the PAC
- Send draft materials to PAC members five calendar days before meetings
- Work collaboratively with the PAC to share information and solicit PAC input as the corridor study reaches milestones
- Take notes and develop summaries of each meeting
- Consider the input and advice of the PAC throughout the corridor study
- Reflect back to the PAC on how their input and advice has been considered

Neutral facilitator role

The neutral facilitator will:

- Serve as an impartial individual who guides the process, including facilitating PAC meetings.
- Keep the group focused on the agreed-upon purpose and roles. Set protocol for each meeting, suggest alternative methods and procedures, and encourage participation by all group members.
- Works with CDTC to coordinate meeting logistics, prepare meeting agendas and materials (including meeting summaries). PAC members will be notified of what materials will be printed prior to each meeting. Summaries will be provided a week following each meeting.
- Assists in keeping communication open between the PAC and CDTC and consultant staff. The facilitator will work to assure relevant information is provided in a timely and effective manner.
- Will not offer substantive discussions about design elements.

Meeting ground rules

- Start and end on time
- Silence electronics
- · Ask questions of each other to gain clarity and understanding



US 2 Upper Wenatchee Transportation Study Project Advisory Committee – Charter Last updated: 2/25/2019

- Express yourself in terms of the group you are representing, including the preferences, interests and the outcomes you wish to achieve
- Listen respectfully, and sincerely try to understand the needs and interests of others
- Have curiosity and willingness to learn

Meeting Schedule

- Meeting #1 will be on February 27, 2019.
- Subsequent meetings will be scheduled in alignment with key project milestones and to best meet PAC member availability.





Downtown East-West Corridor Study

Project Principles

Vision Statement

"...to reclaim our downtown as an economically healthy, people-friendly place, enhanced by the movement of pedestrians, bikes, cars, and a diversity of businesses..."

Guiding Principles

- **Circulation:** Streets should provide connectivity and circulation for all modes while maintaining a level of traffic flow consistent with an urban downtown
- Parking: Parking should be available for businesses, residents, visitors, and local deliveries and should support the pedestrian environment and the viability of transit
- Travel Choices: Facilities and services should be designed to support the goal of having transit, walking, bicycling, and carpooling comprise a significant share of the trips to and from Downtown
- Parks and Open Spaces: Streetscape, parks and open space should create a sense of place, be linked and serve a variety of purposes
- Land Use: Streets should accommodate and encourage the future land use vision
- **Great Streets:** Downtown streets should contribute to and reinforce this area as a destination and the heart of Downtown by creating economically vibrant and pedestrian supportive streets
- Cleveland Street: Cleveland Street should be a traditional "Main Street" promenade
- Railroad Right-of-Way: Any design should take full advantage of this asset, including high capacity transit, non motorized trail and other opportunities





A Larger Effort for Coastal Mobility & Livability

The RCVS is the central component of the broader Coastal Mobility and Livability Study (CMLS), a City-sponsored visioning process—partially funded by the California Department of Transportation (Caltrans)—that invites residents, businesses, and other community members to create a new, integrated vision for infrastructure, mobility, and quality of life in the coastal corridor.

The *CMLS* incorporates three complementary studies:

- → RCVS
- → Active Transportation Plan (ATP)
- → Coastal Business Districts Parking Study

By linking these studies together, the *CMLS* creates efficiencies in project schedules and outreach activities, and ensures vital integration among the complementary planning efforts.

Guiding Policies

At the study's kickoff, the project team developed the following policies to guide the study and inform its technical and engagement activities:

- → Increase East-West Connections: Improve access across the rail corridor to beaches, schools, and commercial areas.
- Improve Pedestrian & Bicycle Facilities: Enhance the safety and desirability of these modes through facility design that provides separation from automobiles.
- Provide Adequate Parking: Ensure sufficient parking to enable access to the coast, Encinitas COASTER Station, and commercial areas.
- Balance Mobility Improvements with Desired Community Character: Focus on mobility improvements that minimize noise, respect community character (Figure 2), and preserve open space as much as possible.
- Promote Health & Safety: Create an environment where users of all ages and physical abilities can enjoy the coastal rail corridor.





Figure 2: At left, Old Encinitas, the city's historic center, exemplifies its unique community character. At right, the "Cardiff Kook" statue represents local surfing culture. (Wikimedia Commons; Flickr)

2 February 14, 2018



Guiding Principles

Overall Project

- Engage the community and respect neighborhoods
- Recognize each corridor's role in regional mobility and local mobility access
- Coordinate with state, regional entities, and neighboring cities to identify mutually beneficial solutions
- Create equitable corridors that provide safe and inviting travel for all people, regardless of mode, age, or ability

SR 522

- Address safety for all modes
- Complete BAT lanes and sidewalks to support both regional BRT and local access
- Minimize impacts on neighboring properties (e.g. right-of-way, access, noise, visibility)
- Improve non-motorized access to transit and crossing opportunities to enhance local access
- Create a corridor identity/character and enhance the natural environment
- Be a leader in identifying innovative solutions, particularly at the Bothell Way/145th Street intersection

SR 104

- Address safety for all modes
- Maintain the corridor's unique identity and natural landscape
- Take a phased approach that provides benefits over time
- Consider draw on city's financial resources in selecting design solutions; as well as positioning improvements well for regional, state and federal investment
- Protect natural environment and encourage low impact design approaches
- Plan corridor to discourage neighborhood cut-through traffic
- Minimize impacts on neighboring properties (e.g. right-of-way, access, noise, visibility)

The following goals are proposed to help shape Chelan County's Transportation Future

PROJECT GOALS

Maintain what we have







Supports land use



Environmental stewardship





Five Key Strategies

The centerpiece of this framework approach is a set of five strategies that are embedded both in the vision narrative and throughout the TMP Document. Each strategy describes the core activities needed to achieve the desired outcomes. The dashboard measures will be used to evaluate progress on these strategies over time and will be explained in detail in Chapter 3. These five strategies provide the basis for the identification of projects and programs to be completed by 2030. It is important to remember that implementation activities needed to achieve each strategy will be guided by the sustainability principles of safety, maintenance, environmental stewardship and economic vitality. The five key strategies are:

Prepare for Light Rail

This means increasing bus transit ridership to build the market for future light rail, building the infrastructure needed to support light rail in advance of its arrival, and encouraging transit-oriented development in areas surrounding future rail stations.

Ensure Strong Support for Urban Centers

The completion of a well-designed network of streets and paths combined with a managed parking strategy will establish the transportation system needed to support the urban environment envisioned for both urban centers -Overlake and Downtown. This includes appropriately scaled streets, wide sidewalks, on-street parking, shared parking, reasonable access for delivery vehicles, interesting design features, bike facilities, and a network of walking paths.

Improve Travel Choices and Mobility

This strategy calls for completing Redmond's networks for driving, bicycling, walking, bus transit, light rail, and freight movement. Managing transportation demand, network completion and careful integration of transit-oriented land use with transportation infrastructure will increase overall mobility options and support needed shifts in mode share.

Increase Neighborhood **Connections**

This strategy seeks to ensure that Redmond's neighborhoods are connected to each other and are also internally well-connected by all modes of travel. Particular emphasis will be placed on improving modal corridors, providing safe local streets and safe, convenient walking and bicycling connections.

Enhance Freight Mobility

This strategy focuses on direct and efficient delivery of goods and services within the city as well as continued vitality within the freight warehousing and distribution facilities sector.







City of Tacoma TRANSPORTATION MASTER PLAN

Tacoma is a **sustainable** community with many diverse residents, businesses, and visitors who have various transportation priorities. The City is **strategic** in how it plans its transportation system with an emphasis on carrying the people and goods that foster Tacoma's culture, character, and competitiveness. The transportation system offers **multimodal** travel options that provide safe **access** for all users and neighborhoods, encourage **healthy living**, and protect the **environment**.

This vision is supported by six key goals, which provide guidance for the priorities and recommendations embodied in this plan:

Being a Partner

lacoma

Proactively **develop partnerships** to best serve all users of the regional transportation system.



Protecting Community

Protect natural, as well as neighborhood, assets to create and connect places where people can live, work, and play in a safe and healthy environment.



Providing Mobility for All

Prioritize the movement of people and goods via modes that have the least environmental impact and greatest contribution to livability in order to build a balanced transportation network that provides mobility options, accessibility, equity, and economic vitality for all.







Striving for Fiscal/ Environmental/ Social Sustainability

Design an environmentally and fiscally sustainable transportation system that serves its users through strategic planning efforts, funding, and projects.



Leveraging Programs/Strategies

Develop and implement transportation demand management strategies and programs that contribute to the overall effectiveness of the multimodal transportation system.



Linking to Land Use

Build a transportation network that reinforces Tacoma's land use vision, the region's Vision 2040, and the Growth Management Act.



Potential Project & Scenario Evaluation



1	Metric Description	Ranking			
oblicdomalinpicitures net	Improves or eliminates a congestion choke point to LOS standard under current or future conditions	4 = Solves auto LOS definciency 2 = Improves auto operations but does not eliminate LOS deficiency 0 = Does not improve LOS deficiency or no LOS deficiency in project vicinity			
The system should be efficient, maximizing its capacity by synchronizing traffic signals, staggering work and school schedules, and encouraging transit.	Project will have a positive impact on many users	2 = Impacts a high number of users 1 = Impacts a medium number of users 0 = Impacts a low number of users			
Redmond SAMMANISH SAMMANISH SAMMANISH	Improves connection to the regional transportation system (i.e., transit, trails, 190 and SR202)	2 = Yes 0 = No			
Regional destinations should be easier	Encourages transit travel	$ 2 = Infrastructure \ or \ access \ to \ transit \ improvement \ within \ 1/4 \ mile \ proximity $ $ 1 = Infrastructure \ or \ access \ to \ transit \ improvement \ within \ 1/2 \ mile \ proximity $ $ 0 = No \ transit \ improvement $			
to access, with more transit and less congestion on commute routes.	Coordination with regional transit	2 = Coordinates with regional transportation 0 = Does not coordinate with regional transportation			
3 III	Reduces distance between origins and destinations	2 = For all modes 1 = For bike and ped only 0 = Does not reduce distance of trips			
	Encourages pedestrian travel	2 = Exclusive facility (e.g., sidewalk, trail, RRFB/enhanced crosswalk) 1 = Shared facility (e.g., sidewalk w/o buffer or one side, non-enhanced crosswalk, wayfinding, ADA improvements) 0 = Other			
It should be easier to get places on foot, by bike or by car, with connected streets and trails, and improved bike connections.	Encourages bike travel	2 = Exclusive facility (e.g., buffered sidewalk, trail, separated bike lane, RRFB/enhanced crosswalk) 1 = Shared facility (e.g., sidewalk w/o buffer or one side, bike lane, sharrow, non-enhanced crosswalk, wayfinding) 0 = Other			
uno Angelo	Project is feasible and achievable	2 = Under City control, can be done quickly (within 6 years) 1 = May require some coordination, could take 7-20 years to implement 0 = May take more than 20 years to implement, or the City is not in control			
	Project's costs are aligned with City budget constraints	2 = High (project is <\$100K) 1 = Medium (project is between \$100K and \$1M) 0 = Low (project is >\$1M)			
Transportation system management should be fiscally sustainable,	Project is a strong match for grant opportunities or outside funding sources	2 = Yes 0 = No			
controlling investment costs, finding grants, and increasing local ability to pay.	On-going maintenance costs	2 = Project will reduce ongoing maintenance (i.e., replacement of signal with roundabout, reduction in paved surface) 1 = Project addresses near-term maintenance need (street overlay) 0 = Project will increase maintenance costs			
seed.	Addresses location with a history of injury/fatal collisions	2 = Serious Injury/fatal collision 1 = Not serious injury collision 0 = No collision			
	Addresses location with a history of bike/ped injury collisions	2 = Serious Bike/Ped Injury 1 = Not serious bike/ped collision 0 = No bike/ped collision			
Transportation should be safe and welcoming, with better street crossings, calmed traffic to slow speeds, and increased traffic enforcement.	Fixes an identified sight distance issue or identified modal conflict point	2 = Yes 0 = No			
The rights of way and trails should	Supports beautification and sustainability (e.g., adds vegetation to reduce heat island effect, reduces street width, utilizes permeable surfaces, encourages mode shifts, etc.)	2 = Increases vegetation, reduces street width, and/or utilizes permeable surfaces/other stormwater treatments 1 = Encourages mode shift, but doesn't make other sustainability improvements 0 = Does not include sustainability improvements			
look great, enhancing the character that makes Sammamish unique.	Project enhances street character	2 = Yes 0 = No			



WSDOT PRACTICAL SOLUTIONS OVERVIEW

What is Practical Solutions?

WSDOT's Practical Solutions is a project delivery approach that aims to identify and solve problems as quickly and inexpensively as possible. This approach emphasizes a performance-based, data-driven decision-making process with early involvement from stakeholders and the community atlarge. A Practical Solution's approach considers the following when developing project alternatives:

- Lowest life-cycle cost to preserve the system in a state of good repair;
- Support Target Zero goal of zero traffic fatalities and injuries by 2030;
- Transportation system management including ITS technology and managed lanes;
- Providing mobility via other travel modes to increase person capacity of the system; and,
- Travel demand management strategies to reduce the demand for travel via personal vehicles.

How are we applying Practical Solutions?

A) Informing the Process for this Project:

- 1. Identify baseline and contextual needs
 - Performance based approach focused on addressing performance gaps and cost effective solutions
- 2. Apply a practical set of solutions (low cost, high value, capital investments as last option)
 - Operational or demand management startegies are identified first, with capital projects as a last resorts
- 3. Engage the community throughout
 - Collaborating and getting input from key stakeholders early and throughout the project development process

B) Evaluating Solutions:

Projects will be developed based on adherence to Project Guiding Principles then evaluated through a Practical Solutions lens using the Mobility Performance Framework.



Mobility Performance Framework:

- Supporting WSDOT's Practical Solutions approach
- Mobility measures that move past using only speed and delay
- Mobility measures that identify multimodal transportation problems and opportunities
- Practical Solutions is a performance-based approach to transportation decision-making
- Six Transportation System Policy Goals (RCW 47.04.280)
 - o Economic Vitality stimulate and enhance the movement of people and goods
 - o Preservation preserve prior investments in transportation systems and services
 - Safety provide for and improve safety and security
 - o Mobility improve predictable mobility, congestion relief
 - Environment investments that promote energy conservation
 - Stewardship continuously improve the quality, effectiveness and efficiency of the transportation system
- Defines metrics of evaluation for Planning Level Studies

US 2 Upper Wenatchee Valley Transportation Study Project Advisory Committee Meeting #1

February 27, 2019













Meeting Agenda

- Project Advisory Committee Charter
- Project Overview
- Balancing User Needs
- Corridor Vision & Guiding Principles
- Next Steps & Meetings





Our Charter

- Rules of the Road
 - Purpose
 - Guidelines for Working Together
 - Roles
 - Expectations





What is Your Role?

- Project Advisory Committee Will:
 - Help Make Sure Voices are Heard
 - Serve as Sounding Board for Project Decisions
- Today:
 - Draft Guiding Principles
 - Inform Corridor Vision



The Project

- Study Area: US 2 from Coles Corner to Cashmere
- Goal: Improve safety, access, and mobility for all modes of travel on the US 2 corridor.
- Unique Challenges:
 - Balancing needs of local and regional traffic
 - Accommodating special events in Leavenworth
 - Limited connections due to rural nature and topography



The Project

- **Results**: Toolbox of strategies to improve safety and mobility on US 2.
 - Short, Medium, and Long-Term Solutions
 - Temporary or Permanent
 - Identified based on adherence to Guiding Principles
 - Evaluated using WSDOT's Practical Solutions Approach



Segment 1 - Coles Corner to Icicle Road

- 14 Miles from Coles Corner to Icicle Road
- Opportunities
 - Lower Volumes Relative to Other Segments
 - Alternate Route for Regional Travel to from Seattle to Leavenworth
- Constraints
 - Narrow Without Consistently Paved Shoulders





Segment 1 - Coles Corner to Icicle Road

- Generally Two-Lanes
 - Climbing Lanes Provide Some Three-Lane Sections
 - Paved Shoulders in Sections



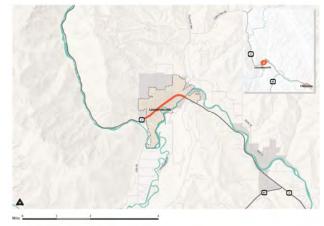


Source: Google Earth, 2019



Segment 2 - Leavenworth

- 1.5 Miles from Icicle Road to E. Leavenworth Road
- Opportunities:
 - Improve Experience for All Users
 - Better Leverage Parallel Facilities
- Constraints:
 - High Interaction Between Modes
 - Multi-Modal Safety
 - Vehicle Delay

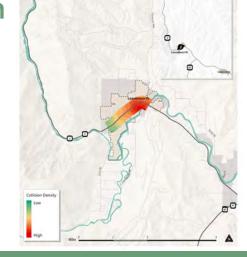




Segment 2 – Leavenworth

- Roadway Cross-Section Features:
 - Two-Way Left-Turn Lane
 - Street Parking on One Side
- Bus Stops & Crosswalks





Source: Google Earth, 2019



Segment 3: East of Leavenworth to US 97

- 4 Miles from E. Leavenworth Road to US 97
- Opportunities:
 - Less Constrained Geography
 - Served by Transit
- Constraints:
 - Heavy Queues During Events and Summer
 - Emergency Access
 - Provides Direct Access for Local Businesses

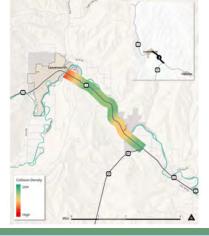




Segment 3: East of Leavenworth to US 97

- Two-Lane Road
 - Paved Shoulders
 - Two-Way Left-Turn Lane where Access to Businesses is Provided







Segment 4: US 97 to Cashmere

- 6.5 Miles from US 97 to Aplets Way (Cashmere)
- Opportunities
 - More Safety Features
 - Local Access Provided by Frontage Roads
- Constraints
 - Heavy Traffic Traveling To and From Wenatchee

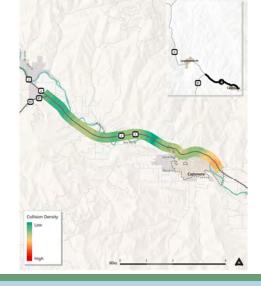




Segment 4: US 97 to Cashmere

- Four Lane Road
 - Median Barrier
 - Guardrails in Sections
 - Most Access Occurs at Intersections





US 2 Upper Wenatchee Valley
IRANSPORTATION STUDY

Meeting Agenda

- Project Advisory Committee Charter
- Project Overview
- Balancing User Needs



- Corridor Vision & Guiding Principles
- Next Steps & Meetings





Balancing User Needs

- Goal: To understand priorities for modes along the corridor.
- How do we accommodate modes in each segment?
- Rank All Modes for Each Section





Meeting Agenda

- Project Advisory Committee Charter
- Project Overview
- Balancing User Needs
- Corridor Vision & Guiding Principles
- Next Steps & Meetings





Next Steps

- March 2019
 - Online Component Live Late March
- April 2019
 - Existing Planning Context
 - Online Public Engagement
 - Next PAC Meeting







Project Advisory Committee Meeting #1

Wednesday, February 27, 2019 11:30 AM – 1:30 PM

AGENDA ITEM #1: WELCOME & INTRODUCTIONS

In-Person participants

- Penny Mabie, Envirolssues
- Nancy Smith, Leavenworth Chamber of Commerce
- Duane Goehner, Citizen, Friends of Leavenworth
- Chantell Steiner, City Administrator
- Craig Christiansen, Independent Warehouse Inc.
- Chief Kelly O'Brien, Chelan County Fire District #3
- Lauren Loebsack, Link Transit
- Kendra Breiland, Fehr & Peers
- Kara Hall, Fehr & Peers
- Jeff Wilkens, Chelan-Douglas Transportation Council
- Scott Bradshaw, Leavenworth Planning Commission
- Sergeant Jason Reinfeld, Chelan County Sheriff
- Nick Manzaro, WSDOT
- Paula Cox, Chelan County

In-person observing

- Bianca Popescu, Fehr & Peers
- George Mazur, WSDOT
- Lisa Popoff, WSDOT

On the phone

- Jim Mahugh, WSDOT
- Richard Warren, WSDOT

Penny reviewed the purpose of the meeting:

- Provide an overview of the project
- Inform stakeholders about the process
- Solicit input on transportation priorities along the corridor

- Solicit input on a shared vision for the plan
- Help form the development of the plan.
- Will be meeting five times until November.
- Will receive materials and will need to do work after meetings.
- The PAC was asked to communicate with their constituents and get feedback

AGENDA ITEM #2 - PAC CHARTER

Penny noted the charter serves as guidelines for how the team and the PAC will work together. She reviewed the draft.

- Ground rules to be productive
 - o Start and end on time
 - o Turn off phone
 - Your responsibility to ask questions when you don't understand
 - o Listen respectfully and share air time
- Team will provide materials five days ahead of PAC meetings
- Intent is to make sure voices are heard

Question from PAC: Is there an expectation that PAC comments are being asked for within a five day turnaround? Response: No, if PAC comments are requested outside of meetings, a set comment period will be established.

AGENDA ITEM #2 - PROJECT OVERVIEW

- Solutions will be based on guiding principals
- Divided the corridor into four different segments with associated challenges and opportunities

Segment 1 – Coles Corner to Icicle Creek - Narrow, but low volumes and lowest collision density.

Segment 2 – Leavenworth - There is an opportunity to improve experience for all users, and parallel facilities, high interaction between modes, and multimodal safety is important. Jeff noted local accessibility can also be talked about

Segment 3 - East of Leavenworth to US 97 - Less constrained geography, served by transit, heavy queues seen during events and summer months, local access to business is challenging

Segment 4 – US 97 to Cashmere - Local access frontage roads, heavy traffic, low access (at intersections only)

AGENDA ITEM #3 - BALANCING USER NEEDS

The goal of this agenda item is to understand PAC member priorities as they pertain to each segment. An activity was conducted in which each PAC member used dots to signify user priorities for each segment and whether users (local, regional, bicyclists, pedestrians, transit, freight and others): 1) must

be accommodated on US2, 2) must be accommodated either on US 2 or on a parallel route in the segment, or 3) do not need accommodation. Following the exercise, a debrief discussion was held.

• Segment 1 discussion:

- Must accommodate bicycles (comment from CDTC) WSDOT is working on nationwide bike touring routes, and Steven's Pass is one of them
- Parallel routes stickers bicycle, pedestrians, parking (CDTC and WSDOT comment lots
 of recreational demand for parking along this area must be accommodated on
 highway or parallel routes if they exist). Regional (comment from CDTC an idea was
 the future of a Leavenworth bypass if Chumstick is improved. In this scenario, County
 would give it to WSDOT.)
- o Transit, pedestrian, bike, freight stickers were all under do not need to accommodate.
- Bicycle safety concerns, so provide alternate routes (comment from Leavenworth Chamber of Commerce).
- o Freight is not as common on US 2, but agriculture needs are important.
- Regarding someone's priority to potentially put freight on parallel routes it was because what's existing is not conducive to trucks.
- A question from the group: how aspirational is this exercise? Answer: this could guide future policy, i.e. bicycles in Tumwater Canyon.
- There is a need to prioritize pedestrians in the canyon for pedestrians who cross and park far from where they go climbing. This corridor must accommodate crossing when accessing nature.

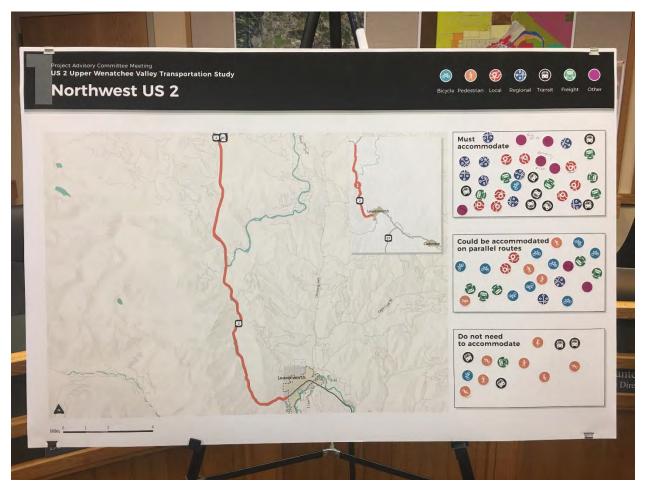


Figure 1 - Segment 1, Coles Corner to Icicle Creek

- Segment 2 discussion:
 - o No stickers on "do not need to accommodate"
 - Regional is split between must accommodate and parallel routes
 - Parallel: segregate traffic that needs to get through or around Leavenworth
 - Some people don't stop in Leavenworth because it's too busy. If there were alternate routes people may do more business (comment from Friends of Leavenworth). Undefined of where the route would be, could be a tunnel.
 - Bicycles why on US 2? It's critical for residents to cross the highway, park in bicycle racks. They're already there, there is demand for cyclists so need to make sure it's safe. US 2 acts as a main street.
 - o WSDOT generally wants regional trips on highway and local trips on local streets.
 - Other concerns emergency access must be accommodated
 - o Parking we are accommodating parking on the highway, is that the best use for US 2?
 - o Pedestrians stickers are all in "must accommodate on US 2"
 - o Freight stickers evenly split on "parallel routes" and "must accommodate on US 2".
 - o City's perspective was to remove regional and transit off of US 2 to clear corridor.
 - o Long distance freight has different needs than localized freight.

- Transit Link explored taking Route 22 off US 2, but local access streets are not navigable for commuter buses. Additionally, all ridership is on US 2. Amount of investment in transit means that Link will not pull buses from US 2. Shuttle daily through town may only run at peak hour west from a stop at the east side of Leavenworth. Peak impacts on the highway are also peak impacts for schools on local roads, so buses would still be impacted on local roads.
- o It may be a good idea to take more local trips off the highway
- o The Planning Commission has developed some ideas on how to get around Leavenworth by roads on the outside of the City (from City of Leavenworth).
- o Ideas put into a plan will help us get money for ambitious ideas.
- Extend the segment to City limits

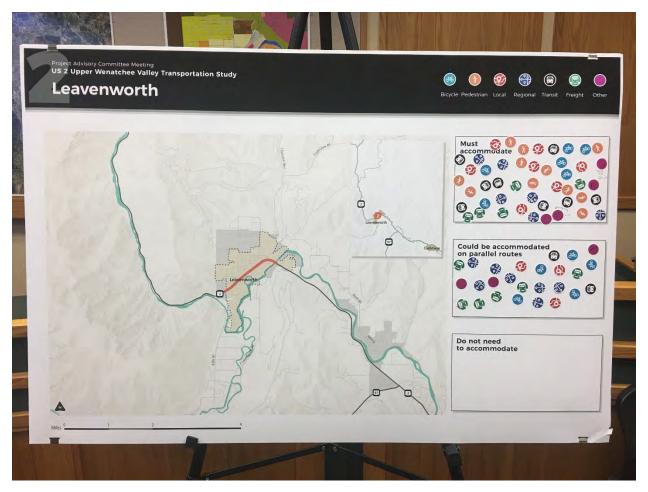


Figure 2 - Leavenworth

Segment 3 discussion:

- Pedestrians do not need to be accommodated because there are not many trip attractors or producers. There is confusion because the segment covers Safeway area where there are pedestrian needs
- Cut the segment at City limits
- o From a planning perspective, look at the area as just past Safeway

- o Transit
- o Parking room for satellite parking or tour bus parking along this corridor.
- Local stickers are mostly "must accommodate", because broader community of Leavenworth through to Peshastin (schools) needs to be connected
- Bicyclists onto parallel routes. Regional bike and pedestrian plan stops at Cashmere.
 There is already a fairly good network on the side of US 2 for bicyclists.

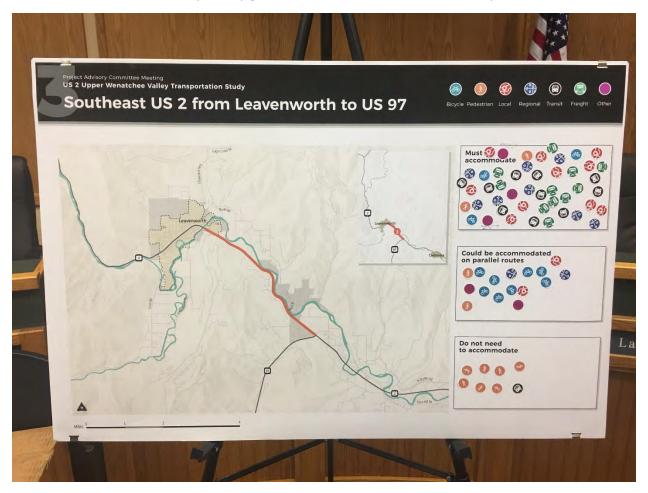


Figure 3- Southeast US 2 from Leavenworth to US 97

- Segment 4 discussion:
 - o Keep the pedestrians off the road
 - Don't need to accommodate bicycles because there is a good parallel route called "the Fruit Loop"

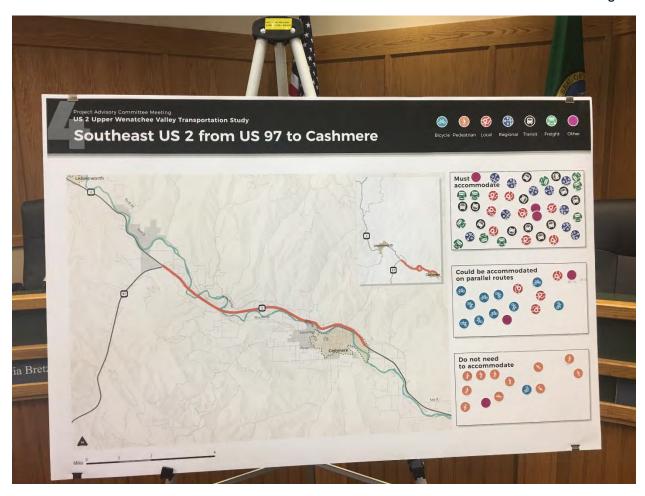


Figure 4- Southeast US 2 from US 97 to Cashmere

AGENDA ITEM #4 - CORRIDOR VISION & GUIDING PRINCIPLES

The purpose of the vision and guiding principles will be to help determine how to choose investments. The PAC members were asked to jot down their vision for the corridor and then guiding principles were brainstormed.

• Sharing from PAC member's vision exercise. What should the corridor vision and guiding principles be?

Vision:

- Moving multimodal traffic effectively and safely through an economic and socially diverse area using a holistic approach
- o Find creative ways to meet the transportation needs within a growing economy and constraints of limited funding

Guiding principles brainstorm:

- o Solving the Leavenworth Effect
- o Pedestrian safety while thinking about traffic flow

- o Providing access to residents of their town
- o Parking availability for residents, workers, visitors
- o Improvements for alternative modes
- How can the corridor contribute to community character
- Safe and reliable
- Efficient access for emergency services
- o Improve traffic in and out of Leavenworth
- o Improve traffic at events and peak season
- Safety
- o Improve multimodal connections
- o What would be the impact on how Leavenworth develops or evolves
- Develop a coordinated plan that supports transit that enhance that is safe, useful for users and supportive for tourists travel
- o Smooth traffic flow throughout
- o Recognize agricultural users and needs (subareas 3 and 4)
- o Reducing traffic backlog in subarea 3
- Safety access and mobility of US 2, alternate routes if possible, segregating visitors going directly through town and just passing through
- Look at data and get better sense of how we can improve mobility
- o Improve public safety, esp. Coles Corner to US 97 interchange
- o Improve first responder response times within the corridor
- o Sync crosswalk with signal lights in Leavenworth to assist the vehicles passing through
- Safe pedestrian crossings
- Successful ingress and egress to town of Leavenworth
- Safe and connected pedestrian and bicycle routes on and off the highway
- o Getting a better sense of who is using the corridors, not just passing through
- o Parking

High level summary of PAC member's corridor vision and guiding principles:

- Multimodal safety
- Smooth and improved traffic flow
- o Respond to growth of person trips, accommodate travel time reliability
- o Emergency response
- Local accessibility
- Holistic approach
- o Identify solutions that consider seasonality (fixing it or managing expectations?)
- o Tourism
- o Agriculture
- Multimodal accommodation coordinated plan
- Sustainability

Discussion:

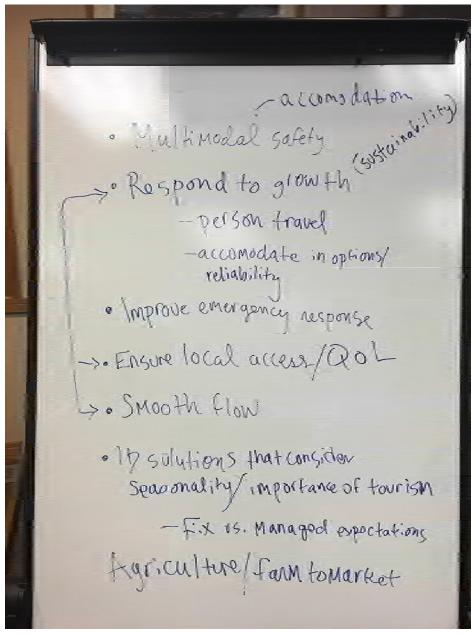
 Seasonality is what makes this a unique corridor – weekends – Thursday afternoon to Monday, summer, events

- o Fehr and Peers discussed how Streetlight data is being incorporated into the project to better understand trips and road usage
- Add something about sustainability ability to preserve and continue to do what we're doing, or is the solution enduring (as the response to growth)
- o Quality of life is an important principle
- o Kendra noted the team will be creating metrics for each of the solutions
- o Just because there aren't any bicyclists now, "if we build it they will come"
- Talk about parallel routes are they fiscally sustainable?

AGENDA ITEM #5: NEXT STEPS

- Existing planning context memorandum March 2019
- Online public engagement late March
- Sharing our existing planning context April 2019
- Next PAC meeting in April 2019 tentatively April 17
- Richard and Jim from Olympia comments: "Sounds like the group is on the right track."

AGENDA ITEM #4 - CORRIDOR VISION & GUIDING PRINCIPLES PHOTOS



Project Advisory Committee Meeting #2

April 27, 2019



PROJECT ADVISORY COMMITTEE MEETING

Wednesday, April 17, 2019 12:00 PM - 2:00 PM

AGENDA

Purpose of the Meeting:

Topic	Facilitator	Time		
1. Welcome	Penny Mabie	5 min		
2. Recap & Findings	Kara Hall/Bianca Popescu/ Penny Mabie	25 min		
3. Project Evaluation Criteria Exercise & Report Back	Penny Mabie/Kendra Breiland	50 min		
 Next Steps & Project Overview 	Penny Mabie/Kara Hall	20 min		
5. PAC Member Interviews	Penny Mabie	20 min		











US 2 Upper Wenatchee Valley Corridor Transportation Study Draft Project Evaluation Criteria

Number	Guiding Principles	Metric Description	Ranking
Number	Reliable. Locals, regional commuters,	1.1: Improves corridor travel time under current or future conditions.	4= Provides a major relief in corridor delay during peak usage periods (summer weekend and events) 2= Provides relief in corridor delay during some peak times (but not all) 0= Does not improve vehicle delay on corridor
1	freight, and emergency responders have options to maintain a reliable travel time between key destinations.	1.2: Improves emergency response times.	4= Yes 0= No
		1.3: Improves transportation connections in the region.	4= Major Connection (Serves large number of users or multiple modes 2= Minor Connection (Serves primarily local trips or only one mode of travel) 0= No
2	Safe & Complete. The corridor offers appropriate multimodal infrastructure to meet users' needs and enhance safety.	2.1: Addresses location with a history of injury/fatal collisions.	6= Serious Injury/fatal collision 3= Not serious injury collision 0= No collision
2		2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.	6= Yes 0= No
3	Vibrant. Study recommendations support the Leavenworth's tourism industry and growing seasonal usage of the corridor.	3.1: Provides for a unique and welcoming travel experience.	6= Major amenity or enhancement 3= Minor amenity or enhancement 0= None
		3.2: Project encourages more efficient use of the corridor, in terms of the times when people travel, the modes they use, and how vehicles are stored.	6= Project encourages shifting of trips by mode, to other peak times and improves parking management 0= No
4	Realistic. Study recommendations are practical, fundable and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from seasonal and special event travel.	4.1: Project is a strong match for grant opportunities or outside funding sources.	6= Yes 0= No
		4.2: Project costs are aligned with budget constraints.	6= Low Cost Improvement (\$0-100,000) 3= Moderate improvement cost (\$100,000-500,000) 0= High cost (\$500,000+)
5	Supported. Stakeholders and the community will be engaged to identify mutually beneficial solutions.	5.1: Receives support from the community and stakeholders throughout this study.	12= High 6= Median 0= Low

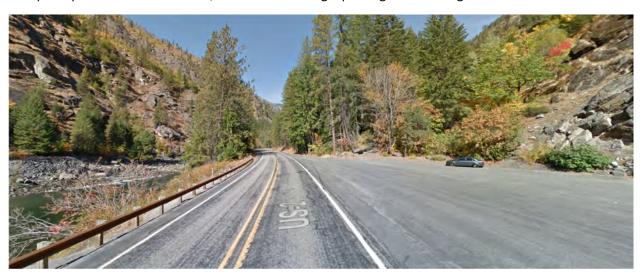
Project #1: Upgrade Pull-Outs Paired with Enhanced Pedestrian Crossings

PROJECT DESCRIPTION

From Coles Corner to Leavenworth there is a need to add or upgrade pullouts for visitors to access hiking, rock climbing or to stop and take a photo. Some locations that currently have demand for pull-out upgrades include:

- Old Pipeline Bed Trailhead has a small parking lot and pullout but no signage
- Castle Rock Trailhead (rock climbing) has a small pullout
- Hatchery Creek Trailhead
- Tumwater Campground
- Swiftwater Picnic area no signage
- Chiwaukum Creek Trailhead
- The Alps Fudge and Candy in need of a crossing for their spillover parking on the other side of the highway
- Additional viewpoints along the corridor

There is also a need for improved wayfinding and signage, to let visitors know where upcoming viewpoint pullouts and hikes exist, and to reduce illegal parking and crossing.



Castle Rock Trailhead (Google Maps, 2018)



Pedestrian crossing



Old Pipeline Bed Trailhead (Google Maps, 2018)

PROJECT BENEFITS

This project would provide safety benefits for vehicles turning and slowing down to stop in a constrained environment, as well as pedestrian safety and comfort improvements for US 2 crossings. Wayfinding and signage will also improve safety and reduce traffic impacts.

POTENTIAL CHALLENGES TO IMPLEMENTATION

This segment of US 2 has a narrow geographically constrained cross-section. There are also vertical and horizonal curves that limit sight distance for both pedestrians and vehicles. However, a demand exists for pedestrian facilities driven by travelers stopping in scenic locations and wanting to access both sides of the corridor, as shown in the photo below.



Pedestrian crossing illegally (Google Maps, 2018)

PROJECT SCORING

To assist in project scoring, the following metrics are given rankings or further described below.

- 2.1: Addresses location with a history of injury/fatal collisions.
 - o 0 = No collisions have occurred for pedestrians along this segment.
- 2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.
 - 6 = Yes, fixes identified modal conflict point by increasing the frequency of pedestrian crossings.
- 4.1: Project is a strong match for grant opportunities or outside funding sources.
 - 6 = Yes
- 4.2: Project costs are aligned with budget constraints.
 - 6 = Cost is under \$100,000
- 5.1: Receives support from the community and stakeholders throughout this study.
 - o This will be scored at a further stage of the study, after public engagement.

Project #2: Grade Separated Pedestrian Crossings

PROJECT DESCRIPTION

Build one or multiple bridges for pedestrian crossings over US 2 throughout Leavenworth, at up to three locations.



Pedestrian bridge at Mount Baker, Seattle, Washington

PROJECT BENEFITS

Due to the land use surrounding US 2 in this area, the highway splits the residential uses in the north from the commercial uses in the south. This results in frequent pedestrian demand to cross US 2, which currently backs up traffic on the highway. This project will ensure pedestrians can easily cross US 2 without increasing congestion and provides the opportunity for additional placemaking.

POTENTIAL CHALLENGES TO IMPLEMENTATION

While the cost of a pedestrian bridge is lower than a pedestrian underpass, it is still high. In addition, pedestrian bridges visually alter the landscape, so further study on the bridge's effect on the corridor's unique character is necessary.

PROJECT SCORING

To assist in project scoring, the following metrics are given rankings or further described below.

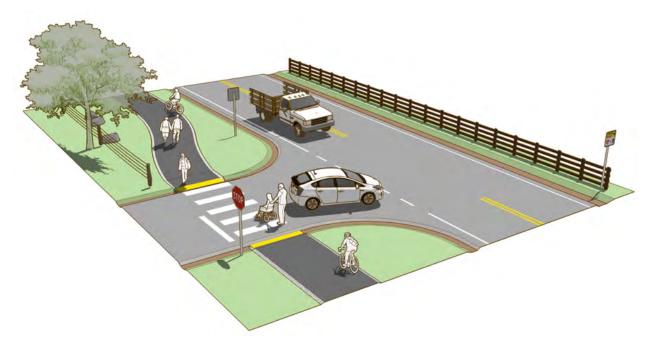
• 2.1: Addresses location with a history of injury/fatal collisions.

- o 6 = Serious injury collisions have occurred for pedestrians along this segment.
- 2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.
 - 6 = Yes, fixes identified modal conflict point by increasing the frequency of pedestrian crossings.
- 4.1: Project is a strong match for grant opportunities or outside funding sources.
 - o 6 = Yes
- 4.2: Project costs are aligned with budget constraints.
 - 0 = Cost is over \$500,000
- 5.1: Receives support from the community and stakeholders throughout this study.
 - o This will be scored at a further stage of the study, after public engagement.

Project #3: Parallel Facilities for All Modes

PROJECT DESCRIPTION

This project is to add a bidirectional shared use path for all modes immediately adjacent to North Road, from Chumstick Highway to Peshastin, as a parallel route pedestrians and bicyclists can choose instead of US 2. Installing a separated shared use path would increase safety and comfort for travelers of all modes, while maintaining the road's rural community character.



A physically separated "Sidepath" from the Small Town and Rural Design Guide

PROJECT BENEFITS

This section of North Road is already designated as a "somewhat comfortable" bicycle route on the Wenatchee Valley Bike Map by the Chelan-Douglas Transportation Council. Currently, US 2 does not accommodate walking and biking due to vehicles speeds and right of way constraints. Designing a bidirectional shared use path parallel to US 2 on North Road would improve the safety and experience of multimodal travel, and meet the current demands for people visiting the corridor.

POTENTIAL CHALLENGES TO IMPLEMENTATION

North Road is just under 4 miles, and a multimodal corridor this long would be expensive to implement. This would require multiple jurisdictions to work together, including Chelan County and local municipalities. Moreover, if a side running path design is selected, road crossings will need to be carefully designed to ensure safety for all.

PROJECT SCORING

To assist in project scoring, the following metrics are given rankings or further described below.

- 2.1: Addresses location with a history of injury/fatal collisions.
 - 6 = Yes, there was a pedestrian collision along the US 2 portion of this segment, and this project would potentially move people off of US 2.
- 2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.
 - 6 = Yes, fixes identified modal conflict point by improving the quality of multimodal amenities.
- 4.1: Project is a strong match for grant opportunities or outside funding sources.
 - o 6 = Yes
- 4.2: Project costs are aligned with budget constraints.
 - o 0 = Cost is over \$500,000
- 5.1: Receives support from the community and stakeholders throughout this study.
 - o This will be scored at a further stage of the study, after public engagement.

Project #4: Bike Share in Leavenworth

PROJECT DESCRIPTION

This project is to incentivize the installation of a dockless bike share system in the City of Leavenworth. This would provide an alternate mode of transportation for visitors and residents to travel around the City, including adding a multimodal connection to the Amtrak Station one mile northeast of the City center.

PROJECT BENEFITS

This project would give people more mobility options around the City of Leavenworth. The bike share would also incentivize more people to take the train



Dockless bike share (Curbed, 2018).

to Leavenworth by offering a last mile connection from the City center to the station.

POTENTIAL CHALLENGES TO IMPLEMENTATION

The City of Leavenworth would need to find creative ways to incentivize and collaborate with dockless bike share companies to set up their business in city limits.

PROJECT SCORING

To assist in project scoring, the following metrics are given rankings or further described below.

- 2.1: Addresses location with a history of injury/fatal collisions.
 - o 0 = No collisions have occurred for people on bicycles in the City of Leavenworth
- 2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.
 - o 0 = No
- 4.1: Project is a strong match for grant opportunities or outside funding sources.
 - o 6 = Yes
- 4.2: Project costs are aligned with budget constraints.
 - 6 = Low cost improvement would be covered by the dockless bike share company.
- 5.1: Receives support from the community and stakeholders throughout this study.
 - o This will be scored at a further stage of the study, after public engagement.

US 2 Upper Wenatchee Valley Corridor Transportation Study Draft Project Evaluation Criteria

Number	Metric Description	Ranking		Projec	t	
		_	1	2	3	
	1.1: Improves corridor travel time under current or future conditions.	 4= Provides a major relief in corridor delay during peak usage periods (summer weekend and events) 2= Provides relief in corridor delay during some peak times (but not all) 0= Does not improve vehicle delay on corridor 				
1	1.2: Improves emergency response times.	4= Yes 0= No				
	1.3: Improves transportation connections in the region.	 4= Major Connection (Serves large number of users or multiple modes) 2= Minor Connection (Serves primarily local trips or only one mode of travel) 0= No 				
2	2.1: Addresses location with a history of injury/fatal collisions.	6= Serious Injury/fatal collision 3= No serious injury collision 0= No collision				
_	2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.	6= Yes 0= No				
3	3.1: Provides for a unique and welcoming travel experience.	6= Major amenity or enhancement 3= Minor amenity or enhancement 0= None				
3	3.2: Project encourages more efficient use of the corridor, in terms of the times when people travel, the modes they use, and how vehicles are stored.	6= Project encourages shifting of trips by mode, to other peak times and improves parking management 0= No				
	4.1: Project is a strong match for grant opportunities or outside funding sources.	6= Yes 0= No				
4	4.2: Project costs are aligned with budget constraints.	6= Low Cost Improvement (\$0-100,000) 3= Moderate improvement cost (\$100,000-500,000) 0= High cost (\$500,000+)				
5	5.1: Receives support from the community and stakeholders throughout this study.	12= High 6= Median 0= Low				
		Project Total				

US 2 Upper Wenatchee Valley Transportation Study Project Advisory Committee Meeting #2

April 17, 2019













Meeting Agenda

- Recap & Findings
- Project Evaluation Criteria Exercise & Report Back
- Next Steps & Project Overview
- PAC Member Interviews





Meeting Agenda

- Recap & Findings
- Project Evaluation Criteria Exercise & Report Back
- Next Steps & Project Overview
- PAC Member Interviews





The Corridor Vision

The US 2 Upper Wenatchee Valley Corridor:

- Provides reliable transportation options for all means of travel;
- Accommodates emergency access, local trips, US 2 highway travelers to and from other places, and freight movement;
- Enhances the region's unique character.





The Guiding Principles

Reliable.

Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.

Safe & Complete.

The corridor offers appropriate multimodal infrastructure to meet users' needs and enhance safety.

Vibrant.

Study
recommendations
support
Leavenworth's
tourism industry
and growing
seasonal usage of
the corridor.

Realistic.

Study
recommendations are
practical, fundable
and implementable
within a reasonable
timeframe and include
creative solutions to
better manage traffic
impacts from seasonal
and special event
travel.

Supported.

Stakeholders and the community will be engaged to identify mutually beneficial solutions.



Planning Context



Land Use context around each segment



Pedestrian/Bike conditions and needs along segment and parallel routes



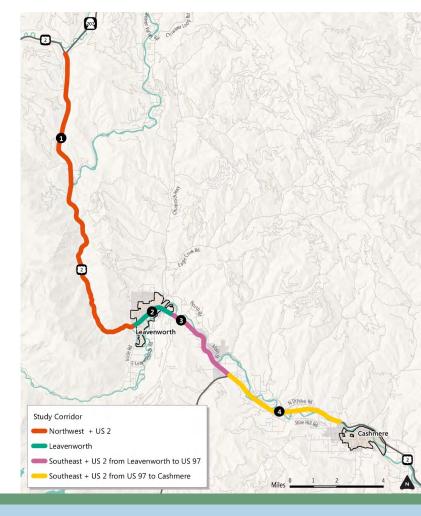
Transit operations and accessibility along the segment.



Vehicle operations, roadway configurations and trends in volume and origin-destination data along the corridor.



Safety collision data from WSDOT, for a three-year period (January 2015 – November 2018)





Segment 1 – Coles Corner to Icicle Road



Land use is geographically constrained



- No accommodation for bicyclists or pedestrians
- Pedestrian demand driven by access to trails and river



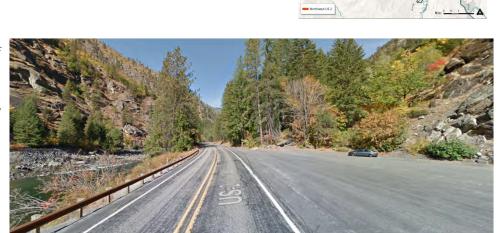
 Currently no transit operates along this segment of the corridor



- Traffic volumes are highest on Saturday, especially during the summer
- Limited opportunity for widening due to topography



- Frequent seasonal closures due to avalanches
- Speeding and driver inattention were the leading causes of collisions from 2015 to 2018.



Source: Google Earth, 2019



Segment 2 – Leavenworth



 Land use context is urban/developed with limited projected growth except for planned development at the corner of US 2 and Icicle Road and behind Safeway at the east end.





- Bicycle lanes are provided on US 2.
- Sidewalks are provided on both sides of US 2.
- In some areas, pedestrian crossings are a quarter mile apart.
- In the center of Leavenworth, crossings are provided more frequently, with **only one flashing beacon**.
- The City of Leavenworth plans for more enhanced crossings, including a stop signals and additional flashing beacons





Segment 2 – Leavenworth



- Link Transit operates Route 22 and park and ride lot
- **Dial-A-Ride Transit** operates within Leavenworth on weekdays between 7:30 AM and 5:30 PM.



- The **majority of trips** beginning and ending in Leavenworth on a typical weekday **stay in the Leavenworth area**.
- Areas to the east of Leavenworth, including Wenatchee, make up the majority of remaining origins and destinations.



- Over the last three years, no collisions with bicyclists were reported within the City of Leavenworth.
- All three pedestrian collisions occurred on Front Street.
- The main contributors to collisions on US 2 were driver inattention and following too closely.









Segment 3: East of Leavenworth to US 97



 Rural land use includes agricultural and agricultural tourism uses that have direct access to US 2 and Peshastin Mill Site development area without direct access to US 2



 Bicycle and pedestrian facilities are not provided along US 2.





Route 22 serves five stops along this segment of the corridor and connects to the community of Peshastin.



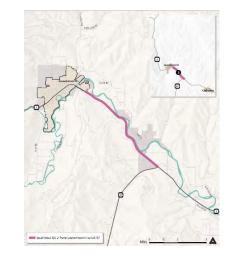


Source: Google Earth, 2019



Segment 3: East of Leavenworth to US 97

- The majority of trips traveling west originate in Wenatchee and areas farther east.
- ADT counts on this segment indicate higher weekend and summer usage
- December is almost as high as the summer peak.
- This segment sees less peaking, given its role a regional commuter route.
- The highest density area for collisions along this segment are where the majority of local access driveways occur.
- Driver inattention and following too closely were the leading contributors to accidents along this segment of the corridor.
- Opportunities to minimize conflicts at local driveway access should be considered.





Source: Google Earth, 2019





Segment 4: US 97 to Cashmere



No major changes to land use expected.



Bicycle and pedestrian facilities not on US 2.



Alternative routes exist on county roads with no pedestrian or bike accommodation but lower traffic and slower vehicle speeds.



Route 22 serves both directions and detours onto local city streets through Cashmere.



 Vehicle capacity along this segment is less constrained.





Speed was the largest contributor to collisions





Source: Google Earth, 2019



Community Engagement

- Online site now live!
- URL: <u>us2upperwenatchee.participate.online</u>
- Please link and share!
- Will be updated at key points and as new information is available



Meeting Agenda

- Recap & Findings
- Project Evaluation Criteria Exercise & Report Back
- Next Steps & Project Overview
- PAC Member Interviews





Draft Project Evaluation Criteria

Numbe	Guiding Principle	Metric Description
	Reliable. Locals, regional commuters, freight, and emergency	1.1 Improves corridor travel time under current or future conditions.
1	responders have options to maintain a reliable travel time	1.2: Improves emergency response times.
	between key destinations.	1.3: Improves transportation connections in the region.
		2.1: Addresses location with a history of injury/fatal collisions.
2	Safe & Complete. The corridor offers appropriate multimodal infrastructure to meet users' needs and enhance safety.	2.2: Fixes an identified sight distance issue or identified modal conflict point, including improving the frequency or quality of pedestrian crossings.
		3.1: Provides for a unique and welcoming travel experience.
3	Vibrant. Study recommendations support the Leavenworth's tourism industry and growing seasonal usage of the corridor.	3.2: Project encourages more efficient use of the corridor, in terms of the times when people travel, the modes they use, and how vehicles are stored.
4	Realistic. Study recommendations are practical, fundable and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from	4.1: Project is a strong match for grant opportunities or outside funding sources.
	seasonal and special event travel.	4.2: Project costs are aligned with budget constraints.
5	Supported. Stakeholders and the community will be engaged to identify mutually beneficial solutions.	5.1: Receives support from the community and stakeholders throughout this study.



Meeting Agenda

- Recap & Findings
- Project Evaluation Criteria Exercise & Report Back
- Next Steps & Project Overview
- PAC Member Interviews





Next Steps

- May 2019
 - Project Team Developing Project List
 - Online Open House
- June 2019
 - Project Evaluation
 - Next PAC Meeting

US 2 Upper Wenatchee Valley Transportation Study

Schedule

Task	Description	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	Planning Context												
2	Corridor Vision						_						
3	Evaluating Options									-			
4	Community Conversation												
5	Final Plan										\Rightarrow		
	PAC Meetings			•		•		•		•			•
	Public Outreach/Events					•		•		•			



Delivery of draft report. The remaining time will be set aside for comments/feedback and revisions to the final plan.



Community Engagement

- Flier April, shareable PDF announcing study and directing to online site
- Folio June/July, more detailed brochure
- Briefings: June/July timeframe
 - Targets under-served users?
- Local outreach early June tabling at Farmers Market
- Community mtg mid-September (postcard & posters)
- Visitor outreach Sept 28 tabling at Autumn Leaf festival



Meeting Agenda

- Recap & Findings
- Project Evaluation Criteria Exercise & Report Back
- Next Steps & Project Overview
- PAC Member Interviews









Project Advisory Committee Meeting #2

Wednesday, April 17, 2019 12:00 PM - 2:00 PM

AGENDA ITEM #1: WELCOME

In-Person Participants

- Penny Maibie, Envirolssues
- Nancy Smith, Leavenworth Chamber of Commerce
- Duane Goehner, Citizen, Friends of Leavenworth
- Joel Walinski, City of Leavenworth
- Craig Christiansen, Independent Warehouse Inc.
- Chief Kelly O'Brien, Chelan County Fire District #3
- Lauren Loebsack, Link Transit
- Kendra Breiland, Fehr & Peers
- Kara Hall, Fehr & Peers
- Bianca Popescu, Fehr & Peers
- Jeff Wilkens, Chelan-Douglas Transportation Council
- Scott Bradshaw, Leavenworth Planning Commission
- Segeant Jason Reinfeld, Chelan County Sheriff
- Nick Manzaro, WSDOT
- Katherin with WSDOT

In-Person observing

- George Mazur, WSDOT
- Lisa Popoff, WSDOT

On the phone

- Jim Mahugh, WSDOT
- Richard Warren, WSDOT

Purpose of the meeting

• Went through agenda and video interview

AGENDA ITEM #2 - RECAP & FINDINGS

- Corridor Vision and Principles exercise
 - Vision and Goals has a functional purpose
- Guiding Principles
 - o Reliable helping maintain a reliable travel time between key destinations
 - o Safe & Complete appropriate multimodal infrastructure to enhance safety
 - Vibrant supporting tourism and growing seasonal usage
 - Realistic come up with projects and recommendations that can be practically implemented
 - Supported process of the project
- Planning context Kendra
- Public Engagement Website Online
 - Website is live 58 users with 65 sessions
 - People are looking at 3.4 pages per session, 3 min and 30 s on average on the site as of this morning
 - o 34% Wenatchee 12% Leavenworth 10% Seattle 39% other places as of this morning
 - Half desktop half mobile
 - Getting to the site: almost half is coming directly from URL, almost half Facebook, 8%
 WSDOT
 - o 38 people have taken the survey so far
 - o Duaine mentions there isn't the amount of data people are looking for
 - Jeff request to do 30 seconds of each video on website if there is something key we want people to see
 - Jeff says the website feels usable
 - Chamber sent it to board and not membership (600 people) Penny asked for a link on Chamber's website
 - o Community should start weighing in on guiding principles (Kendra's comment)

AGENDA ITEM #3 – PROJECT EVALUATION CRITERIA EXERCISE & REPORT BACK

- Talk about capital recommendations at next meeting
- Kendra is orienting us on table and chart
 - Input on number two: use target zero language reduce crash potential instead of enhancing safety – use crash analysis to compare locations
 - 2.1 depends on long term or short term on how to measure
 - To get the federal funding need to meet certain criteria
 - 1.2 maybe should go into the safety category?
 - 2.2 replace the word "quality" with the word "comfort" response from Kendra is that we use pedestrian crossing guidelines
 - Safe should be referencing infrastructure/construction in the guiding principles
 - 1.1 change to "seeks to maintain" travel times don't want to design for peak corridor season. This could be addressed through the rankings
- Report back

Overall:

- Cumbersome certain categories were, some thought it was fine
- Criteria may not address a particular issue on a segment, so it shouldn't be scored
- 2.1 frame for a proactive approach instead of a reactive approach

Report back:

- Difficulty if project wasn't dealing with traffic, to applying criteria to that project (i.e. bike share)
- Felt like the project's impact on the criteria is minimal Kendra's response is some of the projects won't address all of those issues
- 1.3 improves transportation connections in the region needs definitions Joel took that to mean something dif than explained
- May want to consider a halfway point for improves emergency response times
- Criteria 3.2 needs a halfway point
- Project definitions were so broad they couldn't be scored effectively i.e. pedestrian crossings – if don't' know location and have details some times wouldn't work
- Question is who is doing the scoring. Answer is consulting team. We have the ability to look at emphasize certain goals
- With the tweaks that we said it can work well
- Should we weight the principals equally? The Sheriff think the EMS times should be highest, Chamber will want vibrancy to be highest.
- Reliable doesn't always mean improved do we want better travel times? Important to define what you mean. Maybe need reliable and improved. Kendra suggests reliably preforms.
- 1.1, 1.2, 1.3 all say improves, so discount the word reliable when scoring
- Double count between 1.1 and 1.2 (it's okay because inside the same group) should keep things even to ensure no double counting

AGENDA ITEM #4 - NEXT STEPS & PROJECT OVERVIEW

- Develop project list to get to apply this criteria
- Online website "open house" with survey
- Project evaluation in June with next PAC meeting
- Who is generating the list of project?
 - o Workshop a list and engaging with community to narrow down the list
 - o The process is modifiable if projects come up during the process
 - o Make sure the process is open to benefit from public
- Important how it's presented don't just share "list of ideas" ensure people think outside the box and share
- Flier will draw people to the online site
- June/July full brochure with Vision, Guiding Principles and projects being considered, include invite are there other projects? Ensuring we don't give a blank slate
- June/July targeted briefings underserved users and unengaged people. i.e. go to growing community workforce and we go out to that group.
 - Largest employer group in Leavenworth is the hospital with highest potential transit
 ridership have difficult shifts to work with

- 1st or 2nd farmers market to hit locals survey on site
- Community meeting in September will be pushed at draft plan did we get it right approach?
- Transit situation is changing. Park and Ride is opening June 28, with shuttle starting to operate. Adding 8% operating increase in 22 and 6 days of week 8 hours of shuttle service. Board is going to ballot to double transit service all day Saturday and Sunday election is August 6.
- DOT changed the flashing yellow left turns, adding crosswalks changes in the area
- Ensure that this is reflected don't assume transit improvements will happen, they need to be listed as projects because they are part of what's on the table but may not go through
- Add into initial survey what transportation improvements come to your mind
 - Want to ensure that open brainstorming happens for community
 - Open question to be added to the survey action item for Penny
- How to target the visitors? September 28th at the Autumn Leaf Festival
 - o Issue is that that's more of a local festival
 - o Following weekend is 1st weekend of Oktoberfest and the marathon
 - o Electronic e-blast and website and Facebook and Instagram that reaches visitors
 - August or early September Saturday will have more visitors in town than the Autumn Leaf Festival
- WSDOT Twitter and Facebook can share the survey

Project Advisory Committee Meeting #3

June 19, 2019



PROJECT ADVISORY COMMITTEE MEETING

Wednesday, June 19, 2019 11:30 AM - 1:30 PM

AGENDA

Purpose of the Meeting:

Topic	Facilitator	Time
1. Welcome	Penny Mabie	10 min
Public Engagement: What We've Heard so Far	Penny Mabie/Bianca Popescu/Kara Hall	30 min
 Project Evaluation Exercise Report Back 	Penny Mabie/Kara Hall	50 min
4. Project Selection Overview	Kendra Breiland/Kara Hall	15 min
5. Next Steps & Project Overview	Kara Hall	15 min











US 2 Upper Wenatchee Valley Corridor Transportation Study Project Evaluation Criteria

		Troject Evaluation enterna					
Number	Guiding Principles	Metric Description	Ranking				
1	Reliable. Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.	1.1: Improves reliability of corridor travel time under current or future conditions.	 8= Reduces difference in travel times experienced along corridor betwee summer weekends and event times and typical conditions for both summer weekends and events 4= Reduces the difference in travel times between typical conditions and summer weekends or events (but not both) 2= Minor improvement in travel times between typical conditions and/of summer weekends and events as a result of planning or programmatic improvement. 0= Does not improve the difference in travel times on the corridor between summer/event times and typical conditions 				
		1.2: Creates more reliable transportation connections in the region.	 4= Major Connection (Serves large number of users or multiple modes) 2= Minor Connection (Serves primarily local trips or only one mode of travel) 0= No 				
	Safe & Complete. The corridor offers appropriate multimodal infrastructure to meet users' needs and enhance safety.	2.1: Improves emergency response times and access to the corridor.	6= Yes 0= No				
2		2.2: Fixes a known sight distance issue or identified modal conflict point, including improving the frequency or comfort of pedestrian crossings, and access to more complete bicycle and pedestrian facilities along the corridor.	6= Yes 0= No				
3	Vibrant. Study recommendations supporting the region's economy and growing seasonal usage of the corridor.	3.1: Provides for a unique and welcoming travel experience.	6= Major amenity or enhancement 3= Minor amenity or enhancement 0= None				
		3.2: Project encourages more efficient use of the corridor, in terms of the times when people travel, the modes they use, and how vehicles are stored.	6= Project encourages shifting of trips by mode, to other peak times and improves parking management 0= No				
_	Realistic. Study recommendations are practical, fundable and implementable within a reasonable timeframe and include creative solutions to better manage traffic impacts from seasonal and special event travel.	4.1: Project can be completed within available Right-of-Way.	6= No Right-of-Way acquisition required 3= Only minor Right-of-Way acquisition required 0= Significant Right-of-Way acquisition required				
4		4.2: Project costs are aligned with budget constraints.	6= Low Cost Improvement (\$0-400,000) 3= Moderate improvement cost (\$400,000-\$3.5M) 0= High cost (\$3M+)				
5	Supported. Stakeholders and the community will be engaged to identify mutually beneficial solutions.	5.1: Receives support from the community and stakeholders throughout this study.	12= High 6= Medium 0= Low				

US 2 Upper Wenatchee Valley Corridor Transportation Study Project List										
Project #	Project Description	Project Type	Notes							
Segment 1 - Coles Corner to Leavenworth										
1	Affordable seasonal shuttle to Stevens Pass available for skiers and employees.	Planning	Current shuttle is not public transit - \$45/person: http://www.leavenworthshuttle.com/Stevens-Pass.html							
2	Enhance Chumstick Highway to also accommodate freight detours.	Design	Could require significant reconstruction of some portions of roadway							
3	Add signage with wayfinding to designated areas for parking/crossing US 2.	Parking								
4	Upgrade existing pull-outs, or create new pull-outs where demand exists, to include dedicated parking areas and crossing treatments for pedestrians.	Design	Would also want to work with rafting companies/recreational users to ensure optimal use of pull-outs along US 2							
5	6" fog lines or narrower lanes may be effective for speed control and/or increased shoulder size for bikes.	Design	Visually narrowing the roadway causes vehicles to travel at lower speeds; wider shoulders are more comfortable for cyclists							
6	Improve existing shoulders and add shoulders where none exist, such that bicycles could be accommodated on the shoulder as this is identified as a US bike route.	Design	Narrow canyon with environmental concerns (river,native plants). Surrounded by USFS land, so ROW purchase would be a lengthy process if needed.							
7	Improve sight distance in areas where pedestrians are known to cross	Design	Treatments for improving sight distance range in cost and effort from trimming vegetation to reconstructing portions of roadway							
8	No Parking Signs	Design	Preventing parking from specific locations can improve safety and reduce unexpected conflicts for through traffic							
9	No Pedestrian Crossing Signs	Design	Preventing pedestrian crossings at certain locations can improve safety and reduce unexpected conflicts for through traffic							
10	Speed enforcement campaign – high traffic impact timeframes	Programming								
11	High Friction Surface Treatments	Design								
12	Variable Speed Area	Planning	Ability to slow speeds along the corridor in areas with high recreational use and during high demand periods.							
		2 - Leavenworth								
13	Create a cordon surrounding festival areas that autos are prohibited from entering.	Planning	Allow transit, emergency vehicles, golf carts, micro-mobility options							
14	Temporary One-Way System through Leavenworth on US 2, which could shift direction as needed.	Design	ITS enabled signals							
15	Rechannelize US 2 to create a multi-use trail parallel to US 2	Design	Use existing pavement/channelization revision only							
16	Center running Transit/Emergency Only Lanes During Events/High Demand Periods	Design	Use existing pavement/channelization revision only							
17	Grade Separated Pedestrian Crossings – 3 bridges or a pedestrian underpass	Design								
18	Create a direct connection to US 2 from Pine Street to improve local connectivity	Planning	Opportunities to identify other locations to provide more connectivity in Leavenworth.							
19	Create better parallel route capacity: Icicle Road to E Leavenworth Rd (more complete facility)	Planning	Includes improved bicycle and pedestrian options as well as ability to manage route during high demand times.							

US 2 Upper Wenatchee Valley Corridor Transportation Study Project List Project # **Project Description Project Type Notes** Create better parallel route capacity: Chumstick Hwy to North Rd (more Includes improved bicycle and pedestrian options as well as ability to manage 20 Planning route during high demand times. complete facility) Creates a more comfortable pedestrian environment; buffer could consist of a Add sidewalk enhancements with buffer 21 Design planter strip between sidewalk and curb 22 Flagger Training Programming Festival parking at east/west end of Leavenworth – Park & Ride paired with 23 Parking Locations: Park & Ride at Safeway, High School, Fields on west side shuttle or tramway. 24 Reconsider transit service times/headways Planning 25 Transit shuttle service Planning Private/Public Partnership with hotels to increase seat capacity 26 Scooters/bike share – micro-mobility for connections to Amtrak station Planning 27 Neighborhood Electric Vehicles as Modes Planning 28 Remove on-street parking to connect bicycle lane Parking Time limited parking year round in downtown, Phased addition of pay-to-park both on-street and off-street, Seasonal Rates, Active management and 29 Parking Management Parking coordination of available supply, Enforcement as appropriate with implementation of strategies 30 Electronic Counter Systems for Parking tied to Dynamic Wayfinding Parking Parking app 31 Parking Traffic analysis is required to determine operational effectiveness. Single-lane 32 Build roundabouts at each primary intersection Design roundabouts have better safety performance than traffic signals. 33 More/better bike parking Parking Covered, corrals, artful Re-introduce the shuttle train from Wenatchee and Everett into Leavenworth 34 Planning (the old "Snow Train") 35 Car share with thought given to changing curb space management Planning 36 Delivery zone/parking/drop-off Parking Causes traffic signals to change to give transit/emergency the right of way 37 Transit/Emergency Preemption for signals Design through the intersection Bicycle facility south of river 38 Design 39 Daily service on trailways Programming 40 Aerial Tramways integrated with parking strategy Parking Emergency Routes/Staging 41 Programming Enforcement for pedestrian crossings – vehicles at crosswalks, and j-walking 42 Programming between crosswalks. 43 Employee TDM strategies **Programming** Planning 44 Delivery hours/permits

Parking

45

Create combination zone with On-Street Parking or Tour Bus Drop-Off

US 2 Upper Wenatchee Valley Corridor Transportation Study Project List											
Project #	Project Description	Project Type	Notes								
	Segment 3 - Leavenworth to SR 97										
46	Improved parallel facilities for all modes on or near North Road	Planning	Is there an opportunity to use additional ROW around Railroad for more direct bicycle/pedestrian trail?								
47	Spot treatments at local access points	Design	For example, add turn pockets in River Riders/Fruit Stand area								
48	Adaptive management strategies, such as transit on shoulders	Planning									
49	Park & Ride at 97 interchange paired with shuttle	Parking	Would benefit from expanded shoulders to accommodate operations on the shoulder								
50	Pedestrian and bicycle improvements along US 2 based on land use	Design									
51 Improve Peshastin bridge		Design									
52 Snow removal for bus stops		Programming									
53	Aerial tramway	Planning									
54	Improvements for bus stops along US 2, keeping them on the highway	Planning									
55	Enforcement campaign for speed	Programming									
56	Additional red light/warning signs	Planning									
57	High Friction Surface Treatments	Design									
	Segment 4 -	SR 97 to Cashme	ere								
58	Invest in parallel routes for bikes	Design									
59	Route 22 opportunities with W. Cashmere Bridge Project	Planning	Park & Ride? Limit Circulation through Cashmere?								
60	Speed feedback signs	Planning									
61	Enforcement campaign for speed	Programming									
62	Additional red light/warning signs	Planning									
63	High Friction Surface Treatments	Design									

US 2 Upper Wenatchee Valley Transportation Study Project Advisory Committee Meeting #3

June 19, 2019













Meeting Agenda

- Public Engagement: What We've Heard so Far
- Project Evaluation Exercise & Report Back
- Project Selection Overview
- Project Next Steps & Overview





Meeting Agenda

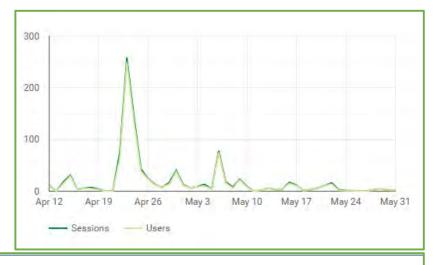
- Public Engagement: What We've Heard so Far
- Project Evaluation Exercise & Report Back
- Project Selection Overview
- Project Next Steps & Overview





What We've Heard So Far

- Online survey
 - Opened on April 12
 - Closed on May 17



Sessions

Users

Pages/Sess.

Avg Time

Shares

977

786

2.9

03:17

10

2.9 Avg 03:18 Avg



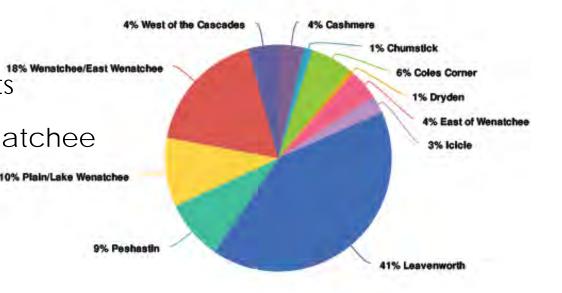
Who Participated?

• 166 responses received

67 from Leavenworth Residents

29 from Wenatchee/East Wenatchee

• 7 from West of the Cascades

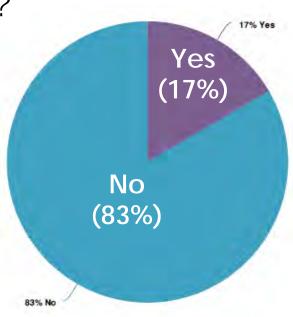




Vision & Guiding Principles

Are we missing any important principles?

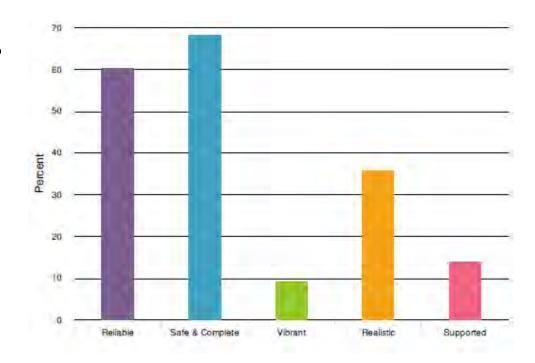
- What we heard.....
 - Protecting **natural resources**
 - Consideration for <u>public transportation</u>
 - Economy doesn't equal tourism
 - Parking for Leavenworth residents
 - Consideration for cost





The Guiding Principles

- What are the two most important principles to you?
 - 98 responders chose **Reliable**
 - 111 responders chose <u>Safe &</u>
 <u>Complete</u>





Your Ideas

- Messaging boards with current travel times
- Weekend and holiday tolls to enter Leavenworth
- Roundabouts
- Overhead pedestrian crossings in Leavenworth
- Bicycle and pedestrian facilities
- Extend transit service

- Coordinate signals
- Split traffic flow within Leavenworth by direction
- Tunnels
- Decrease speed limits near SR 97
- More parking lots and a garage near downtown Leavenworth
- Bypass for Leavenworth



What Else Should We Consider?

- Changing transportation choices
- Safety for cyclists
- Wildlife
- Long range planning
- Emergency access





The Leavenworth Farmers Market

- Attended on Thursday, June 13th
 - Engage **local** residents
 - Kick-off the next phase opportunity for input
- Key Feedback
 - Improved bicycle facilities from Coles Corner to SR 97
 - Both on US-2 and parallel routes
 - Mixed feedback on roundabouts on US-2
 - Extend transit service to Coles Corner





How Did We Incorporate Feedback?

- The Guiding Principle
 - Vibrant. Study recommendations supporting the region's economy Leavenworth's tourism industry and growing seasonal usage of the corridor.
- Project Ideas
 - Incorporated into project list
 - Beginning of supported evaluation.
 - What does the community want to see?



What's Next?

- Our Project Map is <u>live</u>, help us promote it!
 - Opportunity to provide feedback on projects and add your own
 - Available through July

https://us2upperwenatchee.participate.online/talk-to-us



Meeting Agenda

- Public Engagement: What We've Heard so Far
- Project Evaluation Exercise & Report Back



- Project Selection Overview
- Project Next Steps & Overview





Meeting Agenda

- Public Engagement: What We've Heard so Far
- Project Evaluation Exercise & Report Back
- Project Selection Overview



Project Next Steps & Overview





Matrix Overview

Matrix Scoring

Project #	Project Description	Project Type							
Segment 1 - Coles Corner to Leavenworth									
1	Affordable seasonal shuttle to Stevens Pass available for skiers and employees.	Planning							
6	Improve existing shoulders and add shoulders where none exist, such that bicycles could be accommodated on the shoulder as this is identified as a US bike route.	Design							
	Segment 2 - Leavenworth								
13	Create a cordon surrounding festival areas that autos are prohibited from entering.	Planning							
14	Temporary One-Way System through Leavenworth on US 2, which could shift direction as needed.	Design							
15	15 Rechannelize US 2 to create a multi-use trail parallel to US 2								
16	Center running Transi∜Emergency Only Lanes During Events/High Demand Periods	Design							
17	Grade Separated Pedestrian Crossings - 3 bridges or a pedestrian underpass	Design							
18	Create a direct connection to US 2 from Pine Street to improve local connectivity	Planning							
23	Festival parking at east/west end of Leavenworth - Park & Ride paired with shuttle or tramway.	Parking							
29	Parking Management	Parking							
Segment 3 - Leavenworth to SR 97									
46	Improved parallel facilities for all modes on or near North Road	Planning							
	Segment 4 - SR 97 to Cashmere								
58	Invest in parallel routes for bikes	Design							

Top 2 Guiding Principles Project # **Project Description** Project Type Segment 1 - Coles Corner to Leavenworth 3 Add signage with wayfinding to designated areas for parking/crossing US 2. Parking Improve existing shoulders and add shoulders where none exist, such that 6 bicycles could be accommodated on the shoulder as this is identified as a Design US bike route. Segment 2 - Leavenworth Temporary One-Way System through Leavenworth on US 2, which could Design shift direction as needed. Rechannelize US 2 to create a multi-use trail parallel to US 2 Design Create a direct connection to US 2 from Pine Street, to improve local 18 Planning Create better parallel route capacity; Icicle Road to E Leavenworth Rd 19 Planning (more complete facility) Create better parallel route capacity: Chumstick Hwy to North Rd (more 20 Planning complete facility) 21 Add sidewalk enhancements with buffer Design 22 Flagger Training Programming 32 Build roundabouts at each primary intersection Design Segment 3 - Leavenworth to SR 97 46 Improved parallel facilities for all modes on or near North Road Planning Segment 4 - SR 97 to Cashmere 58 Invest in parallel routes for bikes Design

Next Steps

• July 2019

- Online Map up for feedback
- Project Selection

August 2019

- Next PAC Meeting
- Project Team Evaluating Options

US 2 Upper Wenatchee Valley Transportation Study

Schedule

Task	Description	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	Planning Context												
2	Corridor Vision			_			_						
3	Evaluating Options												
4	Community Conversation												
5	Final Plan										\Rightarrow		
	PAC Meetings			•		•		•		•			•
	Public Outreach/Events					•		•		•			







Project Advisory Committee Meeting #3

Wednesday, June 19, 2019 11:30 AM - 1:30 PM

AGENDA ITEM #1: WELCOME

In-Person Participants

- Penny Mabie, Envirolssues
- Nancy Smith, Leavenworth Chamber of Commerce
- Duane Goehner, Citizen, Friends of Leavenworth
- Joel Walinski, City of Leavenworth
- Kendra Breiland, Fehr & Peers
- Kara Hall, Fehr & Peers
- Bianca Popescu, Fehr & Peers
- Sergeant Scott Lawrence, Chelan County Sheriff
- Nick Manzaro, WSDOT

In-Person observing

- Richard Warren, WSDOT
- Lilith Vespier, City of Leavenworth

Purpose of the meeting

- Covered agenda for meeting
 - What We've Heard So Far
 - o Project Evaluation Exercise & Report Back
 - o Project Selection Criteria
 - Next Steps

AGENDA ITEM #2 - WHAT WE'VE HEARD SO FAR

- Online Survey
 - o Trends for Pages per Session & Average Time are consistent with industry average.
 - Spike with promotion following previous PAC meeting hope to see similar trends following today's meeting.
- Who Participated

- Most responses from Leavenworth residents and surrounding area, some participation from other residents in the area.
- Vision & Guiding Principles
 - o Generally, feedback indicates that we've captured important principles.
 - Question was asked regarding consideration for cost Kara noted that feedback mentioned considering value for residents in expensive improvements.
- The Guiding Principles
 - o Safe & Complete and Reliable were identified as most important.
- The Leavenworth Farmers Market
 - Bianca noted that the community was positive about outcomes of the project.
 - o Bicycle facilities both on US 2 and parallel routes received interest from residents.
- How Did We Incorporate Feedback?
 - o Removed vibrant from guiding principles, focused on region's economy
 - Supported guiding principle will be factored into consideration based on the feedback we receive
 - o Revised rankings on guiding principles 1, 3, 4.1 (ROW)
 - o Paula noted we should consider reordering Principles to align with feedback. "Safe and complete" since it was the most important thing for the public
 - o Paula noted that Parking & Way Finding should likely have more explicit ranking.
- What's Next
 - o People are adding ideas and commenting on our project ideas
 - o Penny requested that PAC members share website.
 - Only as effective as how many people can access it so please share!
 - Website is live through the end of July to capture feedback and input during seasonal travel periods.
 - WSDOT will use VMS to promote project feedback during busy months.
 - Richard from WSDOT (multimodal planning) thinks this is fantastic internal review team is very impressed
 - o Peshastin community briefing in order to reach the Spanish and growing community

AGENDA ITEM #3 - PROJECT EVALUATION EXERCISE

- Goal is to get feedback from PAC on project list.
- PAC members were divided into two groups and asked to identify a) Projects you like and why,
 b) Projects you don't like and why, c) short term projects, d) long term projects
- "Short Term" defined to mean 5 years or less for implementation, 5-10 years long term, 10 years > potential Vision Project
- Report Back:
 - Group A (City of Leavenworth, Friends of Leavenworth, Chamber):
 - Like #3, #4 in segment 1
 - Segment 2: #14, 16, 19, 18, [17 Dwane], 20, 23, 24, 25, 28, 29, 32 [can only fund them if there is a collision history –WSDOT says], 33, 34, 36, 37, 38, 40, 43, 44
 - Segment 2 already has 39 and 41
 - Segment 3: 46, 47, 48, 49, 50, 51, 54, (52 already happening), 57

- Segment 4: 59
- Group B liked (WSDOT, County, Sheriff)
 - Segment 1 liked 1 -4, 6 12
 - Segment 2 liked #13, 16-18, 21, 23-31, 33, 35-41, 43-44,
 - Segment 3 liked #47-57
 - Segment 4 liked all #58 63
- Segment 1 discussion
 - Shuttle would be great, but has nothing to do with our project
 - #2 is a really long term project "vision project" can't see it happening
 - Inappropriate for residential community to have freight
 - #4 should separate out upgrading existing is very different than creating new pull-outs
- Segment 2 discussion
 - #13 what does it look like? Front Street is already being closed. Okay with this as long as it's not blocking US 2.
 - #14 center lane goes one way, alternating the direction based on the congestion?
 Evacuation route style lots of comments made about no plan for massive evacuation or emergencies. Needs to be restated.
 - #17 Some against pedestrian bridges people will still j-walk, cost is high, location is not known, fence needed
 - For: nice to separate
 - Underpass: has safety concerns have to be well designed, well-lit, safe to be used
 - #19 County disagrees with this unless only looking at multimodal facilities
 - #20 same thing as #19
 - #21 is this the best priority of funds?
 - Was noted as visual enhancement and opportunity to prevent jay-walking.
 - #22 coordinated plan for flagger training
 - #26/27 bike share low priority because low density, some liked the idea.
 - #30 dynamic counting for parking cost issue because such a small area. Some counting system are weather dependent in snow conditions. Other group liked to have better parking management. Leavenworth group like this idea if we build a parking structure
 - #32 roundabout depends on WSDOT, if it fits criteria. WSDOT noted the intersections aren't prioritized from a collision perspective, but if the City wants to go after a grant they would.
 - #35 didn't like it because population density isn't high enough
 - #39 daily service of trailways already have it ("Northwestern")
 - #42 officers unlikely to prioritize
- Segment #3
 - #46 –okay with North Rd if active modes
 - #53 aerial tramway is very "visionary"
- Segment #4
 - Creating a bicycle route via irrigation ditch would be better effort spent than creating a safe lane on US 2

- Each group provided documentation for Short Term/Long Term projects
- Kendra noted that this discussion will be used to identify fatal flaws in projects and understand priorities as we move into developing Project Packages for evaluation of final report.
- Feedback from the groups indicated that there were come projects needing more explanation and details.
 - Kara noted that final project descriptions, locations, and improvements will be refined as we move through the process.

AGENDA ITEM #4 - PROJECT SELECTION OVERVIEW

- Overview of use of Evaluation Matrix noted the conversation today as helpful in informing how projects are evaluated.
- Overview of top projects evaluated using the matrix scoring and prioritizing Safe & Complete and Reliable (doubling points associated with those principles).
- Matrix is a tool, not a decision making device we heard what is considered a "no-go" today and that feedback will be considered.
- We will be creating a package of projects likely to be some top tier projects and some middle tier projects to ensure we have short term and long term solutions that align with project goals and principles.
- Joel has a question whether the public will have an opportunity to respond to the packages answer is yes, in September when we have a more complete plan.
 - o Follow up from Nick: is approach to put the project packages on the interactive map?
 - This will be considered but needs to be straight-forward and easy to understand.
- CDTC will give an update in August to the board.

AGENDA ITEM #5 - NEXT STEPS

- Online Map will be live through July
- Consultant team will be completing matrix, incorporating community feedback and narrowing project list and beginning of evaluation.
- Project Package will be presented at next PAC meeting.
- Next PAC meeting is August 21st.

Project Advisory Committee Project Status Report August 30, 2019



Memorandum

Date: August 30, 2019

To: Project Advisory Committee

From: Kara Hall – Fehr & Peers

Subject: US 2 Upper Wenatchee Valley Project Status Update

This memorandum provides an update on the status of the US 2 Upper Wenatchee Valley Corridor Study for all Project Advisory Committee Members (PAC). A project status overview is provided below, followed by a more detailed discussion on data collection, project selection, project evaluation, and project website/community engagement updates.

Project Status Overview

- In mid-August the project team collected data including vehicle counts, bicycle counts, pedestrian counts, and travel time along US 2 through Leavenworth. Travel time was collected from Icicle Road to River Bend Drive. Count information was collected at six intersections on US 2 and at both High-Intensity Activated Crosswalk (HAWK) beacons.
- Project ideas have been sorted into the following categories, which describe how projects will be considered in the US 2 Upper Wenatchee Valley Corridor Plan:
 - Selected for Evaluation Projects will evaluated and documented in the final report with conceptual layouts, cost estimates, and photo renderings as appropriate.
 - These projects are being evaluated with consideration for travel time improvements, safety benefits, the number of potential users that will benefit, Right-of-Way, and cost. Findings of project evaluation and recommendations for final project selection will be presented at the September PAC meeting.
 - Quick Wins & Small Steps Projects will be included in the report with a project description as well as considerations for implementation, such as coordination needs Right-of-Way, and technical challenges.
 - Vision Project/Recommended for Future Consideration Large projects that extend beyond the scope of this study due to extended timeline (decades to



implementation) and/or extreme funding needs. These projects will be included in the report with a project description as well as considerations for implementation, such as coordination needs Right-of-Way, and technical challenges.

- Not Selected for Evaluation Projects identified, but not advancing the within the study due to inconsistency with the Guiding Principles. Projects will be included in the appendix of the final report only.
- Nearly 1,000 users visited the project map portion of the project website. Input from the community has been summarized and used to evaluate the 5th Guiding Principle,
 Supported. The next project website update will feature the final project selection following the September PAC meeting.

Data Collection

To supplement the data collected during the Tree Lighting Festival, the Project Team has collected additional data to document and analyze conditions during the summer travel season.

Progress (June-August)

The data, described below, was collected in mid-August to capture summer travel conditions.

Data collected included vehicle counts, vehicle classification (vehicle type by axel), bicycle counts and pedestrian counts. Counts were collected at the intersections and crossings listed below. Data was collected on a Friday between 2 PM and 5 PM and on a Sunday between 11 AM and 2 PM.

- Icicle Road / US 2
- 9th Street / US 2
- Front Street / US 2 (location includes pedestrian crossing)
- Pedestrian crossing at City Hall
- Chumstick Highway / US 2
- Ski Hill Drive / US 2
- River Bend Drive / US 2

Travel time between the Icicle Road intersection and River Bend Drive on US 2 was also collected during the time periods noted above.

On-Going/Next Steps

- Data collected is being post-processed and utilized in project evaluation.
- The Existing Planning & Context Memorandum will be updated to include data collected during the summer and included in the final project report as an appendix.



Project Selection

Progress on Project Selection since the June PAC meeting and well as ongoing items, and next steps are summarized below.

Progress (June-August)

Based on input from the PAC, Project Management Committee, and community input, the project team has grouped the nearly 90 projects ideas developed into four categories. These categories, described below, identify how potential investments will be evaluated and documented in the final report. The four categories are:

Selected for Evaluation

Projects in this category are currently being evaluated. A final list of projects selected for evaluation will be determined based on information to be presented at the September PAC meeting. These projects will be documented in the final project report with a project fact sheet, which could evaluation information, conceptual layouts, photo renderings, and potential grant information as appropriate.

Quick Wins & Small Steps

Projects for which further evaluation and implementation could be completed outside the scope of this study. This is due to either the programmatic nature of the projects or the level of analysis required to develop the information needed to obtain funding for the project. A description of the project as well as considerations for implementation, such as coordination needs Right-of-Way, and technical challenges will be included in the final project report.

Vision Project / Recommended for Future Consideration

This category includes projects identified as part of the process but that extend beyond the scope of this study due to extended timeline and/or extreme funding needs. Projects in this category also include projects that may be beneficial to multi-modal travel in the area but could be evaluated as part of other studies or transportation plans. A description of the project as well as considerations for implementation, such as coordination needs Right-of-Way, and technical challenges will be included in the final project report.

Project Not Advancing

This category includes projects identified, but that do not advance more than two of the Guiding Principles. This also includes projects identified as having a fatal flaw that would make implementation unachievable. These projects will be included in the Project Evaluation Matrix and included as a technical appendix to the final project report.



The **DRAFT** Project Evaluation Matrix is included as **Attachment A**. It is important to note that the projects identified as "Selected for Evaluation" will be refined based on information presented during the September PAC meeting.

On-Going/Next Steps

- Recommendations for final project groups are being developed based on project evaluation, discussed below.
- Final project groups will be refined after the presentation of analysis at the September PAC meeting.

Project Evaluation

Prior to inclusion in the final project report projects will be evaluated with regard for safety improvements, traffic operations improvements (i.e. travel time along the corridor), infrastructure requirements, improved emergency access, and parking benefits. Progress on project evaluation as well as on-going items and next steps are summarized below.

Progress (June - August)

The project team has begun evaluating projects currently identified as "Selected for Evaluation." Metrics being evaluated include:

- Corridor travel time
- The number of users likely to benefit from the proposed project
- Safety benefits
- Route reliability improvements (both for local users, regional users, and emergency access)
- Right-of-Way needs
- Changes to transit usage
- Benefit to parking utilization and access to parking
- Cost

On-Going/Next Steps

- The project team is continuing evaluation of selected projects for presentation of applicable findings at the September PAC meeting.
- Pending input from the PAC, final project evaluation will be completed including cost estimates, conceptual layouts, and photo renderings as appropriate.



Project Website

Updates to the project website since the June PAC meeting, as well as on-going items and next steps are identified below.

Progress (June-August)

The project map allowing users to vote on and comment on projects developed by the project team as well as add their ideas for improvements along the corridor was available from June 13th to August 1st. The opportunity to provide input was promoted on multiple partner agency sites, featured in an article in the Wenatchee World and promoted on variable messaging signs in Leavenworth from July 18th- 21st. Nearly 1,000 users visited the project map. An overview of the results from the Social PinPoint is included as **Attachment B**.

The project team has also received many inquiries and comments regarding the recently installed pedestrian signals in Leavenworth. As a result, the project website has been updated to direct community members to the appropriate agency with feedback regarding the pedestrian signal installation.

On-Going/Next Steps

- Following the September PAC meeting, the selected projects will be shared with the community via the project website with an opportunity for the community to provide feedback.
- The project team is working to schedule a community briefing with the agricultural community, a presentation with the Chelan-Douglas Transportation Council Board, and a Leavenworth City Council Workshop.

Attachment A. Project Evaluation Matrix

ID#	Project Description	Segment	Evaluation Considerations	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects/Recommen ded for Future Consideration	Project Not Advancing	Project Notes
15	Temporary One-Way system through Leavenworth on US 2, which could shift direction as needed.	2 - Leavenworth	Can provide preliminary channelization/temporary traffic control planning. If intended as permanent installation, can provide channelization recommendations. Could also complete operations analysis for One-Way condition including transitions to/from one-way as well as delay/travel time/queueing.	Х				
16	Rechannelize US 2 to create a separated multi-use trail parallel to US 2.	2 - Leavenworth	Can provide preliminary layout and planning level cost estimate and photo rendering. Can also provide operations analysis for modifications needed for US 2, including delay/travel time/queueing.	Х				Will be evaluated as part of US 2 analysis.
17	Center running Transit/Emergency Only Lanes During Events/High Demand Periods	2 - Leavenworth	Can provide preliminary channelization/temporary traffic control planning. Can also provide travel time/delay through traffic operations assessment.	Х				
18	Grade Separated Pedestrian Crossings – 3 bridges or a pedestrian underpass	2 - Leavenworth	Can provide location recommendations and planning level costs. Could analyze improvements to signal timing along US 2 with removal of pad phase for crossing US 2.	Х				Will be evaluated as part of US 2 analysis.
19	Extend Pine Street to include a bride over the Wenatchee River and connection to River Bend Road, creating a parallel route over the river in Leavenworth.	2 - Leavenworth	Can provide preliminary layout and planning level cost estimate.	Х				Project being completed by City of Leavenworth.
22	Add sidewalk enhancements with buffer	2 - Leavenworth	Can provide preliminary layout and planning level cost estimate.	Х				Will be evaluated as part of US 2 analysis.
24	Expanded visitor parking at east/west end of Leavenworth – Park & Ride paired with shuttle options, including a potential center running transit-lane, or Ariel tramway with connections to Downtown Leavenworth.	2 - Leavenworth	Parking management strategies outlined in the Strategic Parking Management Plan need to be implemented first.	X				
29	Remove on-street parking to connect bicycle lane	2 - Leavenworth		X				Will be evaluated as part of US 2 analysis.
30	Parking Management	2 - Leavenworth	Preliminary cost estimates and action items needed to expand recommendations in the Leavenworth Downtown Parking Plan to include US 2 through Leavenworth.	Х				
33	Build roundabouts at each primary intersection	2 - Leavenworth	Can provide preliminary layout and planning level cost estimate.	х				Likely to be considered as part of US 2 Evaluation
37	Delivery zone/parking/drop-off	2 - Leavenworth	Recommend first implementing Parking Management Strategy #5: Hire Parking Manager. Management of specific parking management strategies needs active involvement by a single point of contact.	х				
49	Adaptive management strategies, such as transit on shoulders paired with Park & Ride at 97 interchange.	3 - Southeast Segment A	Could complete operations analysis to determine benefits to transit utilizing shoulders.	Х				Project 49/50 will be grouped for evaluation
52	Improve Peshastin bridge to better accommodate bicycles and pedestrian connections from US 2 to Peshastin	3 - Southeast Segment A	Could complete operations analysis to test different intersection/access configurations. Could develop high level cost-estimate based on results of traffic modeling.	х				
3	Signage and wayfinding to designated areas for parking/crossing	1 - Northwest Segment	Could identify key areas for signage based on existing recreation and desire lines.		х			
4	Upgrade existing pull-outs paired with enhanced pedestrian crossings.	1 - Northwest Segment	Ties to Projects 5 and 8. Can choose a few known locations to do planning level design and cost estimates that may then be used as a baseline for other areas.		х			

ID#	Project Description	Segment	Evaluation Considerations	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects/Recommen ded for Future Consideration	Project Not Advancing	Project Notes
6	6" fog lines or narrower lanes may be effective for speed control and/or increased shoulder size for bikes.	1 - Northwest Segment	Would need design eval to confirm any lane width changes with WSDOT if shoulders were widened the lanes narrowed. Channelization changes should be covered under MOU with USFS. Cost estimate for re-striping can be put together as well as timeline of "next steps".		X			
9	No Parking Signs	1 - Northwest Segment	Identify locations with history of collisions or known sight distance issue for parking on the shoulder.		X			
10	No Pedestrian Crossing Signs	1 - Northwest Segment	Low cost enhancement that could be rolled into City, WSDOT, or County's maintenance program. Could spend time identifying specific areas that would be most effective.		х			
12	High Friction Surface Treatments	1 - Northwest Segment	If location is identified, can provide planning level cost estimate for this safety treatment.		Х			
13	Create variable speed area using ITS.	1 - Northwest Segment	Can provide recommendation for location and planning level cost estimates.		Х			
26	Transit shuttle service	2 - Leavenworth			Х			
32	Parking app	2 - Leavenworth	Strategy #20 from the Parking Management Plan (Website) should be implemented first, along with other parking management recommendations. Engage vendor to develop cost estimates.		х			
34	More/better bike parking	2 - Leavenworth	See Strategy #21 within Strategic Parking Management Plan for overview of costs of Bike Parking. Cost Estimate: \$15,000-\$20,000.		Х			
38	Transit/Emergency Preemption	2 - Leavenworth	Can research pre-emption equipment/costs/installation/maintenance to provide to WSDOT for consideration. Can provide improvements to travel time/delay along the corridor.		x			
44	Employee TDM strategies	2 - Leavenworth	Could make recommendations for Employee TDM strategies.		х			
45	Delivery hours/permits	2 - Leavenworth	Could make recommendations for delivery hours/permits guidelines.		Х			
103	Install additional crosswalks/pedestrian signage	2 - Leavenworth			Х			
53	Snow removal for bus stops	3 - Southeast Segment A			X			
58	High Friction Surface Treatments	3 - Southeast Segment A			Х			
66	Shoulder Treatments to better accommodate bicyclists on US 2 (Edge line rumble strips, striping, etc.)	3 - Southeast Segment A			Х			
65	High Friction Surface Treatments	4 - Southeast Segment B	If locations are identified, could provide planning level cost estimates.		Х			
67	Shoulder Treatments to better accommodate bicyclists on US 2 (Edge line rumble strips, striping, etc.)	4 - Southeast Segment B			Х			
7	Improve existing shoulders and add shoulders where none exist, such that bicycles could be accommodated on the shoulder as this is identified as a US bike route.	1 - Northwest Segment	WSDOT has varying widths of ROW on the north (uphill) side of the highway and most are steep hillside. Can put together preliminary costs for widening some sections, assuming retaining walls for any major widening into steep hillsides. Would use GIS layers and aerial photos for base mapping.			Х		
105	Roundabout at intersection of US-2/SR-207	1 - Northwest Segment	Can provide preliminary layout and planning level cost estimate and traffic operations analysis to identify project benefits for travel along the corridor.			Х		

ID#	Project Description	Segment	Evaluation Considerations	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects/Recommen ded for Future Consideration	Project Not Advancing	Project Notes
27	Micro-mobility options including bike share/scooters, neighborhood electric vehicles or other modes that could be used to serve the Leavenworth area.	2 - Leavenworth				X		
47	Improved parallel facilities for all modes	3 - Southeast Segment A	If locations/improvements are identified, can provide planning level design and cost estimates for projects. High demand traffic time periods would concentrates issues at intersections with US2.			X		
48	Spot treatments at local access points	3 - Southeast Segment A	Could complete operations analysis to test different intersection/access configurations. Could develop high level cost-estimate based on results of traffic modeling.			Х		
51	Pedestrian and bicycle improvements along US 2 based on land use	3 - Southeast Segment A	If locations/improvements are identified, can provide planning level design and cost estimates for projects.			X		
55	Improvements for bus stops along US 2, keeping them on the highway and improving bicycle and pedestrian connections to stops.	3 - Southeast Segment A	Identify opportunities to connect bus stops to existing bicycle/pedestrian network and provide high-level cost estimate.			X		
59	Invest in parallel routes for bikes	4 - Southeast Segment B	If locations/improvements are identified, can provide planning level design and cost estimates for projects.			X		
60	Route 22 opportunities with W. Cashmere Bridge Project	4 - Southeast Segment B				X		
68	Improve bicycle and pedestrian connections to transit stops	4 - Southeast Segment B	Identify opportunities to connect bus stops to existing bicycle/pedestrian network and provide high-level cost estimate.			X		
1	Park & Ride to Stevens Pass with interim stops for employees and skiers.	1 - Northwest Segment	Could identify potential stops and parking locations to better serve Coles Corner area, would need data on number of employees at Stevens Pass Ski area.				Х	
2	Chumstick Highway is identified as an alternate route for emergency needs. Upgrade Chumstick to be a viable detour route for freight use	1 - Northwest Segment	Can put together a very preliminary cost estimate for the work, on lane-mile scale, including ROW purchase. May help to show the fatal flaw to proponents of a bypass.				X	Identified as too costly and not supported.
5	Create new pull-outs with enhanced pedestrian crossings near known desire lines across US 2.	1 - Northwest Segment	May need several meetings with rafting companies to determine patterns of use. Once standard routes are identified, could look at RI/RO and channelization to ensure turns across traffic are minimized and pedestrians planned for. Costs will be hard to determine without knowing project				Х	
8	Improve sight distance in areas where pedestrians are known to cross	1 - Northwest Segment	Ties to Projects 4 and 5. Can choose a few known locations to do planning level design and cost estimates that may then be used as a baseline for other areas.				Х	
11	Speed enforcement campaign – high traffic impact timeframes	1 - Northwest Segment	Could identify locations based on known desire lines for pedestrians and collision data.				х	
14	Create a cordon surrounding festival areas that autos are prohibited from entering.	2 - Leavenworth					х	Not supported on US 2 and already implemented on some parallel routes.
20	Improve Icicle Road to provide better bicycle facilities as an alternate bicycle route - could include 6" or narrower fog lines or advisory shoulders.	2 - Leavenworth	If locations/improvements are identified, can provide planning level design and cost estimates for projects. High demand traffic time periods would concentrates issues at intersections with US2.				Х	Identified as too costly and not supported.
21	Create better parallel route capacity: Chumstick Hwy to train station (more complete facility)	2 - Leavenworth	If locations/improvements are identified, can provide planning level design and cost estimates for projects. High demand traffic time periods would concentrates issues at intersections with US2.				X	Not a realistic option for bypassing the corridor.

ID#	Project Description	Segment	Evaluation Considerations	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects/Recommen ded for Future Consideration	Project Not Advancing	Project Notes
23	Flagger Training	2 - Leavenworth					Х	City has already hired traffic management firm.
25	Reconsider transit service times/headways to include more frequent service, specifically during off-peak travel times to better accommodate service industry employees	2 - Leavenworth					V	Improved service will be designed and implemented over the next 2 years as a result of a recent ballot measure.
28	Neighborhood Electric Vehicles as Modes	2 - Leavenworth					х	Project combined with #27
31	Electronic Counter Systems for Parking tied to Dynamic Wayfinding	2 - Leavenworth	Strategy #18 from the Parking Management Plan (Parking Signage) should be implemented first. Engage vendor to develop cost estimates.				X	
35	Re-introduce the shuttle train from Wenatchee and Everett into Leavenworth (the old "Snow Train")	2 - Leavenworth					Х	Costly and limited by access to railroads.
36	Car share with thought given to changing curb space management	2 - Leavenworth					Х	Not in line with mode-split occurring in Leavenworth.
39	Bicycle facility south of river	2 - Leavenworth	Could study different possible routes based on topography and connection points, along with planning level cost estimate. Likely very time consuming as it's several miles of bike trail.				х	Project identified as costly and not supported.
40	Daily service on trailways	2 - Leavenworth					X	
41	Aerial Tramways integrated with parking strategy	2 - Leavenworth					X	Project already captured by project #24 and will be considered as parking strategy rather than a stand-alone project.
42	Emergency Routes/Staging	2 - Leavenworth					Х	Already happening
43	Enforcement for pedestrian crossings – vehicles at crosswalks, and j-walking between crosswalks.	2 - Leavenworth					X	Resources for implementation are likely infeasible.
100	Measures to prevent vehicles occupying motorcycle parking locations.	2 - Leavenworth					X	
104	Remove parking spaces between 13th and 14th on Front St to allow	2 - Leavenworth					Х	
108	Sign visibility enhancements	2 - Leavenworth					x	
101	Leavenworth At-Grade Bypass	2- Leavenworth	If no ROW purchased, would require channelization changes along with				Х	
54	Aerial tramway	3 - Southeast Segment A					X	Length needed for tramway to reach potential parking areas in Segment 3 likely to make project infeasible.
56	Enforcement campaign for speed	3 - Southeast Segment A					Х	

ID#	Project Description	Segment	Evaluation Considerations	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects/Recommen ded for Future Consideration	Project Not Advancing	Project Notes
57	Additional red light/warning signs	3 - Southeast Segment A					X	
102	Add an additional lane to US-2 in both directions	3 - Southeast Segment A	ROW costs likely a fatal flaw, but could estimate planning level costs.				x	Cost due to ROW do not align with project Guiding Principles.
61	Improve safety around icy spots on the road (variable message signs?)	4 - Southeast Segment B					X	Project infeasible due to liability associated with project.
62	Speed feedback signs	4 - Southeast Segment B	Very low cost and could be completed quickly. Could provide list of possible locations.				X	
63	Enforcement campaign for speed	4 - Southeast Segment B					X	
64	Additional red light/warning signs	4 - Southeast Segment B					Χ	



Attachment B. Social Pinpoint Results Summary

August 19, 2019

Overview

From June 13th to August 1st, 953 unique users visited the US 2 Upper Wenatchee Transportation Study's Social Pinpoint map. 90 unique users submitted a total of 219 comments. Of the 219 comments or ideas, 151 were new ideas submitted by the public and 104 comments focused on projects and ideas in Leavenworth.

Results

The three projects in the corridor that received the most upvotes were also all new ideas.

# Upvotes	Segment	Idea
139	Leavenworth	Add a roundabout or traffic signal at US 2 and 3rd St/Ski Hill Dr.
59	Leavenworth	Put an underground parking garage where the current City Parking Lot P1 is located.
48	Cashmere	Reconfigure the southwest side of the intersection between Tichenal Way and US 2/97.

Of the proposed projects, the ones that received the most upvotes were:

# Upvotes	Segment	Idea
25	Tumwater	Add shoulders along US 2 through Tumwater Canyon to accommodate
	Canyon	bicycle lanes.
25	Tumwater	Add parking spaces, wayfinding signage, and pedestrian crosswalks to
	Canyon	pull-outs near scenic and recreational areas.
14	East to US	Improve US 2 between US 97 and Leavenworth so that transit can
	97	operate on the shoulder during periods of high traffic

The proposed project ideas that received the most comments were:

# Comments	Segment	Idea	Comment Summary
12	Tumwater	Freight Use	All commenters opposed enabling freight to travel on the
	Canyon		Chumstick Highway.
8	Tumwater	No	Most commenters thought pedestrians would continue
	Canyon	Pedestrian	to cross US 2 and that reducing the speed limit and
		Crossing	creating a pedestrian bridge or crosswalk would increase
			safety.
8	Tumwater	Bicycle	Most commenters were curious about a feasibility study
	Canyon	Lanes	between adding bicycle lanes in Tumwater Canyon vs
			Chumstick Highway.

Project Advisory Committee Meeting #4
September 26, 2019



PROJECT ADVISORY COMMITTEE MEETING

Thursday, September 26, 2019 11:00 AM – 1:00 PM

AGENDA

Purpose of the Meeting: Presentation of proposed project grouping, project evaluation findings, and project feedback exercise by Project Advisory Committee.

Topic	Facilitator	Time
1. Welcome	Penny Mabie	10 min
 Project Grouping: Process Recommendations 	Kara Hall	15 min
3. Project Evaluation Findings	Bianca Popescu/Jennifer Saugen/Pete Collins	30 min
4. Project Feedback Exercise	Penny Mabie/Kendra Breiland	50 min
5. Next Steps & Project Overview	Penny Mabie/ Kara Hall	15 min











Segment 1 - Coles Corner to Leavenworth

Segment 2 - Leavenworth

Segment 3 - Leavenworth to SR 97

ID#	Project Description	Selected for Evaluation	Quick Wins & Small Steps ¹	Vision Project	Project Not Advancing
16	Reallocate US 2 Right-of-Way to accommodate dedicated facilities for bicyclists and/or transit.	X			
17	Center running Transit/Emergency Only Lanes During Events/High Demand Periods	Х			
18	Grade Separated Pedestrian Crossings – 3 bridges or a pedestrian underpass	X			
19	Extend Pine Street to include a bridge over the Wenatchee River and connection to River Bend Road, creating a parallel route over the river in Leavenworth.	X			
22	Enhanced modal seperation for pedestrians via fences and/or vertical elements	x			
30	Parking Management - Expanded visitor parking at east/west end of Leavenworth – Park & Ride paired with shuttle options, including a potential center running transit-lane, or Ariel tramway with connections to Downtown Leavenworth.	X			
33	Build roundabouts at Chumstick Highway, 9th Street, and Front Street.	Х			
37	Parking Flex Space on US 2 and connection of on-street bicycle lane.	X			
49	Transit-on-Shoulders paired with Park & Ride at 97 interchange.	Х			
52	Establish better acces to transit stops on US 2 for bicyclists and pedestrains from Peshastin through a separate structure parallel to Peshastin Bridge	X			
3	Signage and wayfinding to designated areas for parking/crossing		X		
4	Upgrade existing pull-outs paired with enhanced pedestrian crossings.		X		
6	6" fog lines or narrower lanes may be effective for speed control and/or increased shoulder size for bikes.		X		
9	No Parking Signs		X		
10	No Pedestrian Crossing Signs		X		
12	High Friction Surface Treatments		X		
13	Create variable speed area using ITS.		x		
26	Transit shuttle service		x		
32	Parking app		x		
34	More/better bike parking		Х		

¹Projects that could be implemented within a six year timeline.

Segment 1 - Coles Corner to Leavenworth

Segment 2 - Leavenworth

Segment 3 - Leavenworth to SR 97

ID#	Project Description	Selected for Evaluation	Quick Wins & Small Steps ¹	Vision Project	Project Not Advancing
38	Transit/Emergency Signal Preemption		X		
44	Employee TDM strategies		X		
45	Delivery hours/permits		X		
103	Install additional crosswalks/pedestrian signage		X		
53	Snow removal for bus stops		Х		
58	High Friction Surface Treatments		Х		
66	Shoulder Treatments to better accommodate bicyclists on US 2 (Edge line rumble strips, striping, etc.)		X		
65	High Friction Surface Treatments		X		
67	Shoulder Treatments to better accommodate bicyclists on US 2 (Edge line rumble strips, striping, etc.)		Х		
7	Improve existing shoulders and add shoulders where none exist, such that bicycles could be accommodated on the shoulder as this is identified as a US bike route.			X	
105	Roundabout at intersection of US-2/SR-207			X	
27	Micro-mobility options including bike share/scooters, neighborhood electric vehicles or other modes that could be used to serve the Leavenworth area.			x	
47	Improved parallel facilities for all modes			X	
48	Spot treatments at local access points			X	
51	Pedestrian and bicycle improvements along US 2 based on land use			X	
55	Improvements for bus stops along US 2, keeping them on the highway and improving bicycle and pedestrian connections to stops.			X	
59	Invest in parallel routes for bikes			X	
60	Route 22 opportunities with W. Cashmere Bridge Project			X	
68	Improve bicycle and pedestrian connections to transit stops			X	
50	Park & Ride at 97 interchange paired with shuttle				X
29	Remove on-street parking to connect bicycle lane				X

¹Projects that could be implemented within a six year timeline.

Segment 1 - Coles Corner to Leavenworth

Segment 2 - Leavenworth

Segment 3 - Leavenworth to SR 97

ID#	Project Description	Selected for Evaluation	Quick Wins & Small Steps ¹	Vision Project	Project Not Advancing
15	Temporary peak direction center-thru lane through Leavenworth on US 2, which could shift direction as needed.				X
24	Expanded visitor parking at east/west end of Leavenworth – Park & Ride paired with shuttle options, including a potential center running transit-lane, or Ariel tramway with connections to				Х
1	Park & Ride to Stevens Pass with interim stops for employees and skiers.				X
2	Chumstick Highway is identified as an alternate route for emergency needs. Upgrade Chumstick to be a viable detour route for freight use				Х
5	Create new pull-outs with enhanced pedestrian crossings near known desire lines across US 2.				X
8	Improve sight distance in areas where pedestrians are known to cross				X
46	Create combination zone with On-Street Parking or Tour Bus Drop-Off				X
11	Speed enforcement campaign – high traffic impact timeframes				X
14	Create a cordon surrounding festival areas that autos are prohibited from entering.				Х
20	Improve Icicle Road to provide better bicycle facilities as an alternate bicycle route - could include 6" or narrower fog lines or advisorv shoulders.				Х
21	Create better parallel route capacity: Chumstick Hwy to train station (more complete facility)				Χ
23	Flagger Training				Х
25	Reconsider transit service times/headways to include more frequent service, specifically during off-peak travel times to better accommodate service industry employees				Х
28	Neighborhood Electric Vehicles as Modes				X
31	Electronic Counter Systems for Parking tied to Dynamic Wayfinding				X
35	Re-introduce the shuttle train from Wenatchee and Everett into Leavenworth (the old "Snow Train")				X
36	Car share with thought given to changing curb space management				X
39	Bicycle facility south of river				X
40	Daily service on trailways				X
41	Aerial Tramways integrated with parking strategy				X
42	Emergency Routes/Staging				Х

¹Projects that could be implemented within a six year timeline.

Segment 1 - Coles Corner to Leavenworth

Segment 2 - Leavenworth

Segment 3 - Leavenworth to SR 97

ID#	Project Description	Selected for Evaluation	Quick Wins & Small Steps ¹	Vision Project	Project Not Advancing
43	Enforcement for pedestrian crossings – vehicles at crosswalks, and j-walking between crosswalks.				X
100	Measures to prevent vehicles occupying motorcycle parking locations.				X
104	Remove parking spaces between 13th and 14th on Front St to allow for extended right turn lane or	nto US-2			X
108	Sign visibility enhancements				X
101	Leavenworth At-Grade Bypass				X
54	Aerial tramway				X
56	Enforcement campaign for speed				X
57	Additional red light/warning signs				X
102	Add an additional lane to US-2 in both directions				X
61	Improve safety around icy spots on the road (variable message signs?)				X
62	Speed feedback signs				Х
63	Enforcement campaign for speed				X
64	Additional red light/warning signs				X

¹Projects that could be implemented within a six year timeline.



US 2 Upper Wenatchee Valley Assessment and Comparison of Highest Performing Projects

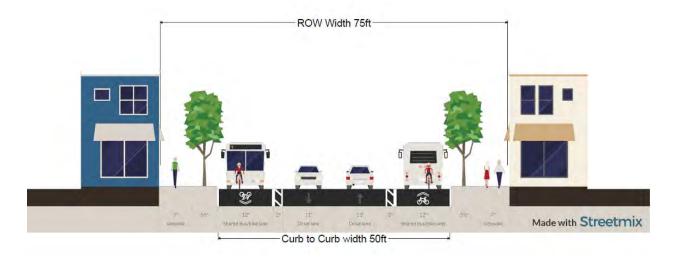
Projects						
Project	Regional Traffic (Through Traffic)	Local Circulation & Access	Transit	Emergency Services	Bicycles	Pedestrians
16. Reallocate US 2 ROW (Alternative A)	0		•	•	•	•
17. Temporary Center Running Transit/ Emergency Lane	0		•	•	0	0
18. Grade-Separated Pedestrian Crossings	•	•	lacktriangle	lacktriangle	0	
19. Pine Street Connection	•	•	•	•	•	•
22. Enhance Modal Separation	•	•	•	•	0	•
30. Parking Management	•	•	•	•	•	0
33. Roundabouts @ Front Street, 9th Street, Chumstick Highway	•	•	•	•	0	•
37. US 2 Parking Flex Space & Bicycle Lane Connection	0	0	0	0	•	0
49. Transit on Shoulders	0	0	•	•	0	0
52. Bicycle & Pedestrian Bridge in Peshastin	0	0	•	0	•	•
			Excellent	Good	O No Change	Poor



16. Reallocation of US 2 Right-of-Way

Alternative A - Dedicated Transit/Bike Lane

<u>Project Description:</u> Reallocate existing US 2 Right-of-Way to include one general purpose travel lane in each direction along with one lane in each direction for dedicated use by emergency access, transit, and bicyclists in Leavenworth. At intersections and selected local access points, right-turning vehicles would be allowed to access the lane in order to maintain existing dedicated turn-pockets at intersections.

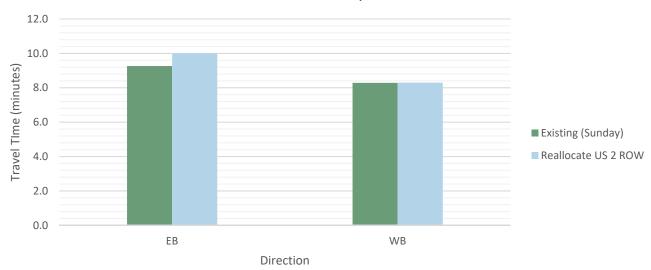


Benefit:

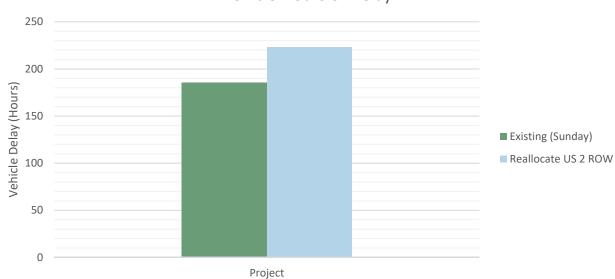
- Bicyclists would be separated from vehicle traffic with striped buffer. At intersections and local access points, striping would indicate a bicycle-vehicle conflict zone. Additional treatments would be needed at intersections to separate bicyclists from right-turning vehicles.
- Delay experienced by bicyclists, transit, and emergency access would be limited to delay occurring at US 2 intersections.
- Would maintain reliable transit travel time during high-demand periods or peak travel periods on US 2, which would incentivize use of transit or shuttle option during events.
 - Assuming 2.5 passengers per car:
 - Trolley or similar size equivalent could eliminate 15 cars for every trip
 - Full size bus could eliminate 30 cars for every trip
- Buffer between general purpose travel lanes and sidewalk would improve pedestrian experience and crossing additional lanes would limit desire to cross at-will.
- Emergency response times would be less impacted by congestion on US 2.



Travel Time Comparison



Vehicle Hours of Delay



Considerations:

- Minimum curb to curb width required would be 46' (11', 12', 11', 12' lanes)
- Would require limiting driveway access along US 2
- Would need striped lane for bicyclists at intersections to move them to inside of rightturning traffic; bike boxes may be provided
- Left-turns from US 2 would be limited to intersections

Project Advisory Committee Meeting #4



- May require elimination of protected-permitted phasing at US 2 intersections (flashing yellow arrow)
- Additional Right-of-Way or modifications to curb/sidewalk may be needed at intersections
- Comfort of bicyclists in Bike/Transit lane would decrease as transit service/transit frequency increased; care must be taken to keep bus speeds low
- Would need to identify where tour bus drop-off would occur

Timeline: 5-10 Years

Cost: Moderate

Eliminates:

- Center Running Transit/Emergency Lane During Festivals (Project #17)
- Roundabouts at US 2 Intersections (Project #33)
- Parking Flex-Space on US 2 (Project #37)

- Parking Management (Project #30)
- Signal Pre-Emption (Project #38)
- Transit Shuttle Service (Project #26)
- Grade Separated Pedestrian Crossings (Project #18)
- Transit-on-Shoulder (Project #49)
- Micro-Mobility Options (Project #47)
- Delivery Hours/Permits (Project #45)



Alternative B - Bi-Directional Transit Lane & Separated Bicycle Path

<u>Project Description:</u> Reallocate existing US 2 Right-of-Way to include a bi-directional transit only lane and separated bicycle lane adjacent to US 2.

Benefit:

- Bicyclists would have a separated parallel route along US 2 through Leavenworth
- Pedestrian experience improved by addition of separated facility between sidewalk and travel lanes
- Transit would have prioritized lane improving route reliability during high-congestion on US 2
- Dedicated lane could be utilized by emergency services

Considerations:

- Due to coordination and headways required for shared lane, operation in lane would need to be limited to one operator (i.e. Link Transit or local circulator), functioning like center-running streetcars
- Would require sidewalk in median to accommodate boarding's from both directions
- Would require transit signal priority at signalized intersections

Timeline: 5-10 Years

Cost: High

Eliminates/Conflicts With:

- Center Running Transit/Emergency Lane During Festivals (Project #17)
- Roundabouts at US 2 Intersections (Project #33)
- Parking Flex-Space on US 2 (Project #37)

- Parking Management (Project #30)
- Signal Pre-Emption (Project #38)
- Transit Shuttle Service (Project #26)
- Grade Separated Pedestrian Crossings (Project #18)
- Transit-on-Shoulder (Project #49)
- Micro-Mobility Options (Project #47)
- Delivery Hours/Permits (Project #45)



Alternative C - Separated Bicycle Path

<u>Project Description:</u> Reallocate existing US 2 Right-of-Way to include a two-way buffered bicycle lane adjacent to US 2.



Benefit:

- Bicyclists would have a separated parallel route along US 2 through Leavenworth.
- Pedestrian experience on selected side of US 2 improved by addition of separated facility between sidewalk and travel lanes.

Considerations:

- Special treatments would be required at beginning and end of separated path, and at intersections to transition eastbound bicyclists back to the south side of US 2.
- Would need to limit local access on side of US 2 with path.

Supports/Pairs With:

- Grade Separated Pedestrian Crossings (Project #18)
- Micro-Mobility Options (Project #27)

Eliminates/Conflicts With:

• Connecting on-street bicycle lane on US 2

Timeline: 5-10 Years

Cost: Moderate

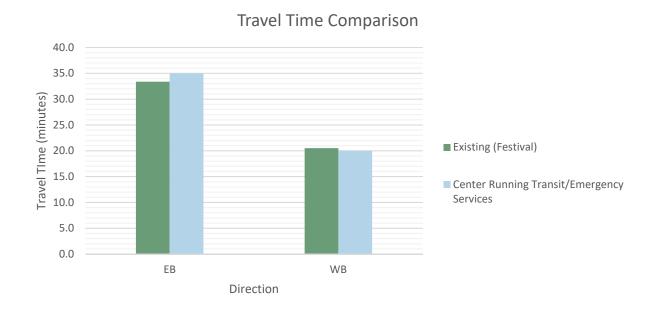


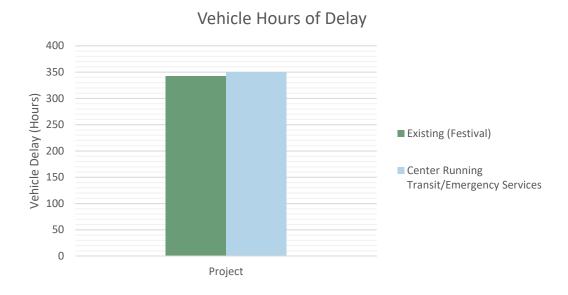
17. Temporary Center Running Transit/Emergency Lanes during Events

<u>Project Description:</u> Project would utilize Two-Way-Left-Turn-Lane as a temporary transit only lane for a circulator or transit during events or high congestion periods. Lane could also be utilized by emergency vehicles.

Benefit:

- Prioritizes transit/circulator option during events
- Improves emergency services access in/out of Leavenworth during events







Considerations:

- Limited Local Access would require limiting turning movements between Chumstick Highway and 3rd Street/Ski Hill Drive to right-turn only
- Would require way-finding signage for local access and circulation

Timeline: 0-5 Years

Cost: Low (per event) Moderate to High with continued deployment.

Eliminates/Conflicts With:

• Roundabouts on US 2 (Project # 33)

- Parking Management (Project #30)
- Transit Shuttle Service (Project #26)
- Parking Flex Space on US 2 (Project #37)
- Transit-on-Shoulders (Project #49)



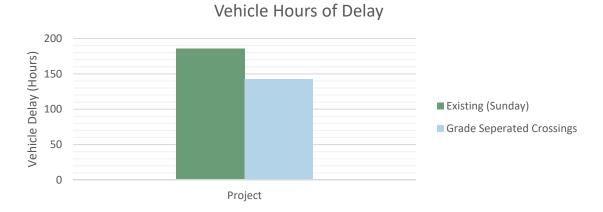
18. Grade Separated Crossing:

<u>Project Description:</u> Currently 2,300 pedestrians use the crosswalks at Front Street City Hall and 9th Street on Sunday between 11 AM and 2 PM to cross US 2 during the summer months. Just under 5,000 pedestrians cross US 2 at 9th Street and Front Street during the Tree Lighting Festival peak hours. This project would construct three grade-separated crossings at Front Street, City Hall, and the Park & Ride Lot separating pedestrians crossing US 2 from vehicle traffic on US 2.

Benefit:

- Signal timing can prioritize vehicle movements at traffic signals along US 2
- Safety benefit by eliminating potential vehicle-pedestrian conflicts on US 2
- Bridge design and decorations/lights on over-crossing could contribute to community character







Considerations:

- For over-crossing access ramps needed to meet ADA grade requirements would be high-cost.
- Under-crossing can be under-utilized and would need to be designed to ensure users feel safe (i.e. adequate lighting)
- Locations can be prioritized and phased with funding availability

<u>Timeline:</u> 10+ Years

Cost: High

Eliminates/Conflicts With:

N/A

- Pedestrian Barrier (Project #18)
- Reallocation of US Right of Way (Project #16)



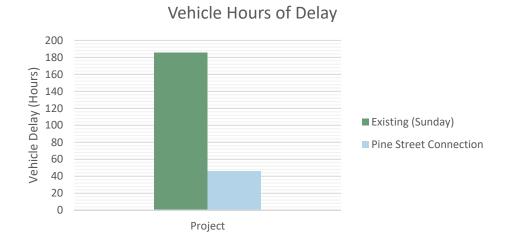
19. Pine Street Connection

<u>Project Description</u>: The extension of Pine Street to include a direct connection with Chumstick Highway, construction of a bridge across the Wenatchee River with connection to River Bend Drive. In addition to one travel lane in each direction, the bridge would provide dedicated bicycle and pedestrian facilities creating a parallel route to US 2 for all modes.

Benefit:

- Route Resiliency construction of a bridge over the Wenatchee River would provide a second option for entering/exiting Leavenworth, which would be beneficial during emergency situations and during events
- Could serve multiple modes vehicles, bicycles, pedestrians, and transit
- Improves local circulation and access to local traffic generators and Link Transit facility.
- Could shift approximately 30% of eastbound traffic and 20% of westbound traffic during Sunday Mid-Day peak





Project Advisory Committee Meeting #4



Considerations:

- Will require significant Right-of-Way acquisition
- Highest cost project

Timeline: 10+ Years

Cost: High

Eliminates/Conflicts With:

• N/A

Supports/Pairs With:

• N/A



22. Enhanced Modal Separation

<u>Project Description</u>: Enhance separation between vehicles and pedestrians on US 2 through visually appealing fence and/or vertical elements which would limit pedestrian crossings to marked-crossings and intersections. On the north side of US 2 where no on-street parking exists, barrier would be a permanent element from Front Street to 9th Street. On the south side of US 2, until on-street parking is removed, temporary planter boxes placed diagonally would be used such that people utilizing the on-street parking can open their doors and access the sidewalk.

Benefit:

• Reduces pedestrians crossing US 2 at-will, improving flow of traffic on US 2 and improving pedestrian safety.

Considerations:

 Would require temporary barrier on south side of US 2 until on-street parking is relocated.

Timeline: 0-5 Years

Cost: Moderate

Eliminates:

N/A

- Grade-Separated Crossing (Project #18)
- Parking Flex Space on US 2 (Project #37)



30. Parking Management

<u>Project Description:</u> Project would improve visitor parking opportunities through addition of more spaces including remote options, creating uniform standards to optimize existing capacity, and building on recommendations in the adopted 2017 Downtown Leavenworth Strategic Parking Plan. Initial remote parking strategies could utilize new Link Transit Park & Ride located behind Safeway, with expanded capacity as that lot is fully utilized.

Benefit:

- Create a 'Park Once' scenario for Leavenworth visitors when paired with other projects
- Eliminates congestion due to circulating traffic attempting to find parking
- Lowers number of vehicles traveling into Downtown Leavenworth

Considerations:

- Parking supply in Leavenworth is over capacity today during peak periods
- Would require active management of parking supply and messaging directing users to remote parking
- Would include need for policy changes to incentivize remote parking and cost analysis identifying locations and providing transit/shuttle links
- Required to capture full benefit of other projects

Timeline: Phased Implementation (0-10+Years)

<u>Cost:</u> Low to High (varies with strategy implementation)

Eliminates/Conflicts With:

N/A

- Center Running Transit/Emergency Services Lane (Project #17)
- Reallocation of US 2 Right-of-Way (Project #16)
- Transit-on-Shoulders (Project #49)
- Transit Shuttle Service (Project #26)
- Micro-Mobility Options (Project #27)



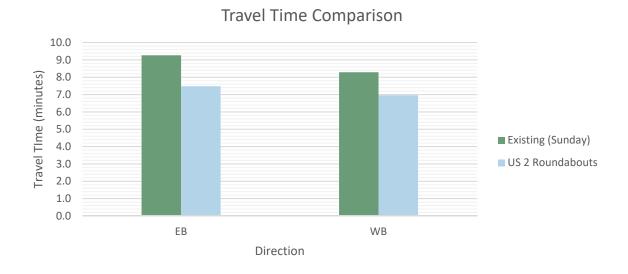
33. Roundabouts at US 2 Intersections

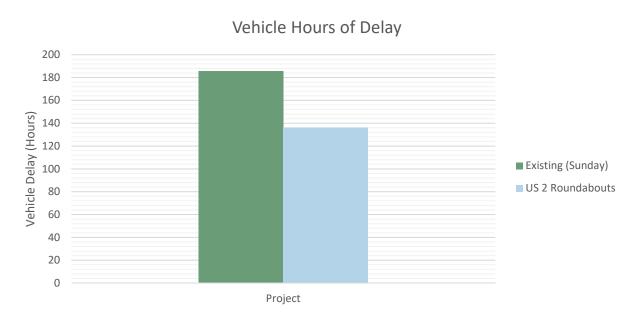
<u>Project Description</u>: Construction of single-lane roundabouts at major US 2 intersections (Chumstick/9th Street/Front Street).

Note: Also evaluated roundabout at Ski Hill Drive in addition to roundabouts noted above and tested limited access option through Downtown Leavenworth. Description above was found to provide most benefit.

Benefit:

- Improved flow for eastbound/westbound traffic on US 2
- Fewer conflict points for bicyclists and pedestrians in roundabout configuration







Considerations:

- In order to accommodate turning radius for large trucks, roundabouts will need to be large and would require additional Right-of-Way.
- Temporary traffic control options are—reduced ability to utilize extra lanes during events or emergency situation.
- HAWK at City Hall could create back-up through roundabouts unless paired with Grade-Separated Crossings.
- Vehicles must yield to pedestrians at roundabouts could significantly impact vehicle flow during events.
- Grade of 9th Street may require shifting roundabout north or closing access at 9th.

<u>Timeline:</u> 10+ Years

Cost: High

Eliminates/Conflicts With:

- Reallocation of US 2 Right-of-Way (Project #16)
- Center Running Transit Lane (Project #17)
- Signal Pre-Emption (Project #38)

Pairs With/Supports:

- Pedestrian Barrier on Sidewalk (Project #22)
- Grade-Separated Crossing (Project #18)



37. Parking Flex Space & Bicycle Lane Connection on US 2

<u>Project Description</u>: Project would transition current tour bus drop-off located next to Front Street Park into a flexible space that could serve delivery drop-offs that currently park in the center left-turn lane, tour bus drop-off, and on-street parking. Parking for delivery would be allowed during early morning hours, during week-day and non-event weekends the space would allow on-street parking. On festival or high-demand weekends when tour buses are visiting the space would be reserved for tour bus drop-off. Project would remove current on-street parking on US 2 between Front Street & Front Street Park and would connect the current bicycle lane between Front Street and 9th Street on US 2.

Benefit:

- Provides dedicated space for bicyclists on most active part of US 2 and moves bicyclists out of lane of traffic
- Provide designated space for delivery vehicle unloading
- Serve multiple users in one space (more efficient use of space)

Considerations:

- On-Street Parking Occupancy in Downtown Leavenworth is greater than 100% (includes illegal parking) today during high-demand periods.
- Deliveries occurring on US 2 should be limited to businesses with US 2 frontage, other deliveries occur on Front Street.

Timeline: 0-5 Years

Cost: Low

Eliminates/Conflicts With:

Reallocation of US 2 ROW (Project #16)

- Delivery Hours/Permits (Project #45)
- Pedestrian Barrier (Project #22)



49. Transit on the Shoulders between Leavenworth & 97

<u>Project Description:</u> Project would improve US 2 shoulders between SR 97 and Leavenworth City Limits to accommodate transit on the shoulders when congestion is occurring on US 2. This project would also include expanding current Park & Ride lot at the Y interchange to encourage drivers traveling into Leavenworth to utilize remote parking.

Benefit:

- Would allow transit to bypass high congestion on US 2 transit would operate lower than typical free-flow speeds on US 2 but would see significant improvement during congested times
- Would provide additional room for Emergency vehicles during high congestion on US 2
- Would help improve route reliability during summer weekends and festivals for Route 22
- Incentivize use of over 300 Park & Ride spaces that exist today between Wenatchee & Leavenworth and served by Route 22

Considerations:

- While project will benefit current transit users and help with route reliability, transit must be prioritized within Leavenworth to see full benefit and capture new users.
- Shoulder width and current condition varies, will be unable to accommodate transit on the shoulder for the entire length without capital improvements.

Timeline: 5-10 Years

Cost: High

Eliminates/Conflicts With:

• Spot Treatments at Local Access Points (Project #48)

- Reallocation of US 2 Right-of-Way (Project #16)
- Center Running Transit/Emergency Services Lane (Project #17)
- Employee Travel Demand Management Strategies (Project #44)



52. Bicycle & Pedestrian Improvements at Peshastin Bridge

<u>Project Description:</u> Parallel structure for bicycles and pedestrians at Peshastin Bridge providing access from Peshastin to Route 22 stops on US 2.

Benefit:

- Current bridge is narrow and only has sidewalk on one-side of bridge and lanes on the bridge are narrow, a parallel structure would provide separated facility for bicycles and pedestrians.
- Improves Main Street/ US 2 intersection to provide marked-crosswalks and sidewalk connection to Link Transit stop.
- Improves connection from new bridge end to School Street

<u>Timeline:</u> 10+ Years

Cost: High

Eliminates/Conflicts With:

N/A

- Transit-on-Shoulders (Project #49)
- Shoulder Treatments to better accommodate bicyclists on US 2 (Project #66)
- Employee Travel Demand Management Strategies (Project #44)



Travel Time Summary

(Between River Bend Drive and Icicle Road)

#	Scenario	EB (mins)	WB (mins)	Average Speed (mph)	EB Difference (mins)	WB Difference (mins)	Speed Difference (mph)
0	Observed	9.0	9.7	-	-	-	-
1	Existing (Summer Sunday)	9.3	8.3	10.3	-	-	-
1.1	Festival Baseline	33.4	20.5	4.9	-	-	-
16	Reallocate US 2 ROW	10.0	8.3	8.9	0.7	0.0	-1.4
17	Center Running Transit Emergency	22.2	9.0	6.4	-8.5	1.1	0.7
18	Grade Separated Crossing	8.4	7.0	11.9	-0.8	-1.3	1.6
19	Pine Street Connection	5.7	5.5	16.5	-3.6	-2.8	6.2
33a	Roundabouts w/o Ski Hill	7.5	7.0	12.4	-1.8	-1.3	2.1
33b	Roundabouts w/ Ski Hill	7.7	8.3	11.8	-1.5	0.1	1.5
33c	Roundabouts w/ Limited Access	14.2	8.2	7.4	4.9	-0.1	-2.9

Vehicle Hours of Delay Summary

#	Scenario	Hours of Delay	% Change
0	Observed	-	-
1	Existing (Summer Sunday)	185	-
1.1	Festival Baseline	343	-
16	Reallocate US 2 ROW	223	20%
17	Center Running Transit Emergency	350	2%
18	Grade Separated Crossing	143	-23%
19	Pine Street Connection	46	-75%
33a	Roundabouts w/o Ski Hill	136	-27%
33b	Roundabouts w/ Ski Hill	151	-18%
33c	Roundabouts w/ Limited Access	271	46%

US 2 Upper Wenatchee Valley Transportation Study Project Advisory Committee Meeting #4

September 26, 2019













Meeting Agenda

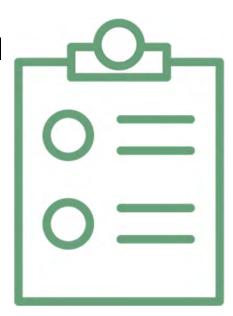
- Project Grouping: Process & Recommendations
- Project Evaluation Findings
- Project Feedback Exercise
- Project Next Steps & Overview





Meeting Purpose

- Project Team Will Share Project Grouping & Initial Project Evaluation
- Project Advisory Committee Will:
 - Help Make Sure Voices are Heard
 - Serve as Sounding Board for Project Decisions





Meeting Agenda

- Project Grouping: Process & Recommendations
- Project Evaluation Findings
- Project Feedback Exercise
- Project Next Steps & Overview





Project Selection: The Process



- serve and where?
- · What should our inform our Vision & **Guiding Principles?**
- Existing Planning & Context
- 16 Stakeholder Interviews
- Presentation of Planning Context & Needs
- **Draft Vision & Guiding Principles**
- Principles
- · Local input at Leavenworth Farmer's Market
- Development of Project Evaluation Matrix
- of Vision & Guiding Principles
- Does our criteria work?
- - Feedback on Project Team Ideas

- Public

- Summer Data Collection
- Initial Project Evaluation
- Gathered Agency Input
- Project Grouping & Evaluation
- Project Feedback



Project Selection: The Groups

Selected For Evaluation:

Projects being evaluated for potential as a recommended investment

Quick Wins & Small Steps:

Projects that could be implemented within six years and outside the scope of this project.

Vision Project:

Projects identified as part of the process that extend beyond the scope of this project due to timeline and/or funding needs.

Project Not Advancing:

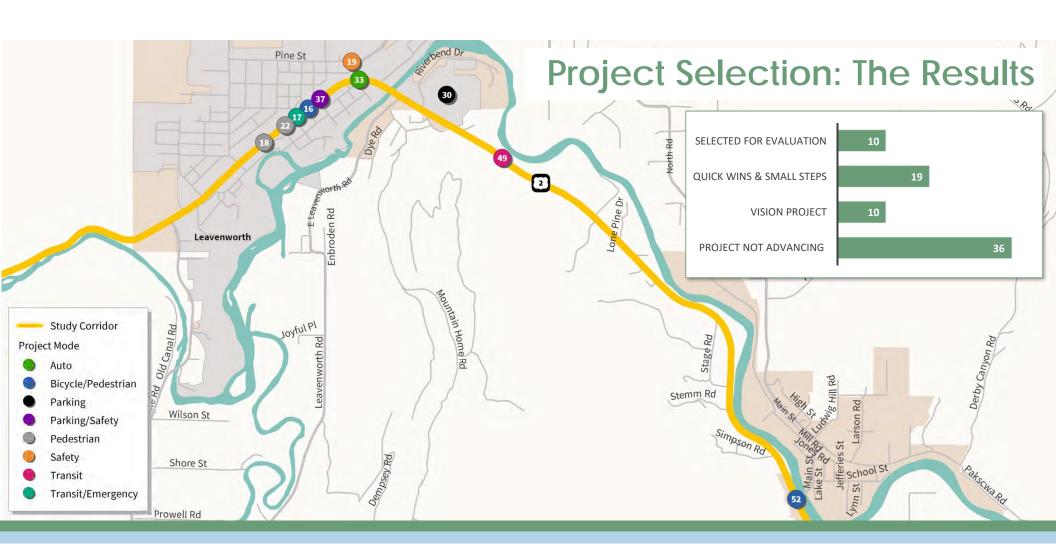
Projects identified as not advancing two or more of the Guiding Principles or that were identified to have a fatal flaw.



Project Selection: Sorting the Projects

- How do we get from 75 project ideas to the proposed groups?
 - Project Tiers
 - 3 project tiers based on scoring
 - Guiding Principles
 - Projects must improve at least **three** of the Guiding Principles
 - Project Vision
 - Advances the vision for US 2
 - Fatal Flaws
 - Is this project infeasible and why?







Meeting Agenda

- Project Grouping: Process & Recommendations
- Project Evaluation Findings



- Project Feedback Exercise
- Project Next Steps & Overview

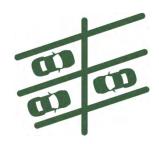




Project Evaluation: The Metrics



Safety: Improvement of a known location or conflict or improvement to user experience



Parking: Change in parking capacity or change that supports use of remote parking



Travel Time: How long it takes drivers to travel between River Bend Drive & Icicle Road



Right-of-Way: Project impact to the built or natural environment



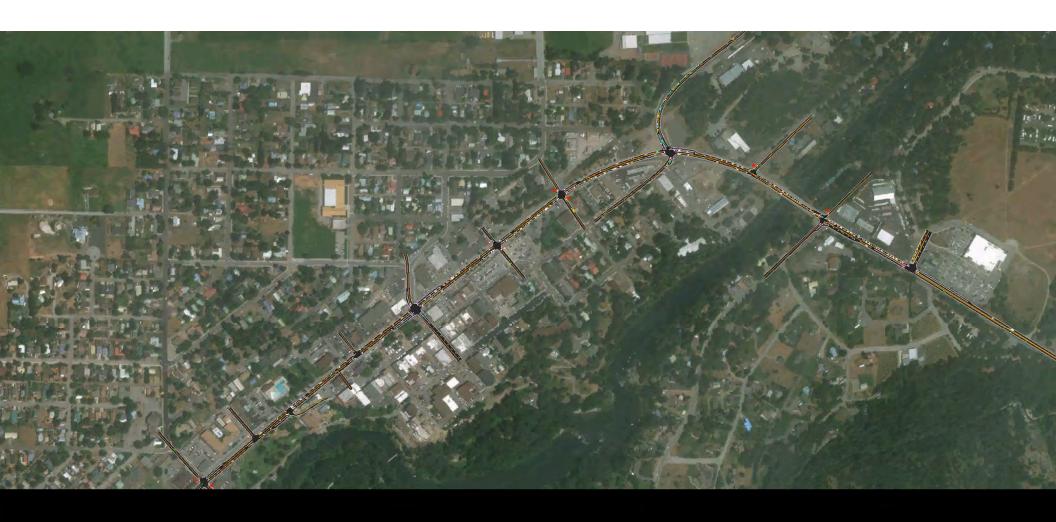
Vehicle Hours of Delay: Measure of total delay experienced by all drivers



Project Evaluation: The Approach

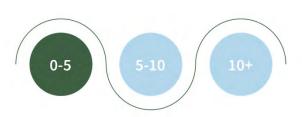
- Travel Time & Delay evaluated using SimTraffic
 - Micro-simulation tool that allows us to simulate actual conditions based on:
 - Geometry
 - Signal Timing
 - Vehicle Volume
 - Pedestrian Volume
 - First: Validation does our model actually reflect what's happening?
 - Next Evaluate projects under Summer Sunday or Festival Conditions





Project Evaluation: The Approach

- Timeline:
 - 0-5 Years
 - 5-10 Years
 - 10 Years +



- Cost:
 - Low \$0 \$400,000
 - Moderate \$400,000 \$3M
 - High \$3M+

Moderate



- Engineering Considerations:
 - Is the project known to increase safety?
 - How are multi-modal and/or freight elements integrated?
 - Does it fit within existing curb to curb width?
 - Are there Right of Way constraints?
 - What additional public coordination will be needed?
 - Is it multi-juristictional?
 - Is it practical?
 - What are the environmental constraints? (slope, utilities, buildings, etc.)



Project: Reallocate US 2 Right-of-Way (ROW)

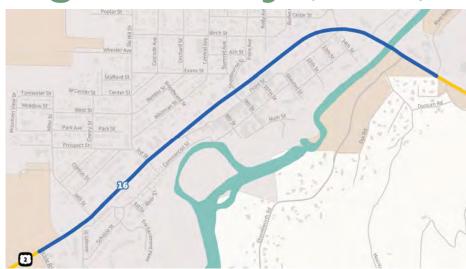
Project Description: Reallocate US 2 ROW to provide dedicated facilities for bicycles, transit, and emergency access.

Alternative A: Dedicated lane for bicyclists and transit could be used by emergency services in addition to two general purpose lanes.

Alternative B: Dedicated lane for transit operating in both directions and a two-way separated bicycle path in addition to two general purpose lanes.

Alternative C: Two-way separated bicycle path adjacent to US 2 in addition to two general







Project: Reallocate US 2 Right-of-Way

Project Benefits:

- Increased comfort for bicyclists (while transit frequency is low)
- Transit & Emergency services only experience intersection delay
- Increased buffer for pedestrians on US 2
- Encourage use of transit or circulator



Travel Time (minutes): Vehicle Hours of Delay (hours):













Project: Reallocate US 2 Right-of-Way

Considerations:

- Can be accomplished within existing ROW width, curb lines in certain areas will need adjustment.
- Need to evaluate where left turn lanes can be added at intersections.
- Right turns are legal in shared bus/bike lane
- Curb-to-curb width is tight, but size of planter areas can vary.



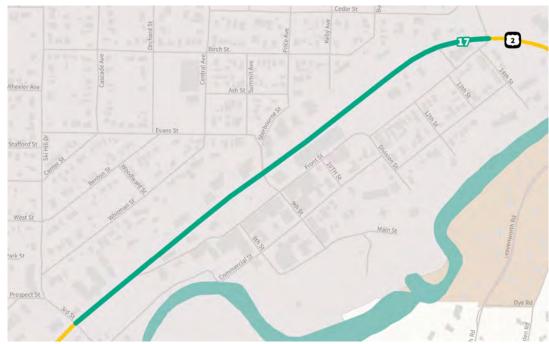




Project: Temporary Center Running Transit/Emergency Lanes

Project Description: Create a temporary transit/emergency services only lane during events or high congestion periods using the two-way-left-turn-lane



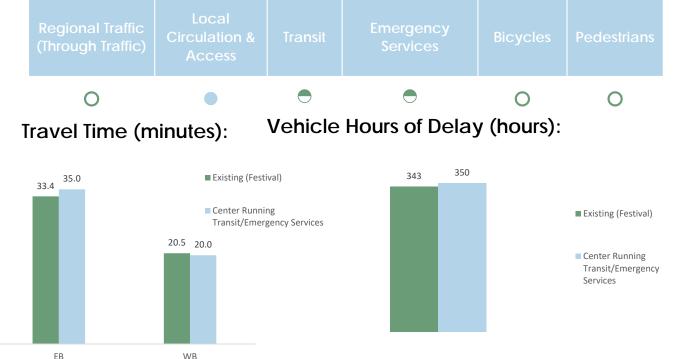




Project: Temporary Center Running Transit/Emergency Lanes

Project Benefits:

- Prioritizes transit/circulator option during events or highcongestion periods
- Improves emergency services access in/out of Leavenworth during events









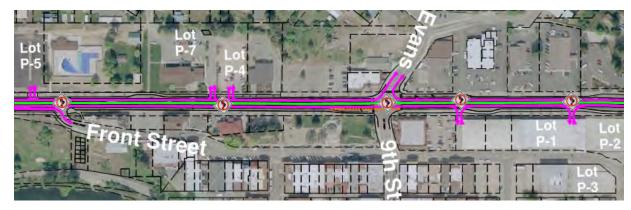


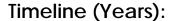


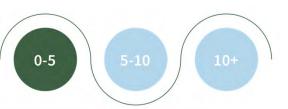
Project: Temporary Center Running Transit/Emergency Lanes

Considerations:

- Utilizes Temporary Traffic Control
- Left turns may be allowed at some intersections, but most restricted to Right-In / Right-Out
- Will require wayfinding signage for local access
- Thoughtful outreach required, along with creation of event specific traffic control plans.
- Only Link Transit and EMS could use it, as scheduling to use the lane would be critical (no tour or hotel busses)







Cost:



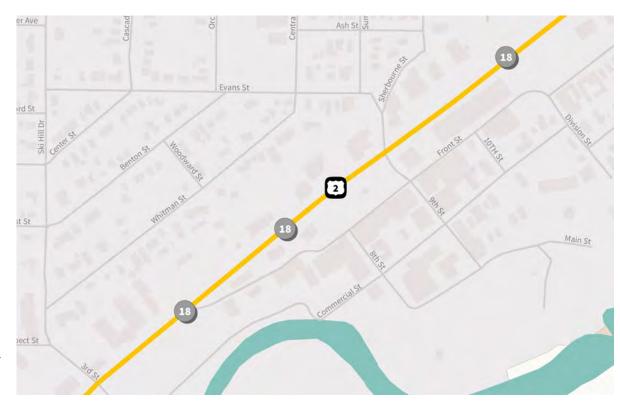


Project: Grade-Separated Pedestrian

Crossings

Project Description: This project would construct three grade-separated crossings at Front Street, City Hall, and the Park & Ride Lot separating pedestrians crossing US 2 from vehicle traffic on US 2.

- Improved experience for the large number of pedestrians crossing US 2
- Signal timing can prioritize vehicle movements along US 2
- Bridge design and decorations/lights on overcrossing could contribute to community character

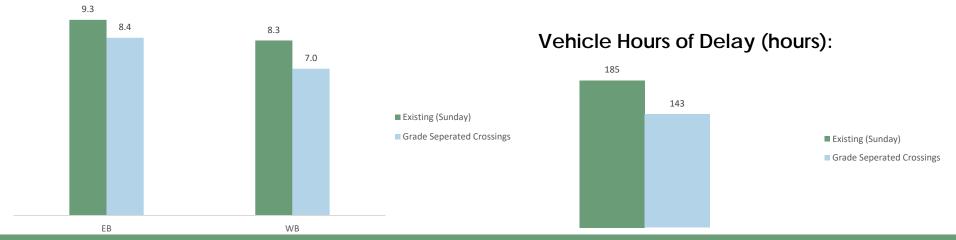




Project: Grade-Separated Pedestrian Crossings



Travel Time (minutes):











No Change

Project: Grade Separated Crossing

Considerations:

- Overcrossing or undercrossing?
- To meet ADA standards, will require long approaches to meet required minimum grades
- ROW likely required
- Should be combined with sidewalk buffers
- Locations can be prioritized with funding availability







Project: Pine Street Connection

• **Project Description:** Extension of Pine Street to include a direct connection with US 2 east of the river via a new bridge that includes dedicated bicycle and pedestrian facilities.

- Route Resiliency
- Improves local circulation and access
- Shifts local traffic from US 2





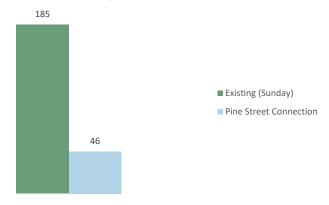
Project: Pine Street Connection



Travel Time (minutes):



Vehicle Hours of Delay (hours):











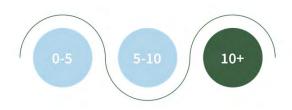


Project: Pine Street Connection

Considerations:

- Will require significant Right-of-Way acquisition
- Highest Cost Project, and long timeframe
- Extensive public outreach required
- Environmental considerations for working Wenatchee River, several permits required.
- Improvements required at Chumstick, Alpensee Strasse, and Riverbend Drive.

Timeline (Years):



Cost:



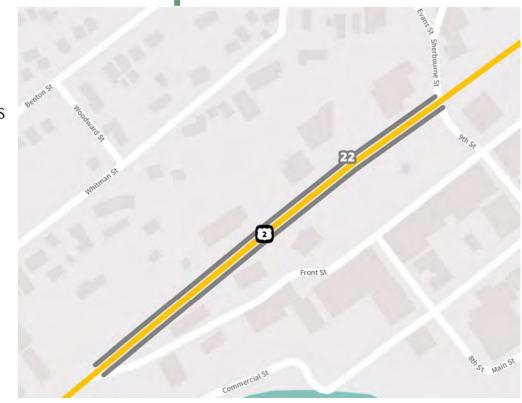


Project: Enhance Modal Separation

Project Description: Enhance separation between vehicles and pedestrians on US 2 through visually appealing fence and/or vertical elements which would limit pedestrian crossings to marked-crossings and intersections.

Project Benefit:

 Reduces pedestrians crossing US 2 atwill, improving flow of traffic on US 2 and improving pedestrian safety.





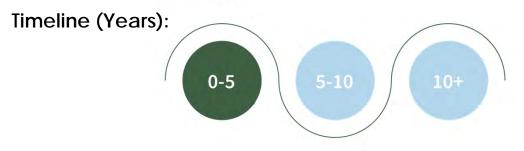
Project: Enhance Modal Separation

Considerations:

 Would require temporary feature on south side of US 2 until on-street parking is relocated



 Could be implemented as a first step for Grade-Separated Crossings















Project: Parking Management

Project Description: Improve visitor parking opportunities through addition of more spaces including remote options, creating uniform standards to optimize existing capacity.

- Create a 'Park Once' scenario for Leavenworth visitors when paired with other projects
- Eliminates congestion due to circulating traffic attempting to find parking
- Lowers number of vehicles traveling into Downtown Leavenworth





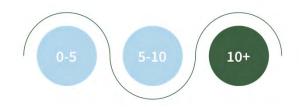
Project: Parking Management

Considerations:

- Would require active management of parking supply and messaging directing users to remote parking
- Policy changes to incentivize remote parking and cost analysis identifying locations and providing transit/shuttle links
- Required to capture full benefit of other projects



Timeline (Years):



Cost:













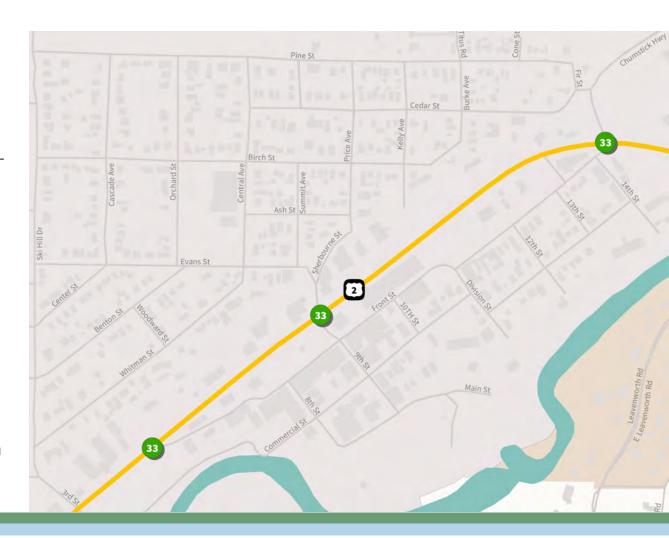
Project: US 2 Roundabouts

Project Description: Construction of singlelane roundabouts at major US 2 intersections (Chumstick/9th Street/Front Street)

Alternatives Considered:

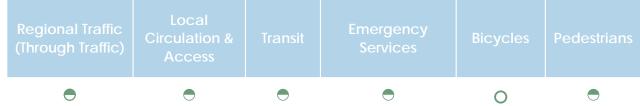
- Additional Roundabout at Ski Hill Drive
- Roundabouts paired with limited local access

- Improved flow for eastbound/westbound traffic on US 2
- Fewer conflict points for pedestrians in roundabout configuration





Project: US 2 Roundabouts



Travel Time (minutes):

Vehicle Hours of Delay (hours):









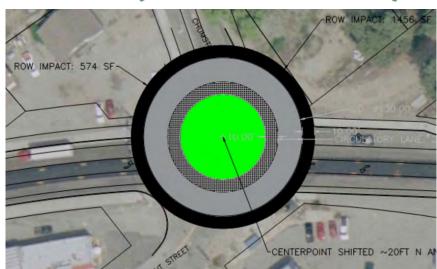


No Change

Project: US 2 Roundabouts (Chumstick)

Considerations:

- This is a very basic initial sizing doesn't account for splitter islands.
- Initial design size of inscribed circle diameter ICD) is based on allowing a WB-67 to make the turns left or right. This may not be necessary based on freight types and routes.
- With an ICD of 130' would likely need a 15-20 foot apron to make the left or right turn possible.
- It's possible to create a miniroundabout allowing trucks to drive over center apron.
- Angle of Front Street connection would require shifting the center point.







Project: Parking Flex Space & US 2 Bicycle Lane Connection

Project Description: Transition current tour bus drop-off located next to Front Street Park into a flexible space that could serve delivery drop-offs, tour bus drop-off, and onstreet parking and connect existing US 2 bicycle lane.

- Dedicated space for bicyclists on most active part of US 2 and moves bicyclists out of lane of traffic
- Provide designated space for delivery vehicle unloading
- Serve multiple users in one space (more efficient use of space)





Project: Parking Flex Space & US 2 Bicycle Lane Connection

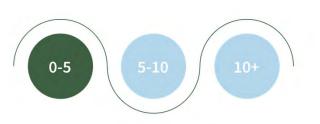
Considerations:

- On-Street Parking Occupancy in
 Downtown Leavenworth is greater than
 100% (includes illegal parking) today during high-demand periods.
- Deliveries occurring on US 2 should be limited to businesses with US 2 frontage, other deliveries occur on Front Street.

Timeline (Years):

 \bigcirc

0



Cost:







 \bigcirc





No Change

Poor

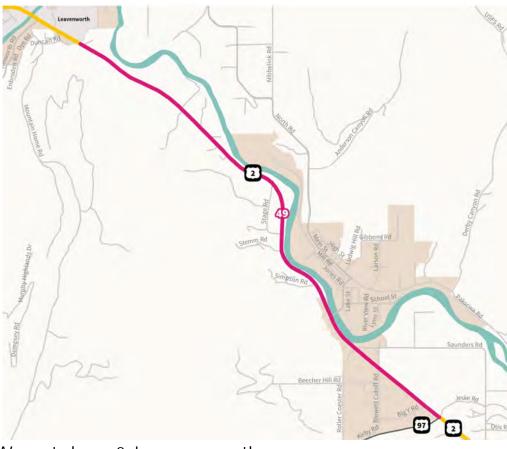
Pedestrians

0

Project: Transit-on-Shoulders

Project Description: Project would improve US 2 shoulders between SR 97 and Leavenworth City Limits to accommodate transit on the shoulders when congestion is occurring on US 2.

- Allow transit to bypass high congestion on US 2
- Additional room for emergency vehicles
- · Improve transit route reliability
- Incentivize use of Park & Ride spaces between Wenatchee & Leavenworth





Project: Transit-on-Shoulders

Considerations:

- Transit must be prioritized in Leavenworth to capture new users
- Shoulder width and condition varies



Timeline (Years):



Cost:













Project: Bicycle & Pedestrian Improvements at Peshastin Bridge

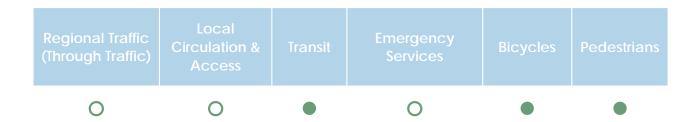
Project Description: Parallel structure for bicycles and pedestrians at Peshastin Bridge providing access from Peshastin to Route 22 stops on US 2.

- Would provide separated facility for bicycles and pedestrians
- Improve Main Street/ US 2 intersection to provide marked-crosswalks and sidewalk connection to Link Transit stop
- Improve connection from new bridge end to School Street





Project: Bicycle & Pedestrian Improvements at Peshastin Bridge



Timeline (Years):



Cost:













Meeting Agenda

- Project Grouping: Process & Recommendations
- Project Evaluation Findings
- Project Feedback Exercise
- Project Next Steps & Overview

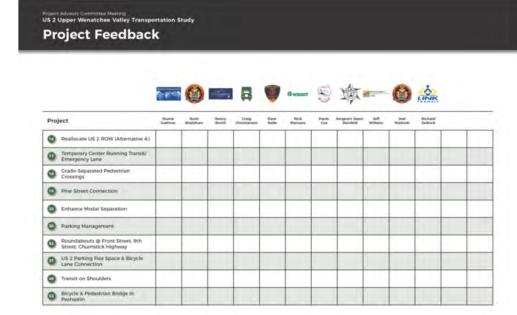




Project Feedback Exercise

We want you to tell us......

- What are you excited about? Why?
- Is there something you don't like? Why?





Meeting Agenda

- Project Grouping: Process & Recommendations
- Project Evaluation Findings
- Project Feedback Exercise
- Project Next Steps & Overview





Project Timeline & Next Steps

- Now November 1st
 - Finish Project Evaluation & Refine Based on PAC Feedback
 - Identification of Recommend Investments
 - Development of Draft Plan
- Early November
 - Next PAC Meeting Community & Leavenworth City Council Invited
- Mid-November
 - Publish Draft Plan for Community Input
- January 2020
 - Final Plan





Project Advisory Committee Meeting #4

Wednesday, September 26, 2019 11:00 AM – 1:00 PM

AGENDA ITEM #1: WELCOME

In-Person Participants:

- Penny Mabie, Envirolssues
- Jeff Wilkens, CDTC
- Nancy Smith, Leavenworth Chamber of Commerce
- Duane Goehner, Citizen, Friends of Leavenworth
- Joel Walinski, City of Leavenworth
- Kendra Breiland, Fehr & Peers
- Kara Hall, Fehr & Peers
- Bianca Popescu, Fehr & Peers
- Jennifer Saugen, Perteet
- Pete Collins, Rick Williams Consulting
- Sergeant Jason Reinfeld, Chelan County Sheriff
- Nick Manzaro, WSDOT
- Richard DeRock, Link Transit
- Josh Patrick, Chelan County
- Dave Nalle, Chelan County Fire Department
- Scott Bradshaw, City of Leavenworth Planning Commission

In-Person Observing:

- Richard Warren, WSDOT
- Jim Mahugh, WSDOT
- Lilith Vespier, City of Leavenworth

Purpose of Meeting: Present PAC Members with Project Grouping & Project Evaluation Findings. Ask PAC Members for Feedback on Projects Evaluated.

AGENDA ITEM #2 - PROJECT GROUPING

- Process To Date:
 - o PAC Input

- Which users do we serve where along the corridor?
- What should inform the Vision & Guiding Principles?
- Adoption of Vision & Guiding Principles
- What metrics should we use to evaluate project ideas?
- Does our criteria work?
- Feedback on Project Selection & Evaluation (Today)

Public Input

- Survey for Vision & Guiding Principles Community selected Safe & Complete and Reliable as two most important principles.
- Local input collected at Leavenworth Farmers Market
- Online Project Map
 - Input on our Ideas
 - New Ideas

o **Project Team**:

- Developed Vision & Guiding Principles for Input
- Existing Planning & Context Memo
- Holiday & Summer Data Collection
- Project Evaluation Matrix
- Project Grouping
- Selected Project Evaluation
- Gathered Agency Input on Project Ideas

• Project Groups:

- Selected for Evaluation: Projects evaluated in more detail, focus of PAC Meeting #4
- Quick Wins & Small Steps: Projects that can be implemented within six years, could be moved forward by responsible agency with additional focus from this study.
- Vision Project: Project outside scope of this study due to extend timeline for implementation or funding.
- o Project Not Advancing: Project screened through evaluation matrix.

Project Grouping Process:

- o 75 projects total Split into Tier 1,2,3 based on scoring
 - Projects scoring 20 or less points out of 60 points were considered Tier 3
 - All Tier 3 Projects Screened
- Projects Must Advance Three or More Guiding Principles including top two identified by the community (Safe & Complete, Reliable)
- o Project must align with Vision for US 2
- o Does the Project Have A Fatal Flaw?
- Results:
 - 10 Projects Selected for Evaluation
 - 19 Quick Wins & Small Steps
 - 10 Vision Projects
 - 36 Not Advancing

AGENDA ITEM #3 - PROJECT EVALUATION FINDINGS

• High level project evaluation metrics:

- Safety: Improvement or elimination of known area of concern, or improves user experience.
- Travel time: How long does it take to drive between Icicle Road & River Bend Drive?
- Parking: Does the project change the parking supply? Encourage more efficient use of existing supply? Does the project encourage use of remote lots?
- Right of Way: Impact to the built or natural environment.
- Vehicle Hours of Delay: Measure of total delay experienced by drivers.
- The traffic approach of project evaluation
 - Utilized SimTraffic to evaluate Travel Time & Vehicle Hours of Delay.
 - State of the Practice Microsimulation tool used to simulate actual conditions on the corridor considering:
 - Signal timing and geometry
 - Vehicle Volume
 - Pedestrian & Bicycle Volume
 - Driver Behavior
 - First step is validation to be sure we are accurately representing the corridor.
 - Visual inspection and travel time in the simulation must match collected travel time within 15%.
 - Travel Time data collected on a Friday & Sunday.
 - Used Sunday volumes since they were slightly higher as our baseline conditions
 - Projects recommended for use only during Festivals/Events were analyzed using data collected during Tree Lighting
- Project Timeline:
 - Short-Term 0-5 Years
 - Mid-Term 5-10 Years
 - Long Term 10+ Years
- Cost:
 - Low \$0-\$300K
 - Moderate \$300K \$3M
 - High \$3M
- Design Considerations:
 - Safety elements that would need to be included
 - Multimodal or freight elements required
 - Does it fit within existing curb to curb?
 - Right-of-Way (ROW) constraints
 - Additional public coordination based on timeline, cost
 - Multi-jurisdictional
 - Environmental constraints
 - Utilities may need to be moved
- Projects Presented (See Attachment for Project Description & Findings)
 - Reallocate US 2 ROW
 - Temporary Center Running Transit/Emergency Lane

- Grade-Separated Pedestrian Crossings
- Pine Street Connection
- Enhanced Modal Separation
- Enhanced Modal Separation
- US 2 Roundabouts
 - PAC Member Question: Do we expect roundabouts to operate well enough not to back-up through roundabouts and limit local street access to US 2.
 - Kara noted that while we are doing additional analysis for roundabouts to understand what the gaps will be allowing local trips to access US 2, current results do not indicate spill-back through roundabouts limiting local access.
 - PAC Member Question: Do we expect the large number of pedestrians to impact roundabout operations?
 - Kara noted that pedestrian volumes, especially during event traffic, are
 a concern for this alternative. There are multiple options for pedestrian
 treatments at roundabouts that we will be considering as we continue
 to evaluate roundabouts.
- Parking Flex Space & US 2 Bicycle Lane Connection
- Transit-on-shoulders
- Peshastin Bike & Pedestrian Bridge with Transit Connection

AGENDA ITEM #4 - PROJECT FEEDBACK EXERCISE

- Each PAC Member provided two dots to select projects they like, could also cross out project not supported.
- Projects Not Supported:
 - o Project # 17 Temporary Center Running Lane
 - Not most efficient use of ROW/Transit
 - o Project #33 Roundabouts
 - Concern for high-pedestrian numbers and elimination of other projects
 - Concern for roundabouts during high demand periods need more analysis
 - o Project #19 Pine St connection
 - So close to existing US 2 Bridge should we just widen existing bridge?
 - US 2 / River Bend Drive already operates poorly concern for impact from changes at that intersection.
- Projects Supported:
 - o Project # 16 Reallocating US 2 ROW Most supported project
 - Chelan County Sheriff likes that there are now four lanes to work with and that emergency vehicles using transit lanes. Useful during festival events, drawback is vehicles not turning right using lane.
 - Link Transit Support for concept for concern for Business Access Transit lane because people utilize lane when they aren't turning right. Illegal use is very hard to enforce under current legislation. May be able to control with barrier.

Center running transit lane may make more sense with pedestrian islands for stops.

- Other Input:
 - Snow removal may be fatal flaw for physical barrier
 - Need to maintain left-turns at intersections, especially front street
- Project # 18 Grade-Separated Pedestrian Crossing
 - WSDOT Input:
 - Paris well with Reallocating ROW
 - Water Table may be fatal flaw for undercrossing option but either option could be designed to work well
 - Chelan County Sheriff:
 - Currently all traffic has to be stopped to move pedestrians on US 2 during events, this could bypass need to do that and keep traffic moving.
 - Chelan County Fire:
 - Many close calls with pedestrians occur at night separation of vehicles and pedestrians could eliminate this
 - Other Input:
 - Overcrossing could be an issue with snow and ice would need to have a roof
 - Some members think community would support, others think community support may be limited
 - Some locals might prefer to see money allocated to other investments like parking
 - Either over/undercrossing would work, but need to ensure they are designed to get usage
 - Needs to be paired with option to limit ability to cross US 2 between over/undercrossing.
- o Project # 19 Pine Street Connection
 - Leavenworth Planning Commission Long term solution, Leavenworth needs bypass
 - Could consider alternative locations
- o Project #22 Enhanced Modal Separation
 - Support for cost-effective solution in support of other projects
- o Project #30 Parking Management
 - Planning Commission: Good short term solution to get traffic off the street
 - Good short term way to get traffic off of the street
 - Need to utilize signage & apps
 - Get people in /out quickly, reduce circulation as people are looking for a spot
 - CDTC- Do the best with what you have, positive momentum in town right now for parking solutions
 - WSDOT think it has to happen regardless, city currently pursuing implementation of some recommendations

- City of Leavenworth

 reallocating US 2 will help people use the further parking, along with a shuttle service
- Project #33 Roundabouts
 - Chelan County Support for roundabouts paired with Grade-Separated crossings
 - Noted consideration for signals at end of the corridor
 - Chamber of Commerce noted existing bottleneck locations like E.
 Leavenworth Road and Ski Hill Road should be considered.
 - Planning Commission noted concern for driver demographic and understanding
- o Project # 49 Transit-on-Shoulders
 - Link Transit Project would help with need to get to P&R with shuttles and incentive use of existing Park & Rides between Wenatchee and Leavenworth
 - Concern for cost because it could be more expensive than it appears
 - WSDOT- supports project with considerations for existing structures
 - Kendra noted that other ITS solutions like queue jumps and preemption could be utilized to limit impact
- Project # 52- Peshastin bicycle/ped bridge
 - Link Transit noted that the cost of turning into Peschastin costs approximately \$250,000 per year, improvements with transit stop would save 6 minutes from route time and the current configuration is a barrier to ridership in the area
- Lighting Round Where would you put a third dot?
 - Leavenworth Planning Commission Transit-on-Shoulders
 - Chelan County Reallocate US 2 ROW
 - Chelan County Sherriff Parking Management
 - CDTC Pine Street Connection
 - Chelan County Fire Parking Management
 - Link Transit Peshashtin Bike/Ped Bridge & Transit Connection
 - o Leavenworth Chamber of Commerce Pine St connection
 - WSDOT Transit-on-Shoulders
 - Friends of Leavenworth/Citizen Reallocating ROW
 - o City of Leavenworth Pine Street Connection

AGENDA ITEM #5 - NEXT STEPS

- Now November: Finish Project Evaluation & Refine Recommended Investments based on feedback from today
 - Kara noted this will rely on feedback today, Project Guiding Principles & Vision and Practical Solutions Framework
- Next PAC meeting early November Community and City Council Invited
 - o Festhalle location potentially? Or high school?
 - Would be evening format
- Mid-November: Publish draft for community input on website, PAC will help us share this
 information
- January 2020 Final Plan

Project Advisory Committee Meeting #5

January 29, 2020



PROJECT ADVISORY COMMITTEE MEETING

Wednesday, January 29, 2020 Leavenworth City Council Chambers 11:00 AM - 1:00 PM

AGENDA

Purpose of the Meeting:

Topic	Facilitator	Time
1. Welcome	Penny Mabie	10 min
Project Analysis & Fatal Flaws	Kara Hall/Jenn Saugen	20 min
3. Recommended Investments	Kara Hall/Jenn Saugen	60 min
4. Upcoming Community Input Opportunities	Penny Mabie	15 min
5. Project Next Steps	Kara Hall/Jeff Wilkens	15 min













Fatally Flawed Projects

Twelve project ideas were identified as having a fatal flaw that would make them either infeasible to implement or inconsistent with the ultimate goals of this US 2 corridor plan. Fatal flaws were identified through input from the community, stakeholders, the PAC, and in some cases through technical evaluation.

All projects identified as having a fatal flaw can be found in the Project Evaluation Matrix in **Appendix E**. Four major capital investments that were found to be fatally flawed are summarized below.

Roundabouts at Primary US 2 Intersections

One question that has been frequently asked is if converting US 2 intersections to roundabouts would better manage traffic by improving local access to US 2 and removing signal delay. The project team evaluated the feasibility of constructing roundabouts at three major US 2 intersections: Ski Hill, 9th Street, and Chumstick Highway. Through the project evaluation process, this project was identified as a Tier Two project using the Project Evaluation Matrix. The project also received community and PAC member support and advanced four of the five Guiding Principles (Safe & Complete, Reliable, Vibrant, and Supported). As a result, a traffic simulation analysis of this project was performed.

The evaluation of this project in greater detail led to the identification of two fatal flaws: queueing on US 2 and the inability to implement temporary traffic control once roundabouts were in place.

Simulation of the US 2 corridor through Leavenworth with roundabouts at these intersections indicated that on a summer weekend queueing along the corridor would spillback into upstream roundabouts creating operational failures. The analysis also indicated that heavy through traffic flows on US 2 would result in relatively few gaps for traffic from local streets to enter the roundabout, which could exacerbate high delays for residents and traffic attempting to access US 2.

Another key limitation of roundabouts is the inability to deploy temporary traffic control measures. Given the dynamic nature of Leavenworth and the need for flexible traffic management during events like Oktoberfest and the Tree Lighting Festival, or even more critically, during a natural disaster, the limited flexibility associated with roundabouts was also identified as a fatal flaw. For example, in the event an evacuation was needed, the current two-way-left-turn lane could be repurposed as a receiving lane to add capacity in the eastbound direction. With a roundabout in place, this repurposing of space would no longer be possible.

Identification of these two fatal flaws resulted in the recommendation that this project be removed from further consideration as part of this study.





US 2 Widening

When the traffic volume on a roadway exceeds capacity and results in heavy congestion, as is experienced during peak times on US 2, one of the most apparent solutions is to widen the roadway. With approximately 60 feet of space between curbs on US 2 through Leavenworth, the widening of US 2 from two general purpose lanes and a two-way-left-turn lane to four general purpose lanes was considered.

While additional capacity through Leavenworth could reduce delay for through trips on the corridor, impacts to local access, parking, bicycle lanes, and sidewalks would be substantial. Right-of-way exists to accommodate four lanes of travel, but maintaining local access at US 2 intersections would require the removal of parking both on-street and in some business parking lots along the corridor. This would also require sidewalks along US 2 to be narrowed throughout Leavenworth. Widening the highway would also eliminate the ability to accommodate bicyclists on US 2 as it would require removal of the existing on-street bicycle lanes. This would force bicyclists to choose another route through Leavenworth or use the sidewalk with pedestrians.

With any roadway widening project, one important consideration is induced demand. As a result of the congestion that occurs today on US 2 through Leavenworth, it is likely that there are additional users who want to travel on US 2 but choose not to. These users may be taking alternate routes, either local or regional, shifting their travel to off-peak times, or using alternative modes like biking or walking. As widening US 2 through Leavenworth would be expected to reduce congestion and make traveling on US 2 more appealing, this may lead to users altering their routes, travel times, or mode choices, resulting in an increase in demand on US 2.

Lastly, for US 2 widening to be truly effective, the widening would need to extend all the way to SR 97. Through a micro-simulation evaluation of two-lane travel through Leavenworth, the simulation indicated that at the east end of Leavenworth, the transition from two through lanes of travel to a single through lane would create a bottleneck resulting in significant queueing and congestion.

A high-level cost estimate developed for widening US 2 from the west end of Leavenworth to SR 97 resulted in a cost of \$32,000,000. ¹Given the costs required to widen US 2 through this entire section and the impact of widening US 2 to local access and biking on the corridor, this project was identified as not feasible and removed from further consideration.

¹ Cost-estimated using estimated cost per mile for roadway improvements developed by Arkansas Department of Transportation. Costs for widening from a 2 lane to 4 lane roadway in an urban area we determined to be most applicable to the Leavenworth section. Given the extent of rock blasting and bridge widening determined necessary for widening between Leavenworth and SR 97, costs associated with construction of a new roadway in a mountainous area were determined to be most applicable to that section. This cost estimate does not include a number of other likely costs, such as right of way acquisition.





Improving Parallel Routes

Another question that often comes up is whether there's the opportunity create a US 2 bypass or sufficiently improve parallel routes to offer a viable US 2 alternative. To answer this question, the project team considered what it would take to improve three potential US 2 alternatives.

Icicle Road to East Leavenworth Road

The first route considered, Icicle Road to East Leavenworth Road is an alternate route for the segment of US 2 through Leavenworth. This route provides access to resorts and residential areas located in Chelan County. Both Icicle Road and East Leavenworth Road are two-lane roadways; however, Icicle Road has paved shoulders wide enough to accommodate bicyclists, while East Leavenworth Road has no shoulders. Both roadways are also heavily utilized by bicyclists and other recreational modes of travel and have direct access to residential driveways.

Improving this route to serve as an official alternate to US 2 through Leavenworth would require substantial improvements to both Icicle Road and East Leavenworth Road. On East Leavenworth Road, widening would be required to provide a dedicated space for bicyclists or other non-motorized modes that is separate from vehicles. Increased demand on these roadways would also require significant improvements to the pavement and increase on-going maintenance costs as trucks and recreational vehicles degrade pavement faster than passenger-cars. A high-level cost estimate for this project indicates that roadway reconstruction with needed widening to improve the roadway for more consistent use would be approximately \$15,000,000.²

While the costs of capital improvements and the on-going maintenance that would be required for these roadways is one consideration in this project's feasibility, the intended use of the roadway must also be considered. This area provides public access to several recreational areas, including trailheads and Icicle Creek, some of which are located directly adjacent to the roadways. Land use in this area is mostly residential, with many residents having direct access to both Icicle Road and East Leavenworth Road. With no other route options into Leavenworth, these residents would be heavily impacted by use of these roadways as an alternate route. This impact to residents led to this project being unsupported by project stakeholders and ultimately identified as having a fatal flaw likely to prohibit the project from moving forward.

North Road to Chumstick Highway

A second route that was considered as an option to bypass both Leavenworth and Tumwater Canyon is North Road to Chumstick Highway, which connects to SR 207 before reconnecting with US 2 at Coles Corner.

Chumstick Highway is a narrow two-lane road with hairpin curves that prevent large trucks from using this route. North Road is also a narrow two-lane roadway with no shoulder. North Road is

² Cost-estimated using estimated cost per mile for roadway improvements developed by Arkansas Department of Transportation. Assumes 10 lane-miles of reconstruction for a rural non-freeway facility.





also heavily used by the agricultural land uses between Peshastin and the connection to Chumstick Highway.

This route was identified as having several fatal flaws by the project team and stakeholders. The first being safety. While Chumstick Highway is currently used as an alternative route when Tumwater Canyon is closed, encouraging more use of this route would require significant safety improvements. These improvements would require straightening of roadway to eliminate hairpin curves on Chumstick Highway that make it inaccessible to some vehicles. On North Road, an increase in traffic volumes (which would include general purpose traffic and agricultural vehicles) would also require safety improvements such as widening to provide shoulders.

The construction and widening of shoulders along with improving horizontal curves, signage and safety, between Fox Road and Nibblelinke Road was identified as a 20-year project in Chelan County's Transportation Element. The planning level cost estimates for these improvements resulted in an estimate of \$3,500,000 and account for only 1.5 of the four miles of North Road that would need to be improved. Assuming improvements on North Road are likely to cost approximately \$2,300,000 per mile, based on previous estimates completed, this project is likely to cost nearly \$10,000,000. The cost alone would likely make these improvements infeasible, but paired with the fact that this alternate route would require substantial out-of-direction travel, this was also considered to be a fatal flaw for this project. On a typical summer weekend, travel time between the east side of Leavenworth and Coles Corner is estimated to be 22 minutes on US 2. Using Chumstick Highway to bypass Leavenworth and Tumwater Canyon is estimated to be 34 minutes, a 50 percent increase in travel time due to the longer distance even when considering congestion in Leavenworth.

Lastly, this alternate route was not supported by project stakeholders or the community. Community input noted that this route is heavily utilized by not only bikers, but cross-country skiers, and people accessing the Wenatchee River, a major concern when considering increasing not only traffic volume, but freight vehicles. The community and stakeholders also noted the concern for ongoing maintenance costs as a major concern for this project.

With costly safety improvements required, no way to make the route travel time competitive, and no support, this project was eliminated from further consideration.

Leavenworth Bypass

A third alternative route option that has been discussed in the Upper Wenatchee Valley since the 1960's is the idea of constructing a bypass that would take US 2 around both Tumwater Canyon and Leavenworth.

A reconnaissance report developed by WSDOT in 1965 evaluated the idea of US 2 leaving the current alignment at Merritt, just west of Coles Corner, following the existing SR 207 and Chumstick Highway alignment, before rejoining the current US 2 alignment just west of Peshastin. While the concept was never advanced, as congestion on US 2 has continued to increase through Leavenworth and Tumwater Canyon, the question of "would a bypass solve US 2 congestion?" continues to be asked.





The primary benefit of a bypass is to move more of the regional through trips that don't have an origin or destination in Leavenworth to a separate route that is unaffected by local traffic. In theory, through traffic could continue at higher speeds and would no longer impact Leavenworth's local mobility during the summer season.

Similar to the other alternate route options, the costs of this bypass far exceed the potential benefits. At an estimated \$2,300,000 per mile this 18 mile bypass would likely cost over \$40,000,000 to construct. The most feasible option for a Leavenworth bypass, consistent with the idea evaluated in the 1960's would follow SR 207 and Chumstick Highway, a route with many fatal flaws as discussed above. All other potential routes would require constructing a new route through the Cascades, which would still require out-of-direction travel, significantly reducing the potential travel benefit. As such, this alternate route was also considered fatally flawed.





US 2 Roundabout at Icicle Road

PROJECT DESCRIPTION

This project would construct a single-lane roundabout at the intersection of Icicle Road and US 2. Paired with center-island landscaping, a display of public art or a sculpture, and Bavarian-themed signage, the roundabout would create an opportunity to create a gateway to Leavenworth as visitors arrive from Tumwater Canyon. Located at the western terminus of Link Transit's Route 22, this project would also create an improved turn-around for transit and shuttles operating on the US 2 corridor through Leavenworth.



PROJECT BENEFITS

- (Improved local access to US 2
- A western gateway to Leavenworth
- ✓ Improved transit and shuttle circulation

This project would improve access for locals using Icicle Road to access homes or jobs without impacting travel times or congestion on US 2. Today, US 2 through traffic has priority at the intersection over traffic turning left onto Icicle Road and traffic on Icicle Road, which is stop-controlled. This configuration forces locals to wait for gaps in traffic on US 2, which can be difficult during periods of high congestion. With roundabout control at this intersection, all approaches would be yield-controlled, giving more equal opportunities for local and through traffic. A roundabout configuration would also improve safety at the intersection by reducing speeds and limiting opportunities for severe collisions.



Example of a roundabout paired with public art in Pueblo, CO Source: Colorado Public Radio. 2018

The Icicle Road intersection marks the transition of US 2 from a mountainous highway to Leavenworth's "main street". Installation of a roundabout would reinforce this gateway, by slowing speeds paired with signage and landscaping that would serve as a way to alter driver expectations and behaviors from the nearly 65 mile stretch of US 2 across the Cascades.

Moreover, landscaping features of a roundabout provide the opportunity to incorporate Bavarian-themed elements, reinforcing the unique identity of Leavenworth.

The intersection is also the western terminus of Link Transit's Route 22. The current configuration of the intersection requires transit operators to make a left-turn onto lcicle Road before pulling into the gas station on the southeast corner of the intersection and using the parking lot as the turnaround before continuing eastbound. Construction of a roundabout and relocating the transit stop from the parking lot to US 2 would improve transit service and efficiency at the west end of Leavenworth.

GUIDING PRINCIPLES

Reliable

The roundabout improves local access onto the US 2 corridor, while not diminishing through traffic.

Safe & Complete



The roundabout enhances corridor safety, but slowing down vehicle speeds and significantly reducing the risk of serious collisions. The roundabout also provides a more complete facility for transit by providing a more formal turn-around.

Vibrant



Paired with landscaping, public art or a sculpture, and signage, this project would create a unique and welcoming gateway into Leavenworth for visitors traveling on US 2. This project would also serve as a point to transition drivers from the mountain highway driving through Tumwater Canyon, to the slower speeds and behaviors needed when driving on a "main street".

Realistic



This project is the lowest cost capital project recommended and can be completed almost entirely within available right-of-way.

Supported



This project was not only added by the community as part of the engagement process, but also received over 60 "likes" on the online map.

ADDITIONAL CONSIDERATIONS

Temporary Traffic Control

Roundabout control limits the opportunity to deploy temporary traffic control measures. While queueing reaching Icicle Road was not observed this should be considered in evacuation planning.

Maintenance & Art Costs

While the roundabout would be constructed on a WSDOT facility, any WSDOT fund contributions would not cover the addition of art or other visual enhancements to create a visual gateway to Leavenworth.

COST





Parking Management

PROJECT DESCRIPTION

This project identifies parking management strategies that support and build on strategies recommended as part of the Downtown Leavenworth Parking Management Plan and in some cases, identified for implementation in the near-term by the City of Leavenworth Parking Committee. Strategies identified and recommended as part of this study, maximize efficient use of the parking supply such that visitors can easily find parking, reducing congestion in Downtown that results from cruising for parking. This strategy would also and allow the City to flexibly manage parking during high demand events.

Strategy 1: Allocate remote parking for employees that work in Downtown. With the recent transition of the WSDOT lot to City ownership, a portion of the available capacity in this lot would be allocated to employee parking. This lot is adjacent to the US 2/Mill Street transit stop, which would connect employees parking at this location to jobs in Downtown. Creating employee parking at this lot would also be supported by the TDM Strategies and Bike/Scooter Share projects discussed in the Considered Investments section and the US 2 Ski Hill to River Bend Streetscape Improvements project.

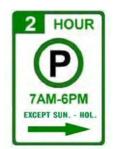
Strategy 2: Make other remote options available to employees. Any unused capacity at the existing Willkommen Village could also be utilized followed by the paid use of parking in private-lots for employees,

Strategy 3: Active management of on-street parking Downtown. Once employees have adequate options to park remotely and connect to jobs in Downtown, measures including paid on-street parking and time-restricted parking in Downtown should be deployed to ensure that employees utilize remote parking opportunities leaving spaces in Downtown available for visitors.

Strategy 4: Event-specific parking management. With an active management plan for parking in place, the City would be able to transition use of the parking supply during large events. During events demanding large amounts of parking, the City could transition some of the parking available to employees with additional incentives available to employees to travel to Leavenworth by rideshare or public transit during events and festivals. This would allow the City to better accommodate and manage the parking required for festivals, without construction of additional remote parking facilities.

PROJECT BENEFITS

- A parking system that visitors can easily navigate
- The flexibility to transition parking between employees and visitors
- A system that allows visitors to park once



2-Hour Parking Sign Source: City Of Seattle, 2020

Turnover of parking in Downtown Leavenworth was measured to be below typical parking turnover rates when data was collected for the Downtown Parking Management Plan. The data indicated that parking spots in Leavenworth were turning over approximately half as often as the industry average. This was believed to be a result of employees using on-street parking in Downtown. By shifting employees to parking located outside of Downtown connected by transit, parking in Downtown would be more frequently available to visitors near their destination. This would limit the need for people

unfamiliar with Leavenworth to circulate through Downtown looking for parking, improving not only the parking system, but also reducing congestion in Downtown.

Today, management of parking within Leavenworth for events and festivals requires starting from scratch each time management is needed and relies on parking lot owners to actively manage their parking supply. By putting management strategies in place, first focused on the management of employee parking, those systems can be leveraged to more efficiently manage the supply during times of high demand.



Example of On-Street Parking Meters Source: City of Lexington,KY

These strategies paired with other Considered and Recommended Investments would help to create a "park once" experience for visitors in Leavenworth. With the ability to transition remote parking to visitors and have transit and bike/scooter share options in place, visitors can park and easily navigate between destinations using other modes.

GUIDING PRINCIPLES

Vibrant



Several strategies recommended as part of this project focus on more efficiently parking employees, which creates more opportunities for parking visitors.

Realistic



Many of the management strategies recommended as part of this project can be implemented without significant costs and within the near-term (less than five years).

Supported



Project stakeholders, PAC members, and community members have all expressed support for parking management strategies as part of this study.

ADDITIONAL CONSIDERATIONS

Support of Other Projects

Recommendations above would support the US 2 Ski Hill to River Bend Streetscape Improvements Project, Transit-on-Shoulders, and Bike/Scooter Share Projects, and TDM strategies. These management strategies would ensure that Leavenworth's parking system has adequate capacity in strategic locations encouraging visitors to park and then leverage other mode choices to travel within Leavenworth.

Increased Transit Service

As Link Transit continues to increase service on Route 22 over the next several years and continues the operation of the circulator shuttle to complete Route 22 within Leavenworth, the use of transit by employees participating in TDM programs will continue to increase.

The Downtown Parking Plan

While many of the strategies recommended as part of this study are also documented in the Downtown Parking Plan, recommendations in the study are strategies that would provide meaningful benefit to the US 2 corridor as a whole and support other recommended investments. The continued implementation of other strategies documented in the Downtown Parking Plan, not discussed in this plan, will continue to contribute to improving Leavenworth's transportation system.

COST

Cost for this project would vary depending on implementation of recommended strategies.



Peshastin Bicycle & Pedestrian Transit Connection

PROJECT DESCRIPTION

This project would construct a bicycle and pedestrian bridge adjacent to the existing Main Street Bridge in Peshastin. The parallel bridge would accommodate non-motorized modes and provide an all-ages, all-abilities connection to an improved Peshastin transit stop at the US 2 and Main Street intersection. Improvements to pedestrian facilities between the new bridge and School Street would be completed as part of this project, as would enhanced crosswalk markings connecting the bridge to the improved transit stop.



PROJECT BENEFITS

- An all-ages all-abilities bicycle and pedestrian bridge to Peshastin that connects to transit
- Transit travel time savings between Wenatchee and Leavenworth

The narrow Main Street Bridge has an outdated design without opportunity for expansion to better serve non-motorized modes. By constructing a separate, parallel footbridge the project would accommodate bicyclists and pedestrians on a separate facility that would be accessible and comfortable for people of all ages and all abilities with a direct connection to transit.

To serve Peshastin, Route 22 must currently divert off of US 2 over the Main Street bridge. This loop into Peshastin adds six minutes to the route travel time, resulting in higher costs to operate the route and less competitive travel times compared to driving. The additional six minutes is estimated to add \$250,000 in operating costs to Route 22 over the course of one year. By creating a connection and improved stop on US 2, this project would lower operating costs while improving travel time and reliability.



Bicycle & Pedestrian Bridge Source: Public Square, 2018

GUIDING PRINCIPLES

Reliable

With the travel time savings from eliminating the loop into Peshastin, Route 22 would operate more efficiently with better on-time performance making transit a more attractive and reliable option.

Safe & Complete



A parallel facility would serve both bicyclists and pedestrians of all-ages and abilities through the separation from vehicles crossing the Wenatchee River.

Vibrant



The addition of an all ages, all abilities bicycle and pedestrian bridge serves the dual purpose of making transit more efficient and creating an amenity that could benefit outdoor recreation along the US 2 corridor.

Supported



Both Link Transit and community members have expressed support for this project.

ADDITIONAL CONSIDERATIONS

Cost-Benefit

This project would result in a direct cost-savings for Link Transit. With an estimated savings of \$250,000 per year and a total capital cost of between \$4 and \$5 million, investment in this project would be recovered in 10 years.

Support of Other Recommendations

Transit travel time savings and reliability resulting from this project benefit other projects including Recommended Investments: Parking Management, US 2 Ski Hill to River Bend Streetscape Improvements Enhancement. This project would also support several projects identified as Considered Investments: Employee Travel Demand Management and the Transit-on-Shoulders project, making transit a more attractive option during congested conditions.

COST





US 2 Ski Hill to River Bend Streetscape Improvements

PROJECT DESCRIPTION

This project would re-stripe and reconfigure the lanes along US 2 in Leavenworth to provide a more complete and efficient facility for vehicles, transit, walking and bicycling. The improvements would improve local accessibility for residents, prioritize the needs of emergency service vehicles, transit, and shuttles along the corridor and separate bicyclists and pedestrians from vehicles on US 2.

To improve mobility for local traffic using US 2 to access residential neighborhoods and Downtown Leavenworth, the existing westbound right-turn lane at Chumstick Highway, 9th Street, and Front Street would be extended. Only right-turning vehicles, transit, shuttles and emergency services would be able to utilize the extended right-turn lanes. All signalized intersections along US 2 in Downtown Leavenworth would be modified such that, only transit, shuttles, and emergency services would be able to continue through the intersection in this lane, with all other drivers being forced to turn right.

As part of this project, a traffic signal would be added at Front Street and the existing signals would be upgraded to include signal preemption. Signal preemption would allow vehicles with the appropriate transponder (emergency services, transit, and shuttles) to preempt the regularly operating traffic signal to prioritize their movement through the intersection. To allow emergency services, transit, and shuttles to access the general purpose traffic lane ahead of the queue on US 2, the traffic signal would hold all through traffic on US 2 for approximately seven seconds to allow emergency services, transit, and shuttles in the right-turn lane to transition back into the general purpose lane.

Pedestrian improvements would include the addition of a visually appealing fence or landscaped buffer to improve separation between pedestrians and bicyclists and vehicles on US 2. This barrier would also discourage jaywalking across US 2 between intersections, enhancing pedestrian safety and improving traffic flow on US 2.

Bicyclists on US 2 would be accommodated by a shared-use path between Chumstick Highway and Ski Hill Drive. The existing sidewalk on the north side of US 2 would be widened to accommodate both bicyclists and pedestrians. While bicyclists would transition to the shared-use path between Ski Hill Drive and Chumstick Highway, to the east and west of the improvements the existing on-street bicycle lane would be maintained. Crossings at Ski Hill Drive and Chumstick Highway would be restriped with additional markings, including green painted conflict areas, to connect bicyclists to the north side of US 2.





PROJECT BENEFITS

- Truly multimodal US 2 that is more inviting to pedestrians and bicyclists
- Travel time benefits for transit, shuttles, and emergency services without adding measurable delay for general traffic
- Oestinations in Leavenworth better connected via transit, shuttles and bike/scooter share

Today US 2 has on-street bicycle lanes through most of downtown and sidewalks on both sides. While confident cyclists use the on-street lanes, less confident cyclists tend to use the sidewalks, which vary in width and cannot always accommodate both bicyclists and pedestrians. With the addition of a shared-use path on the north side of US 2, this project would create a space designed to be shared by bicyclists and pedestrians. Paired with wayfinding

and crossing improvements, the shared-use path would create an accessible route through downtown for both bicyclist and pedestrians.

Signal priority paired with queue-jump at signalized intersections would improve travel time through Leavenworth for emergency services, transit, and shuttles. Travel time improvement for shuttles and transit not only improve on-time operations, but also create an incentive to use transit or shuttles to travel with Leavenworth. For emergency services, improved travel times translates into lower response times, meaning they can get to people in need in less time.

The priority for transit and shuttles paired with complete bicycle and pedestrian facilities would create more options in how people travel from Willkommen Village to Icicle Road. Paired with a bike/scooter share program, discussed in the Quick Wins section, visitors would have access to multiple options to travel within Leavenworth whether arriving by transit or shuttles or driving and parking off the corridor or remotely.

GUIDING PRINCIPLES

Reliable

Using extended right-turn lanes

prioritize transit would create a

the region. The extended right-

turn lanes available only for use

by transit, shuttles, emergency

services, and right-turning vehicles would also ensure better access to residential neighborhoods.

paired with signal preemption to

more reliable transit option within

Safe & Complete

With improved access and signal priority, this project would ensure emergency services could better serve Leavenworth residents.

Vibrant



This project would encourage more efficient use of the corridor by creating mode shift opportunities by incentivizing the use of transit and shuttles through travel-time savings.

Supported



Identifying a way to better prioritize emergency services along US 2 through Leavenworth while continuing to accommodate vehicles, bicyclists, pedestrians, and transit was supported by the community.

COST



Cost for this project is expected to vary based on phased implementation.



ADDITIONAL CONSIDERATIONS

US 2 Driveway Access

While full access would be maintained at all intersections along US 2, the extended right-turn pocket would eliminate the ability for eastbound traffic to turn left between intersections from Chumstick Highway to Front Street.

Support of Other Projects

This project would support the Bike/Scooter Share, Transit-on-Shoulders, and Shuttle Partnership projects discussed above. This project ensures that transit and shuttles operating on US 2 have a travel-time savings and can operate efficiently within Leavenworth encouraging higher use of the services, resulting in mode-shift for trips to Leavenworth. The project also ensures that bicyclists have a comfortable space encouraging them to park once and utilize bike share and transit options to travel within Leavenworth. The reliable connection

between Leavenworth destinations would also support parking management strategies and make the "park once" strategy achievable for Leavenworth visitors.

General Purpose Traffic Travel Time

While this project would improve travel time for transit, shuttles, and emergency vehicles, there would be no benefit to travel time for drivers traveling through Leavenworth on US 2.

Implementation

This project could be implemented in steps as funding is available. Improvements could be made one intersection at a time or with priority for the westbound direction, followed by the eastbound direction.



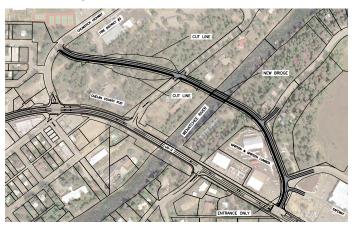
Pine Street Connection

PROJECT DESCRIPTION

This project would connect Pine Street from the current eastern terminus at Fir Street, across Chumstick Highway and the Wenatchee River, to River Bend Drive. This project would include construction of a new intersection with Chumstick Highway, a bridge across the Wenatchee River, and improvements to River Bend Drive from the new Pine Street connection to US 2.

The Pine Street Bridge would provide two general purpose travel lanes (one in each direction) to accommodate vehicles. Bicyclists would be accommodated in a siderunning path shared with pedestrians on the north side of the bridge, while a sidewalk on the south side of the bridge would accommodate pedestrians.

To create the opportunity for transit to bypass US 2 during events (when US 2 is highly congested) and to facilitate better transit connections to residential neighborhoods, both the River Bend Drive intersection with US 2 and the Chumstick Highway intersection with Pine Street could be upgraded to include transit pre-emption. This technology could also be utilized by emergency services using this connection to access residential neighborhoods in Leavenworth.



PROJECT BENEFITS

- √ 40% reduction in summer weekend travel times on US 2 through Leavenworth
- Additional capacity to move people across the Wenatchee River
- (Improved bicycle and pedestrian connections to local trails and destinations



Example of Pine Street Bridge Cross-Section Source: Aspen Public Radio, 2018

The Pine Street Connection is the only viable project evaluated as part of this study that would result in significant travel time savings on US 2 during typical summer weekends. Evaluation of this project under summer weekend conditions resulted in a travel time savings of four minutes in the eastbound direction on

US 2 and three minutes in the

westbound direction. These travel time savings are equivalent to a 40 percent reduction from existing summer weekend travel times on US 2. During peak festival times heavy congestion on US 2 would still be expected to occur as a result of the limited capacity on US 2 as it exits Leavenworth.

Today, US 2 is the only route that crosses Wenatchee River within the Leavenworth city limits, with extensive out-of-direction travel required to reach alternate crossings. Construction bottlenecks at both the Chumstick Highway and River Bend Driver intersections meter traffic on the bridge. While a new bridge would operate at a lower capacity than US 2, it would also reduce the bottleneck for traffic traveling on US 2 at both the Chumstick Highway and River Bend Drive, increasing the number of vehicles able to cross the existing bridge. Cosnsidering the removal of bottlenecks and additional capacity offered by a new bridge, this project would increase the number of vehicles that can cross the Wenatchee River more than 50 percent compared to the capacity that exists today.

While a new bridge would facilitate the movement of vehicles across the Wenatchee River, it would also serve as an important connection for bicyclists. The existing portion of Pine Street was recently improved for bicyclists as part of the Pine Street Trail. The improvements already in place paired with dedicated facilities on the Pine Street Bridge would create a parallel route to US 2 between River Bend Drive and Ski Hill Road through Leavenworth. The route would also provide a connection to the middle school and high school for students living on the east side of the Wenatchee River.

⁵Icicle/E Leavenworth Road to the south and Chumstick/North Road to the north

GUIDING PRINCIPLES

COST

Reliable

This project would improve travel times on US 2 by 40 percent during summer weekend conditions, making US 2 a more reliable route during periods of congestion. A new connection across the Wenatchee River would also ensure that movement across the river could continue to occur in the event of an incident on the US 2 bridge.

Safe & Complete



This project would improve public safety by creating an additional capacity to move people, vehicles, and emergency responders across the Wenatchee River in the event of an emergency or natural disaster. With dedicated facilities for bicyclists and pedestrians, this project would also reduce the exposure of bicyclists crossing the Wenatchee River creating a safer and more comfortable bicycling experience.

Vibrant



This project would encourage more efficient use of the corridor by creating mode shift opportunities by incentivizing the use of transit and shuttles through travel-time savings.

ADDITIONAL CONSIDERATIONS

Right-of-Way

Construction of Pine Street between the current terminus and River Bend Drive and construction of a new bridge will require significant right-ofway acquisition

Continuing Public Outreach

Advance of this concept past the planning level will require engagement and support of the greater Leavenworth community

Environmental

Work near the Wenatchee River is likely to require special permits and coordination with resource agencies

Additional Improvements

Reconfiguration will be required for several local roadways including Chumstick Highway, Alpensee Strauss, Riverbend Drive and access to Safeway

This bridge would be a local road owned and maintained by the City of Leavenworth.





US 2 Undercrossing

PROJECT DESCRIPTION

This project would connect the residential neighborhoods north of US 2 to downtown Leavenworth and the Wenatchee River Waterfront by constructing a US 2 undercrossing near the Leavenworth Park and Ride. The undercrossing would be accessible from both the Park and Ride lot and Sherbourne Street on the north and Division Street on the south, creating a more seamless connection across US 2 for bicyclists and pedestrians.



PROJECT BENEFITS

- Separation of vehicles and pedestrians and bicyclists crossing US 2
- Elimination of a barrier for residents accessing the waterfront area
- Encouragement for Downtown employees and patrons to "park once"

Leavenworth's Comprehensive Plan identifies US 2 as a barrier for biking and walking that separates the downtown area from the residential areas. All existing options for crossing US 2 near downtown expose bicyclists and pedestrians to conflicts with right-turning vehicles, except for the High-Intensity Activated Crosswalk (HAWK) beacon at City Hall, which is a mid-block crossing. The large number of pedestrian crossings that can occur in Downtown Leavenworth on a summer day or during events (over 3,000 pedestrians were counted on a Sunday in August at one crossing) create delay for vehicles along the US 2 corridor. Providing a grade separated crossing for bicyclists and pedestrians creates a safer and more comfortable experience that reduces barriers to visiting the waterfront, encourages parking once in Downtown to visit multiple destinations, and and improves operations at signalized intersections.



Example of Pedestrian Undercrossing Source: Schultz Heavy Civil Construction, 2020

GUIDING PRINCIPLES

Reliable



The large number of pedestrian crossings that can occur on a summer weekend or during events reduce the efficiency of signalized intersections and add delay to the US 2 corridor. Providing a grade-separated crossing of US 2 would reduce this conflict, improving the efficiency and reliability of the corridor. Similarly, a grade separated crossing would make parking once in downtown and traveling between destinations more feasible, reducing the number of vehicles in downtown cruising in search of a parking space.

Safe & Complete



The separation of pedestrians and bicyclists crossing US 2 would not only reduce potential conflicts with vehicles, but also create a more comfortable biking and walking experience.

Vibrant



Encourages residents to walk or bike to the downtown or the waterfront area by eliminating the need to cross US 2, which is identified as a barrier separating downtown Leavenworth and the waterfront from residential neighborhoods. The ability to "park once" also makes downtown a more accessible destination.

Supported



The community and stakeholders have supported project ideas that lower the number of pedestrians crossing US 2 during summer weekends and festivals.

ADDITIONAL CONSIDERATIONS

Enhanced Pedestrian Separation

This project should be paired with enhanced modal separation on US 2, through use of planters or visually appealing fencing to encourage use of the undercrossing.

Wayfinding

Wayfinding signs will be required to direct bicyclists and pedestrians on both sides of US 2 to the undercrossing.

Right-of-Way

Some right-of-way acquisition will be required to connect the undercrossing to neighborhood streets facilitating a connection for residents.

COST



US 2 Upper Wenatchee Valley Transportation Study Project Advisory Committee Meeting #5

January 29, 2020













Meeting Agenda

- Project Analysis & Fatal Flaws
- Recommended Investments
- Upcoming Community Input Opportunities
- Project Next Steps





Meeting Purpose

- Project Team Will:
 - Share Fatal Flaw Projects & Recommended Investments
- Project Advisory Committee Will:
 - Share input on Recommended Investments from perspective of their representative organizations



Meeting Agenda

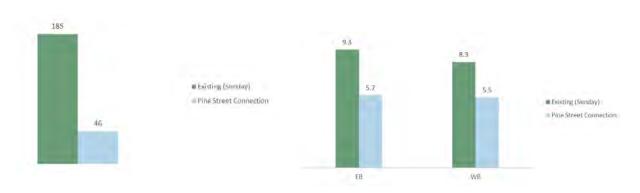
- Project Analysis & Fatal Flaws
- Recommended Investments
- Upcoming Community Input Opportunities
- Project Next Steps





Last Time We Saw You....

 Presented Evaluation of 10 Highest Performing Projects





- We asked you to tell us....
 - What are you excited about? Why?
 - Is there something you don't like? Why?



Since We Saw You....

- Reallocate US 2 ROW
- Temporary Center Running Transit/Emergency Lane
- Grade-Separated Pedestrian Crossings
- Pine Street Connection
- Enhanced Modal Separation
- Parking Management
- Roundabouts on US 2
- US 2 Parking Flex Space & Bicycle Lane Connection
- Transit-on-Shoulders
- Bicycle & Pedestrian Connection in Peshastin

- US 2 Ski Hill to River Bend Streetscape Improvements
- US 2 Pedestrian Undercrossing
- Pine Street Connection
 - Parking Management
- US 2 Roundabout at Icicle Road
- Peshastin Bicycle & Pedestrian Transit Connection



Projects with Fatal Flaws

- High Performing Projects with Fatal Flaws
 - Temporary Center Running Transit/Emergency
 Lane
 - Grade Separated Crossing Locations
 - Roundabouts at Major US 2 Intersections
- Projects Screened Due to Fatal Flaws
 - US 2 Widening
 - Improving Parallel Routes



Projects: Grade Separated Crossings

- Evaluated 3 Locations for Undercrossing or Overcrossing
 - 9th Street
 - Front Street
 - US 2 Park & Ride
- 2 of 3 Locations Eliminated Based On:
 - Grade
 - Impact of Ramps to US 2 Frontage
 - Out-of-Direction Travel to Access Ramps



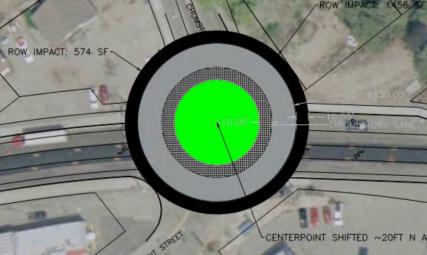




Projects: US 2 Roundabouts

- Considered Roundabouts at Front Street, 9th Street,
 Chumstick Highway
 - Queueing may block roundabouts during high demands
 - Not likely to operate well under festival conditions
 - Hard to deploy temporary traffic management
 - Not likely to provide enough capacity to serve demand when analyzed using WSDOT guidelines
 - Right-of-Way Impacts







Projects: Widening US 2 & Parallel Routes

Widening US 2

- Does not advance project Guiding Principles
- Induced Demand
- Significant widening required to benefit
- High-level cost estimate over \$30M

Parallel Routes

- Impact to local residents
- Cost
- Travel Time Increases



Meeting Agenda

- Project Analysis & Fatal Flaws
- Recommended Investments



- Upcoming Community Input Opportunities
- Project Next Steps





Recommended Investments

Localized Improvements & Management Strategies

- ✓ US 2 Roundabout at Icicle Road
- ✓ Peshastin Bicycle & Pedestrian Transit Connection
- ✓ Parking Management

Transformative Measures

- ✓ US 2 Ski Hill to River Bend Streetscape Improvements
- ✓ Undercrossing at US 2 Park & Ride
- ✓ Pine Street Connection



Localized Improvements & Management Strategies





US 2 Roundabout at Icicle Road

PROJECT DESCRIPTION

This project would construct a single-lane roundabout at the intersection of Icicle Road and US 2. Paired with center-island landscaping, a display of public art or a sculpture, and Bavarian-themed signage, the roundabout would create an opportunity to create a gateway to Leavenworth as visitors arrive from Tumwater Canyon. Located at the western terminus of Link Transit's Route 22, this project would also create an improved turn-around for transit and shuttles operating on the US 2 corridor through Leavenworth.



PROJECT BENEFITS

- (Improved local access to US 2
- A western gateway to Leavenworth
- ✓ Improved transit and shuttle circulation

This project would improve access for locals using Icicle Road to access homes or jobs without impacting travel times or congestion on US 2. Today, US 2 through traffic has priority at the intersection over traffic turning left onto Icicle Road and traffic on Icicle Road, which is stop-controlled. This configuration forces locals to wait for gaps in traffic on US 2, which can be difficult during periods of high congestion. With roundabout control at this intersection, all approaches would be yield-controlled, giving more equal opportunities for local and through traffic. A roundabout configuration would also improve safety at the intersection by reducing speeds and limiting opportunities for severe collisions.



Example of a roundabout paired with public art in Pueblo, CO Source: Colorado Public Radio. 2018

The Icicle Road intersection marks the transition of US 2 from a mountainous highway to Leavenworth's "main street". Installation of a roundabout would reinforce this gateway, by slowing speeds paired with signage and landscaping that would serve as a way to alter driver expectations and behaviors from the nearly 65 mile stretch of US 2 across the Cascades.

Moreover, landscaping features of a roundabout provide the opportunity to incorporate Bavarian-themed elements, reinforcing the unique identity of Leavenworth.

The intersection is also the western terminus of Link Transit's Route 22. The current configuration of the intersection requires transit operators to make a left-turn onto lcicle Road before pulling into the gas station on the southeast corner of the intersection and using the parking lot as the turnaround before continuing eastbound. Construction of a roundabout and relocating the transit stop from the parking lot to US 2 would improve transit service and efficiency at the west end of Leavenworth.

GUIDING PRINCIPLES

Reliable

The roundabout improves local access onto the US 2 corridor, while not diminishing through traffic.

Safe & Complete

The roundabout enhances corridor safety, but slowing down vehicle speeds and significantly reducing the risk of serious collisions. The roundabout

also provides a more complete facility

for transit by providing a more formal

turn-around.

Vibrant



Paired with landscaping, public art or a sculpture, and signage, this project would create a unique and welcoming gateway into Leavenworth for visitors traveling on US 2. This project would also serve as a point to transition drivers from the mountain highway driving through Tumwater Canyon, to the slower speeds and behaviors needed when driving on a "main street".

Realistic



This project is the lowest cost capital project recommended and can be completed almost entirely within available right-of-way.

Supported



This project was not only added by the community as part of the engagement process, but also received over 60 "likes" on the online map.

ADDITIONAL CONSIDERATIONS

Temporary Traffic Control

Roundabout control limits the opportunity to deploy temporary traffic control measures. While queueing reaching Icicle Road was not observed this should be considered in evacuation planning.

Maintenance & Art Costs

While the roundabout would be constructed on a WSDOT facility, any WSDOT fund contributions would not cover the addition of art or other visual enhancements to create a visual gateway to Leavenworth. COST





Parking Management

PROJECT DESCRIPTION

This project identifies parking management strategies that support and build on strategies recommended as part of the Downtown Leavenworth Parking Management Plan and in some cases, identified for implementation in the near-term by the City of Leavenworth Parking Committee. Strategies identified and recommended as part of this study, maximize efficient use of the parking supply such that visitors can easily find parking, reducing congestion in Downtown that results from cruising for parking. This strategy would also and allow the City to flexibly manage parking during high demand events.

Strategy 1: Allocate remote parking for employees that work in Downtown. With the recent transition of the WSDOT lot to City ownership, a portion of the available capacity in this lot would be allocated to employee parking. This lot is adjacent to the US 2/Mill Street transit stop, which would connect employees parking at this location to jobs in Downtown. Creating employee parking at this lot would also be supported by the TDM Strategies and Bike/Scooter Share projects discussed in the Considered Investments section and the US 2 Ski Hill to River Bend Streetscape Improvements project.

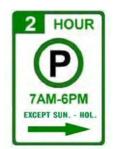
Strategy 2: Make other remote options available to employees. Any unused capacity at the existing Willkommen Village could also be utilized followed by the paid use of parking in private-lots for employees,

Strategy 3: Active management of on-street parking Downtown. Once employees have adequate options to park remotely and connect to jobs in Downtown, measures including paid on-street parking and time-restricted parking in Downtown should be deployed to ensure that employees utilize remote parking opportunities leaving spaces in Downtown available for visitors.

Strategy 4: Event-specific parking management. With an active management plan for parking in place, the City would be able to transition use of the parking supply during large events. During events demanding large amounts of parking, the City could transition some of the parking available to employees with additional incentives available to employees to travel to Leavenworth by rideshare or public transit during events and festivals. This would allow the City to better accommodate and manage the parking required for festivals, without construction of additional remote parking facilities.

PROJECT BENEFITS

- A parking system that visitors can easily navigate
- The flexibility to transition parking between employees and visitors
- A system that allows visitors to park once



2-Hour Parking Sign Source: City Of Seattle, 2020

Turnover of parking in Downtown Leavenworth was measured to be below typical parking turnover rates when data was collected for the Downtown Parking Management Plan. The data indicated that parking spots in Leavenworth were turning over approximately half as often as the industry average. This was believed to be a result of employees using on-street parking in Downtown. By shifting employees to parking located outside of Downtown connected by transit, parking in Downtown would be more frequently available to visitors near their destination. This would limit the need for people

unfamiliar with Leavenworth to circulate through Downtown looking for parking, improving not only the parking system, but also reducing congestion in Downtown.

Today, management of parking within Leavenworth for events and festivals requires starting from scratch each time management is needed and relies on parking lot owners to actively manage their parking supply. By putting management strategies in place, first focused on the management of employee parking, those systems can be leveraged to more efficiently manage the supply during times of high demand.



Example of On-Street Parking Meters Source: City of Lexington,KY

These strategies paired with other Considered and Recommended Investments would help to create a "park once" experience for visitors in Leavenworth. With the ability to transition remote parking to visitors and have transit and bike/scooter share options in place, visitors can park and easily navigate between destinations using other modes.

GUIDING PRINCIPLES

Vibrant



Several strategies recommended as part of this project focus on more efficiently parking employees, which creates more opportunities for parking visitors.

Realistic



Many of the management strategies recommended as part of this project can be implemented without significant costs and within the near-term (less than five years).

Supported



Project stakeholders, PAC members, and community members have all expressed support for parking management strategies as part of this study.

ADDITIONAL CONSIDERATIONS

Support of Other Projects

Recommendations above would support the US 2 Ski Hill to River Bend Streetscape Improvements Project, Transit-on-Shoulders, and Bike/Scooter Share Projects, and TDM strategies. These management strategies would ensure that Leavenworth's parking system has adequate capacity in strategic locations encouraging visitors to park and then leverage other mode choices to travel within Leavenworth.

Increased Transit Service

As Link Transit continues to increase service on Route 22 over the next several years and continues the operation of the circulator shuttle to complete Route 22 within Leavenworth, the use of transit by employees participating in TDM programs will continue to increase.

The Downtown Parking Plan

While many of the strategies recommended as part of this study are also documented in the Downtown Parking Plan, recommendations in the study are strategies that would provide meaningful benefit to the US 2 corridor as a whole and support other recommended investments. The continued implementation of other strategies documented in the Downtown Parking Plan, not discussed in this plan, will continue to contribute to improving Leavenworth's transportation system.

COST

Cost for this project would vary depending on implementation of recommended strategies.



Peshastin Bicycle & Pedestrian Transit Connection

PROJECT DESCRIPTION

This project would construct a bicycle and pedestrian bridge adjacent to the existing Main Street Bridge in Peshastin. The parallel bridge would accommodate non-motorized modes and provide an all-ages, all-abilities connection to an improved Peshastin transit stop at the US 2 and Main Street intersection. Improvements to pedestrian facilities between the new bridge and School Street would be completed as part of this project, as would enhanced crosswalk markings connecting the bridge to the improved transit stop.



PROJECT BENEFITS

- An all-ages all-abilities bicycle and pedestrian bridge to Peshastin that connects to transit
- Transit travel time savings between Wenatchee and Leavenworth

The narrow Main Street Bridge has an outdated design without opportunity for expansion to better serve non-motorized modes. By constructing a separate, parallel footbridge the project would accommodate bicyclists and pedestrians on a separate facility that would be accessible and comfortable for people of all ages and all abilities with a direct connection to transit.

To serve Peshastin, Route 22 must currently divert off of US 2 over the Main Street bridge. This loop into Peshastin adds six minutes to the route travel time, resulting in higher costs to operate the route and less competitive travel times compared to driving. The additional six minutes is estimated to add \$250,000 in operating costs to Route 22 over the course of one year. By creating a connection and improved stop on US 2, this project would lower operating costs while improving travel time and reliability.



Bicycle & Pedestrian Bridge Source: Public Square, 2018

GUIDING PRINCIPLES

Reliable

With the travel time savings from eliminating the loop into Peshastin, Route 22 would operate more efficiently with better on-time performance making transit a more attractive and reliable option.

Safe & Complete



A parallel facility would serve both bicyclists and pedestrians of all-ages and abilities through the separation from vehicles crossing the Wenatchee River.

Vibrant



The addition of an all ages, all abilities bicycle and pedestrian bridge serves the dual purpose of making transit more efficient and creating an amenity that could benefit outdoor recreation along the US 2 corridor.

Supported



Both Link Transit and community members have expressed support for this project.

ADDITIONAL CONSIDERATIONS

Cost-Benefit

This project would result in a direct cost-savings for Link Transit. With an estimated savings of \$250,000 per year and a total capital cost of between \$4 and \$5 million, investment in this project would be recovered in 10 years.

Support of Other Recommendations

Transit travel time savings and reliability resulting from this project benefit other projects including Recommended Investments: Parking Management, US 2 Ski Hill to River Bend Streetscape Improvements Enhancement. This project would also support several projects identified as Considered Investments: Employee Travel Demand Management and the Transit-on-Shoulders project, making transit a more attractive option during congested conditions.

COST



Transformative Measures





US 2 Ski Hill to River Bend Streetscape Improvements

PROJECT DESCRIPTION

This project would re-stripe and reconfigure the lanes along US 2 in Leavenworth to provide a more complete and efficient facility for vehicles, transit, walking and bicycling. The improvements would improve local accessibility for residents, prioritize the needs of emergency service vehicles, transit, and shuttles along the corridor and separate bicyclists and pedestrians from vehicles on US 2.

To improve mobility for local traffic using US 2 to access residential neighborhoods and Downtown Leavenworth, the existing westbound right-turn lane at Chumstick Highway, 9th Street, and Front Street would be extended. Only right-turning vehicles, transit, shuttles and emergency services would be able to utilize the extended right-turn lanes. All signalized intersections along US 2 in Downtown Leavenworth would be modified such that, only transit, shuttles, and emergency services would be able to continue through the intersection in this lane, with all other drivers being forced to turn right.

As part of this project, a traffic signal would be added at Front Street and the existing signals would be upgraded to include signal preemption. Signal preemption would allow vehicles with the appropriate transponder (emergency services, transit, and shuttles) to preempt the regularly operating traffic signal to prioritize their movement through the intersection. To allow emergency services, transit, and shuttles to access the general purpose traffic lane ahead of the queue on US 2, the traffic signal would hold all through traffic on US 2 for approximately seven seconds to allow emergency services, transit, and shuttles in the right-turn lane to transition back into the general purpose lane.

Pedestrian improvements would include the addition of a visually appealing fence or landscaped buffer to improve separation between pedestrians and bicyclists and vehicles on US 2. This barrier would also discourage jaywalking across US 2 between intersections, enhancing pedestrian safety and improving traffic flow on US 2.

Bicyclists on US 2 would be accommodated by a shared-use path between Chumstick Highway and Ski Hill Drive. The existing sidewalk on the north side of US 2 would be widened to accommodate both bicyclists and pedestrians. While bicyclists would transition to the shared-use path between Ski Hill Drive and Chumstick Highway, to the east and west of the improvements the existing on-street bicycle lane would be maintained. Crossings at Ski Hill Drive and Chumstick Highway would be restriped with additional markings, including green painted conflict areas, to connect bicyclists to the north side of US 2.





PROJECT BENEFITS

- Truly multimodal US 2 that is more inviting to pedestrians and bicyclists
- Travel time benefits for transit, shuttles, and emergency services without adding measurable delay for general traffic
- Oestinations in Leavenworth better connected via transit, shuttles and bike/scooter share

Today US 2 has on-street bicycle lanes through most of downtown and sidewalks on both sides. While confident cyclists use the on-street lanes, less confident cyclists tend to use the sidewalks, which vary in width and cannot always accommodate both bicyclists and pedestrians. With the addition of a shared-use path on the north side of US 2, this project would create a space designed to be shared by bicyclists and pedestrians. Paired with wayfinding

and crossing improvements, the shared-use path would create an accessible route through downtown for both bicyclist and pedestrians.

Signal priority paired with queue-jump at signalized intersections would improve travel time through Leavenworth for emergency services, transit, and shuttles. Travel time improvement for shuttles and transit not only improve on-time operations, but also create an incentive to use transit or shuttles to travel with Leavenworth. For emergency services, improved travel times translates into lower response times, meaning they can get to people in need in less time.

The priority for transit and shuttles paired with complete bicycle and pedestrian facilities would create more options in how people travel from Willkommen Village to Icicle Road. Paired with a bike/scooter share program, discussed in the Quick Wins section, visitors would have access to multiple options to travel within Leavenworth whether arriving by transit or shuttles or driving and parking off the corridor or remotely.

GUIDING PRINCIPLES

Reliable

Using extended right-turn lanes

prioritize transit would create a

the region. The extended right-

turn lanes available only for use

by transit, shuttles, emergency

services, and right-turning vehicles would also ensure better access to residential neighborhoods.

paired with signal preemption to

more reliable transit option within

Safe & Complete

With improved access and signal priority, this project would ensure emergency services could better serve Leavenworth residents.

Vibrant



This project would encourage more efficient use of the corridor by creating mode shift opportunities by incentivizing the use of transit and shuttles through travel-time savings.

Supported



Identifying a way to better prioritize emergency services along US 2 through Leavenworth while continuing to accommodate vehicles, bicyclists, pedestrians, and transit was supported by the community.

COST



Cost for this project is expected to vary based on phased implementation.



ADDITIONAL CONSIDERATIONS

US 2 Driveway Access

While full access would be maintained at all intersections along US 2, the extended right-turn pocket would eliminate the ability for eastbound traffic to turn left between intersections from Chumstick Highway to Front Street.

Support of Other Projects

This project would support the Bike/Scooter Share, Transit-on-Shoulders, and Shuttle Partnership projects discussed above. This project ensures that transit and shuttles operating on US 2 have a travel-time savings and can operate efficiently within Leavenworth encouraging higher use of the services, resulting in mode-shift for trips to Leavenworth. The project also ensures that bicyclists have a comfortable space encouraging them to park once and utilize bike share and transit options to travel within Leavenworth. The reliable connection

between Leavenworth destinations would also support parking management strategies and make the "park once" strategy achievable for Leavenworth visitors.

General Purpose Traffic Travel Time

While this project would improve travel time for transit, shuttles, and emergency vehicles, there would be no benefit to travel time for drivers traveling through Leavenworth on US 2.

Implementation

This project could be implemented in steps as funding is available. Improvements could be made one intersection at a time or with priority for the westbound direction, followed by the eastbound direction.



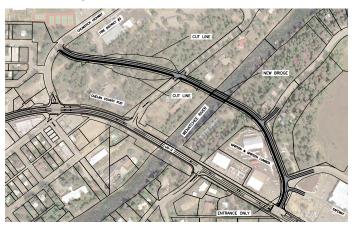
Pine Street Connection

PROJECT DESCRIPTION

This project would connect Pine Street from the current eastern terminus at Fir Street, across Chumstick Highway and the Wenatchee River, to River Bend Drive. This project would include construction of a new intersection with Chumstick Highway, a bridge across the Wenatchee River, and improvements to River Bend Drive from the new Pine Street connection to US 2.

The Pine Street Bridge would provide two general purpose travel lanes (one in each direction) to accommodate vehicles. Bicyclists would be accommodated in a siderunning path shared with pedestrians on the north side of the bridge, while a sidewalk on the south side of the bridge would accommodate pedestrians.

To create the opportunity for transit to bypass US 2 during events (when US 2 is highly congested) and to facilitate better transit connections to residential neighborhoods, both the River Bend Drive intersection with US 2 and the Chumstick Highway intersection with Pine Street could be upgraded to include transit pre-emption. This technology could also be utilized by emergency services using this connection to access residential neighborhoods in Leavenworth.



PROJECT BENEFITS

- √ 40% reduction in summer weekend travel times on US 2 through Leavenworth
- Additional capacity to move people across the Wenatchee River
- (Improved bicycle and pedestrian connections to local trails and destinations



Example of Pine Street Bridge Cross-Section Source: Aspen Public Radio, 2018

The Pine Street Connection is the only viable project evaluated as part of this study that would result in significant travel time savings on US 2 during typical summer weekends. Evaluation of this project under summer weekend conditions resulted in a travel time savings of four minutes in the eastbound direction on

US 2 and three minutes in the

westbound direction. These travel time savings are equivalent to a 40 percent reduction from existing summer weekend travel times on US 2. During peak festival times heavy congestion on US 2 would still be expected to occur as a result of the limited capacity on US 2 as it exits Leavenworth.

Today, US 2 is the only route that crosses Wenatchee River within the Leavenworth city limits, with extensive out-of-direction travel required to reach alternate crossings. Construction bottlenecks at both the Chumstick Highway and River Bend Driver intersections meter traffic on the bridge. While a new bridge would operate at a lower capacity than US 2, it would also reduce the bottleneck for traffic traveling on US 2 at both the Chumstick Highway and River Bend Drive, increasing the number of vehicles able to cross the existing bridge. Cosnsidering the removal of bottlenecks and additional capacity offered by a new bridge, this project would increase the number of vehicles that can cross the Wenatchee River more than 50 percent compared to the capacity that exists today.

While a new bridge would facilitate the movement of vehicles across the Wenatchee River, it would also serve as an important connection for bicyclists. The existing portion of Pine Street was recently improved for bicyclists as part of the Pine Street Trail. The improvements already in place paired with dedicated facilities on the Pine Street Bridge would create a parallel route to US 2 between River Bend Drive and Ski Hill Road through Leavenworth. The route would also provide a connection to the middle school and high school for students living on the east side of the Wenatchee River.

⁵Icicle/E Leavenworth Road to the south and Chumstick/North Road to the north

GUIDING PRINCIPLES

COST

Reliable

This project would improve travel times on US 2 by 40 percent during summer weekend conditions, making US 2 a more reliable route during periods of congestion. A new connection across the Wenatchee River would also ensure that movement across the river could continue to occur in the event of an incident on the US 2 bridge.

Safe & Complete



This project would improve public safety by creating an additional capacity to move people, vehicles, and emergency responders across the Wenatchee River in the event of an emergency or natural disaster. With dedicated facilities for bicyclists and pedestrians, this project would also reduce the exposure of bicyclists crossing the Wenatchee River creating a safer and more comfortable bicycling experience.

Vibrant



This project would encourage more efficient use of the corridor by creating mode shift opportunities by incentivizing the use of transit and shuttles through travel-time savings.

ADDITIONAL CONSIDERATIONS

Right-of-Way

Construction of Pine Street between the current terminus and River Bend Drive and construction of a new bridge will require significant right-ofway acquisition

Continuing Public Outreach

Advance of this concept past the planning level will require engagement and support of the greater Leavenworth community

Environmental

Work near the Wenatchee River is likely to require special permits and coordination with resource agencies

Additional Improvements

Reconfiguration will be required for several local roadways including Chumstick Highway, Alpensee Strauss, Riverbend Drive and access to Safeway

This bridge would be a local road owned and maintained by the City of Leavenworth.





US 2 Undercrossing

PROJECT DESCRIPTION

This project would connect the residential neighborhoods north of US 2 to downtown Leavenworth and the Wenatchee River Waterfront by constructing a US 2 undercrossing near the Leavenworth Park and Ride. The undercrossing would be accessible from both the Park and Ride lot and Sherbourne Street on the north and Division Street on the south, creating a more seamless connection across US 2 for bicyclists and pedestrians.



PROJECT BENEFITS

- Separation of vehicles and pedestrians and bicyclists crossing US 2
- Elimination of a barrier for residents accessing the waterfront area
- Encouragement for Downtown employees and patrons to "park once"

Leavenworth's Comprehensive Plan identifies US 2 as a barrier for biking and walking that separates the downtown area from the residential areas. All existing options for crossing US 2 near downtown expose bicyclists and pedestrians to conflicts with right-turning vehicles, except for the High-Intensity Activated Crosswalk (HAWK) beacon at City Hall, which is a mid-block crossing. The large number of pedestrian crossings that can occur in Downtown Leavenworth on a summer day or during events (over 3,000 pedestrians were counted on a Sunday in August at one crossing) create delay for vehicles along the US 2 corridor. Providing a grade separated crossing for bicyclists and pedestrians creates a safer and more comfortable experience that reduces barriers to visiting the waterfront, encourages parking once in Downtown to visit multiple destinations, and and improves operations at signalized intersections.



Example of Pedestrian Undercrossing Source: Schultz Heavy Civil Construction, 2020

GUIDING PRINCIPLES

Reliable



The large number of pedestrian crossings that can occur on a summer weekend or during events reduce the efficiency of signalized intersections and add delay to the US 2 corridor. Providing a grade-separated crossing of US 2 would reduce this conflict, improving the efficiency and reliability of the corridor. Similarly, a grade separated crossing would make parking once in downtown and traveling between destinations more feasible, reducing the number of vehicles in downtown cruising in search of a parking space.

Safe & Complete



The separation of pedestrians and bicyclists crossing US 2 would not only reduce potential conflicts with vehicles, but also create a more comfortable biking and walking experience.

Vibrant



Encourages residents to walk or bike to the downtown or the waterfront area by eliminating the need to cross US 2, which is identified as a barrier separating downtown Leavenworth and the waterfront from residential neighborhoods. The ability to "park once" also makes downtown a more accessible destination.

Supported



The community and stakeholders have supported project ideas that lower the number of pedestrians crossing US 2 during summer weekends and festivals.

ADDITIONAL CONSIDERATIONS

Enhanced Pedestrian Separation

This project should be paired with enhanced modal separation on US 2, through use of planters or visually appealing fencing to encourage use of the undercrossing.

Wayfinding

Wayfinding signs will be required to direct bicyclists and pedestrians on both sides of US 2 to the undercrossing.

Right-of-Way

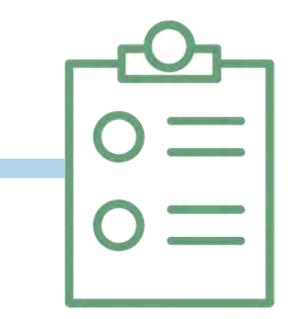
Some right-of-way acquisition will be required to connect the undercrossing to neighborhood streets facilitating a connection for residents.

COST



Meeting Agenda

- Project Analysis & Fatal Flaws
- Recommended Investments
- Upcoming Community Input Opportunities
- Project Next Steps





Upcoming Engagement Opportunities

Community Meeting

- Thursday, February 13th from 5:30 to 7:30PM at Leavenworth High School
- Join us and help us spread the word!
- Sharing the Draft Plan with the Community and asking for their feedback

Project Website

- Draft Plan will be posted for Community to review and provide input
 - Live until March 5th



Meeting Agenda

- Project Analysis & Fatal Flaws
- Recommended Investments
- Upcoming Community Input Opportunities
- Project Next Steps







Project Next Steps

- Today February 13th
 - Finalize Draft Plan
- February 13th
 - Community Meeting
 - Draft Plan goes live on Project Website
- February 13th March 5th
 - Draft Plan is available for public input
- April 1st
 - Publish Final Plan!





Project Advisory Committee Meeting #5

Wednesday, January 29, 2020 11:00 AM - 1:00 PM

AGENDA ITEM #1: WELCOME

In-Person Participants:

- Penny Mabie, Envirolssues
- Jeff Wilkens, CDTC
- Nancy Smith, Leavenworth Chamber of Commerce
- Duane Goehner, Citizen, Friends of Leavenworth
- Joel Walinski, City of Leavenworth
- Kendra Breiland, Fehr & Peers
- Kara Hall, Fehr & Peers
- Jennifer Saugen, Perteet
- Sergeant Jason Reinfeld, Chelan County Sheriff
- Nick Manzaro, WSDOT
- Richard DeRock, Link Transit
- Josh Patrick, Chelan County

In-Person Observing:

• Lilith Vespier, City of Leavenworth

Purpose of Meeting: Share projects identified as having a fatal flaw and the recommended investments.

AGENDA ITEM #2 - PROJECT ANALYSIS & FATAL FLAWS

- The 10 highest performing projects were presented at the last PAC meeting and each member was asked to identify the projects they were most excited about
- Since then the Study Team has continued to evaluate and refine those projects
- Resulted in a list of six projects that have been evaluated in more detail
 - o US 2 Ski Hill to River Bend Improvements
 - o US 2 Pedestrian Undercrossing
 - o Pine Street Connection
 - o Parking Management
 - o US 2 Roundabout at Icicle Road
 - Peshastin Bicycle & Pedestrian Transit Connection

- A number of projects with fatal flaws have been identified a few of the high performing projects presented at the last meeting
- Grade Separated Crossings
 - This project was identified as infeasible at 9th and Front due to grade and the length of ADA ramps needed
 - Replacing ramps with stairs were considered but would require the addition of elevators
 - The long ramps would require pedestrians to walk the wrong direction to access crossings and block businesses on US 2
 - Simulation indicated some improvement in travel time on US 2, less than 2 minutes, but the minimal improvement paired with cost led to elimination of this
 - o At Front Street an Overcrossing was considered due to grade to the south of US 2
 - o At 9th Street an Undercrossing was considered
- Roundabouts on US 2
 - o Roundabouts considered at Front Street, 9th Street, Chumstick Highway
 - Additional analysis completed since the previous PAC meeting indicates that queueing on US 2 and on side-streets would be a concern
 - Roundabouts would not operate well under festival conditions
 - Temporary traffic control measures would also be harder to implement
 - Roundabouts are likely to have right-of-way impacts at major intersections
 - The number of pedestrians crossing US 2 on summer weekends would also impact operations at the roundabouts
- Two other projects evaluated at high-level to determine feasibility
 - Widening US 2
 - Project would adversely impact several of the guiding principles including Safe & Complete
 - Would impact bicyclists and pedestrians on US 2 through Leavenworth
 - Would need to extend all the way to SR 97
 - It was noted that the \$30M cost estimate is too low and that costs for this project would be likely to exceed \$100M based on widening between Leavenworth and SR 97
 - Parallel Routes
 - 3 options were considered a bypass, E. Leavenworth Road to Icicle Road,
 North Road to Chumstick Highway
 - E. Leavenworth Road to Icicle Road screened based on cost and local impact to residents
 - North Road to Chumstick Highway would require reconstruction to accommodate mix of uses with freight, passenger vehicles, and agricultural uses
 - o Screened based on cost
 - Leavenworth Bypass
 - o 1965 WSDOT idea would use Chumstick Highway alignment
 - o No other environmentally feasible routes

 No options result in travel time savings, based on that and cost this idea was screened

AGENDA ITEM #3 - RECOMMENDED INVESTMENTS

- Projects have been grouped in two categories
 - Localized Improvements & Management Strategies: these are projects that improve one location along the corridor or recommend a strategy rather than a capital improvement
 - US 2 Roundabout at Icicle Road
 - Peshastin Bicycle & Pedestrian Transit Connection
 - Parking Management
 - Transformative Measures: projects that provide measurable benefit to the corridor as a whole
 - US 2 Ski Hill to River Bend Streetscape Improvements
 - Undercrossing at US 2 Park & Ride
 - Pine Street Connection
 - US 2 Roundabout at Icicle Road
 - Would construct a single lane roundabout at Icicle Road
 - Providing safer access for locals using Icicle Road
 - Create a gateway to Leavenworth to transition drivers from mountain highway driving
 - Create a more efficient turn around for Link Transit by keeping the bus on US 2 rather than using the gas station parking lot
 - Project advances all five of the Guiding Principles
 - Was added by the community as part of the online pin-map and received over 60 "likes"
 - PAC members asked about growth assumed to occur at that intersection
 - While no growth was assumed, the roundabout was analyzed under seasonal conditions, which would have higher volume than most typical days
 - If future growth occurred at this intersection, signals could be added to meter traffic entering the roundabout to make sure that Icicle Road traffic could still access US 2
 - Project cost estimated between \$2.5-3M
 - Parking Management Strategies
 - Focuses on building on what has already been recommended and what is moving towards implementation
 - The goal is to park employees outside the downtown core or in off-street lots so that on-street spaces are available for visitors
 - First, rely on the WSDOT lot recently transitioned to the City, then utilize remaining capacity at Wilkommen Village Park & Ride
 - Once a management system is in place, parking can be managed differently for different events
 - Advances three of the Guiding Principles, cost will vary with implantation
 - Peshastin Bicycle & Pedestrian Connection

- Construction of a parallel bridge to the Peshastin Bridge to accommodate bicyclists and pedestrians
- Would allow Link Transit stop to be moved to US 2 rather than circulating into Peshastin – would save 6 minutes per loop
- Advances four of the Guiding Principles and is estimated to cost between \$4M-5M
- It was noted that this project could apply for funding that would not be available to other capital projects evaluated as part of this plan
- US 2 Ski Hill to River Bend Drive Streetscape Improvements
 - Project would widen north sidewalk to create a shared use path for bicyclists and pedestrians and restripe US 2 to provide extended right-turn lanes for local residents and transit
 - Traffic signal pre-emption would allow transit vehicles in the right-turn lane to proceed into general purpose traffic lane before passenger cars creating an advantage for using transit
 - This technology could be used by other shuttle operators
 - Emergency services would also have pre-emption and more space for vehicles to pull to the right, allowing first responders to have priority on the corridor
 - Would also include a visually appealing barrier to separate bicyclists and pedestrians on US 2
 - Would require eliminating the two-way-left-turn lane only in areas where additional right-turn lanes are added
 - Project would not improve travel time on US 2 but would provide more access for local residents and would not increase travel time
 - Advances four of the guiding principles and cost would be likely to vary based on implementation
 - Could be implemented one intersection at a time
- Pine Street Connection
 - Project would connect Pine Street across Chumstick Highway to River Bend Drive with construction of a new bridge across the river
 - Would match recent Pine Street improvements two general purpose travel lanes, shared use-path and sidewalks
 - Only project found to improve travel time on US 2
 - US 2 would still be congested during peak weekends and events but with a new bridge more people would be moving across the river
 - Would provide local connection to Safeway and schools on the other side of the river
 - It was noted that there is planned growth near US 2/River Bend Drive which operates poorly today that would need to be accounted for in a more detailed evaluation
 - This project would require intersection improvements at Alpensee Strauss and River
 Bend Drive as well as reconfiguration of the Safeway driveways
 - Should this project be advanced, more detailed operational analysis and environmental analysis would be needed to understand local impacts
 - This project advances three of the Guiding Principles and would cost between \$27-32M
- US 2 Undercrossing

- An Undercrossing near the US 2 Park & Ride was identified as the only feasible location for a grade separated crossing
- Undercrossing could be accessed from the Park & Ride but would also connect to the residential areas north of US 2 creating a connection for residents to the waterfront
- While no crossing exists at this location today it is anticipated that this location would serve as a mid-block crossing and would be a more direct connection across US 2 from residential neighborhoods
- Advances four of the Guiding Principles and is estimated to cost between \$3.5-4.5M

AGENDA ITEM #4 - UPCOMING COMMUNITY INPUT OPPORTUNITIES

- Community Meeting will be held Thursday February 13th from 5:30PM to 7:30PM
 - Study team will present project ideas and answer questions from community members
- Opportunity to provide input will also be available online for community members that cannot attend the meeting

AGENDA ITEM #5 - PROJECT NEXT STEPS

- Study team will be revising the Draft Plan based on input shared today
- Draft Plan will be published on February 13th and available for comment through Mid-March
 - The community input at the meeting and online will be used to finalize the Final Plan which will be available in early April
- None of the projects presented in this plan have funding. This plan is intended to be a menu of
 options for local agencies along the corridor. Any advancement of these projects will be based
 on interest of local agencies.

Appendices

D. Community Engagement Summary

ebruary 2020 Appendix

US 2 Upper Wenatchee Valley Transportation Study

Outreach Summary Draft, last updated 1/15/2020

Background

Project Description

The Chelan Douglas Transportation Council (CDTC) co-led a transportation study of the Upper Wenatchee Valley portion of Highway US 2 in partnership with the Washington State Department of Transportation North Central Region (WSDOT-NCR), Chelan County, LINK Transit and the City of Leavenworth. The primary emphasis of the study was to identify solutions and opportunities related to growing traffic congestion during the summer season, weekends and special events. The study developed ideas to help mitigate traffic congestion, improve safety, and improve accessibility to destinations along US 2 for motorists, pedestrians, cyclists, public transit riders, and emergency responders. The study also evaluated options for improving mobility for long-distance travelers on US 2 and evaluated the potential for improving intercity commuter bus operations through the corridor.

Study Area

The transportation study covered Highway US 2 from Coles Corner to Cashmere.

Schedule of Objectives

DATE	PROJECT OBJECTIVES
DECEMBER 2018 – NOVEMBER 2019	Planning context and data gathering: Convene a Project Advisory Committee (PAC) to ensure a wide variety of perspectives were represented and considered to guide the development of the corridor vision.
FEBRUARY – MAY 2019	Corridor vision development: Developed a vision that balanced community values, priorities and desires for increased and safe mobility in the face of current conditions and future development. Conduct interviews with key stakeholders and appraise stakeholders of opportunities to provide meaningful comments during data collection and corridor vision development.
MAY 2019 – JANUARY 2020	Evaluation of proposed solutions: Work closely with Cashmere, Dryden, Leavenworth and Peshastin communities to develop up to eight different capital improvement alternatives that could ease traffic congestion in the project area.
JANUARY – FEBRUARY 2020	Community update and input gathering: Inform potentially impacted communities about the study as well as its methodology, purpose, guiding principles, and desired outcomes before the Plan is identified. Host a community meeting to connect with community members directly.
TBD 2020	Plan identified:

Public Involvement Overview

Goal

To work directly with the public throughout the process to ensure that the diversity of public concerns and aspirations are understood, considered and are directly reflected (or not) in the final set of solutions and recommendations and why.

Target Audiences

Target audiences included multilingual residents, business owners, farmers as well as school, city and county representatives who live and work throughout the study area.

Methods

In order to ensure a wide variety of perspectives were represented and considered in the course of this study, the outreach team used the following methods to engage target audiences:

- Project Advisory Committee to represent diverse perspectives, English-speaking only.
- Project website to broadcast information in English with some translated content in Spanish.
- Facebook ads to promote project website in English and Spanish.
- Online survey in English and Spanish to confirm draft Guiding Principles met communities' expectations and goals.
- Interactive Social Pinpoint map to share project ideas in English with a one-page synopsis in Spanish.
- Farmers market booth to gauge public response on project ideas using poster boards and sticky notes. Engagement was all in English.
- Community meeting in English, with Spanish interpretation available, to share the draft Plan and engage directly with project area residents to provide opportunity for public comment.

Results

Project Advisory Committee (PAC)

The Project Advisory Committee is comprised of 11 members who represent:

- Chelan County
- Chelan Douglas Transportation Council
- City of Leavenworth
- Link Transit
- Local farmers and growers
- Local residents
- Washington State Department of Transportation
- Emergency service providers

Project website

The US 2 Upper Wenatchee Valley Corridor Transportation Study website engaged transit riders, cyclists, and pedestrians through both the online survey and Social Pinpoint map.

Online survey: The survey received 166 responses.

• 41% from Leavenworth residents

- 9% from Peshastin residents
- 6% from Coles Corner residents
- 4% from Cashmere residents.

Social Pinpoint (SPP): The SPP interactive map with proposed project ideas received 150 comments.

- 115 on Leavenworth projects
- 20 on Coles Corner projects
- 8 on Cashmere projects
- 7 on Peshastin projects

Stakeholder interviews

The outreach team conducted 13 stakeholder interviews with owners or staff of the following festival operators, community groups, and businesses.

•	Cascade	Medical	Center

- Cascade School District
- Dan's Food Market
- Eagle Creek Winery
- Leavenworth Chamber of Commerce
- Leavenworth Festhalle Civic Center
- NCW Hispanic Chamber of Commerce

- Oktoberfest
- Osprey Rafting Company
- Peshastin Community Council
- Posthotel
- Tierra Village
- Visconti's Restaurant

Farmers market booth

The project team staffed a booth at the Leavenworth Farmers Market in June 2019.

- 59 people, mostly local residents, engaged with staff and/or visited the booth.
- The Leavenworth segment of the study area received the greatest number of comments.

Discussion and evaluation

The objectives for this project will be met if the following conditions were met.

Conditions	Conditions met?
The project team receives robust comments from	Not yet. Most of the comments received were
diverse perspectives during each opportunity for	focused on Leavenworth and were all in English.
feedback and this level of engagement is	There is opportunity to more meaningfully engage
maintained or grown over the lifetime of the	residents of and workers in Coles Corner,
project.	Peshastin and Cashmere, particularly those who
	speak primarily Spanish.
Monitoring press coverage of the project could	Yes. The project team submitted press releases to
provide insight into whether the community is	the Leavenworth Echo, Wenatchee World, NCW
aware of and engaged with the project.	Life, and News Wenatchee. In addition, <u>KOHO</u>
	101.1, KPQ, KOZI, and Wenatchee World
	published articles about the project.
Surveying the PAC members after meetings will	Yes. The project team conducted informal surveys
help the project team to determine whether	at the end of each meeting and received mostly
members report being heard throughout the	positive response. When a PAC member had

development of potential solutions and the	د
identification of a preferred option.	

additional feedback to provide, the project team followed up with a phone call.

Other project goals to be evaluated upon project completion:

- The public indicates a high level of familiarity with the project during in-person engagement opportunities (e.g. the community open house) and the community feels their input was valued, considered and incorporated into the analysis and development of proposed solutions. Exit interviews from public events could help the team determine whether this objective has been met
- The Plan identified in February 2020 reflects project stakeholders' vision, priorities and desires for increased mobility and safety in and through the project area for all users.
- The Plan addresses and incorporates a combination of transportation modes (e.g. transit, cycling, pedestrian and individual vehicles).

Recommendations for future engagement

- Broaden the focus and reach of the entire study area to engage residents, farmers and growers in and around Coles Corner, Peshastin and Cashmere.
- Effectively engage Spanish-speaking residents and workers throughout the study corridor.
 - o The project team was not able to fully engage Spanish-speaking residents and workers because the majority of the study outreach was during the growing season and workers may have been too busy to engage.
 - Online and in-person engagement with multilingual audiences requires more resources and time. Ideally, the project website would be fully accessible in Spanish moving forward.
 - Finding and utilizing a spokesperson from within the Spanish-speaking community may be helpful in the future.

Appendices

E. Project Evaluation Matrix

February 2020 Appendix

US 2 Upper Wenatchee Valley Corridor Transportation Study Project Evaluation Criteria

Number	Guiding Principles	Metric Description	Ranking
1	Reliable. Locals, regional commuters, freight, and emergency responders have options to maintain a reliable travel time between key destinations.	1.1: Improves corridor travel time under current or future conditions.	8= Reduces difference in travel times experienced along corridor between summer weekends and event times and typical conditions for both summer weekends and events 4= Reduces the difference in travel times between typical conditions and summer weekends or events (but not both) 2= Minimal improvement expected as a result of a planning or programtic solution. 0= Does not improve the difference in travel times on the corridor between summer/event times and typical conditions
		1.2: Creates more reliable transportation connections in the region.	4= Major Connection (Serves large number of users or multiple modes) 2= Minor Connection (Serves primarily local trips or only one mode of travel) 0= No
	Safa & Complete The corridor offers	2.1: Improves emergency response times and access to the corridor.	6= Yes 0= No
2	Safe & Complete. The corridor offers appropriate multimodal infrastructure to meet users' needs and enhance safety.	2.2: Fixes a known sight distance issue or identified modal conflict point, including improving the frequency or comfort of pedestrian crossings, and access to more complete bicycle and pedestrian facilities along the corridor.	6= Yes 0= No
3	region's economy and growing seasonal usage of	3.1: Provides for a unique and welcoming travel experience.	6= Major amenity or enhancement 3= Minor amenity or enhancement 0= None
		3.2: Project encourages more efficient use of the corridor, in terms of the times when people travel, the modes they use, and how vehicles are stored.	6= Project encourages shifting of trips by mode, to other peak times and improves parking management 0= No
fundab 4 timefra manag	timeframe and include creative solutions to better manage traffic impacts from seasonal and special	4.1: Project can be completed within available Right-of-Way.	6= No Right of Way Aquistion Required 3= Minimal Right of Way Aquistion Required 0=Significnat Right of Way Aquistion Required
		4.2: Project costs are aligned with budget constraints.	6= Low Cost Improvement (\$0-\$400,000) 3= Moderate improvement cost (\$400,000-\$3M) 0= High cost (\$3M+)
5	Supported. Stakeholders and the community will be engaged to identify mutually beneficial solutions.	5.1: Receives support from the community and stakeholders throughout this study.	12= High 6= Medium 0= Low

									Jeet Evalu												
ID#	Project Description	Project Type	Priority Mode	Goal 1.1	Goal 1.2	Goal 2.1	Goal 2.2	Goal 3.1	Goal 3.2	Goal 4.1	Goal 4.2	Goal 5	Total Score	Project Ranking	Project Tier	Fatal Flaw?	Fatal Flaw Notes	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects	Project Not Advancing
1	Park & Ride to Stevens Pass with interim stops for employees and skiers.	Planning/Parking	Transit	4	2	0	0	3	6	6	6	12	39	9	2						х
2	Chumstick Highway is identified as an alternate route for emergency needs. Upgrade Chumstick to be a viable detour route for freight use	Design	Auto	4	4	6	6	6	0	0	0	0	26	25	2	Yes	Identified as too costly and not supported.				х
3	Signage and wayfinding to designated areas for parking/crossing	Parking	Parking	2	2	0	6	3	0	6	6	0	25	31	2				х		
4	Upgrade existing pull-outs paired with enhanced pedestrian crossings.	Design	Pedestrian	0	2	0	6	3	0	6	6	0	23	36	2				х		
5	Create new pull-outs with enhanced pedestrian crossings near known desire lines across US 2.	Design	Pedestrian	0	2	0	6	3	0	0	0	0	11	73	3						х
6	6" fog lines or narrower lanes may be effective for speed control and/or increased shoulder size for bikes.	Design	Bicycle	0	0	0	6	3	0	6	6	0	21	41	2				х		
7	Improve existing shoulders and add shoulders where none exist, such that bicycles could be accommodated on the shoulder as this is identified as a US bike route.	Design	Bicycle	0	2	0	6	3	6	0	3	6	26	25	2					х	
8	Improve sight distance in areas where pedestrians are known to cross	Design	Pedestrian	0	0	0	6	0	0	6	3	0	15	60	3						х
9	No Parking Signs	Parking	Parking	2	0	0	0	0	0	6	6	0	14	62	3				х		
10	No Pedestrian Crossing Signs	Design	Safety Improvement	0	0	0	0	0	0	6	6	0	12	65	3				Х		
11	Speed enforcement campaign – high traffic impact timeframes	Programming	Safety Improvement	0	0	0	0	0	0	6	6	6	18	49	3						х
12	High Friction Surface Treatments	Design	Safety Improvement	0	0	6	0	0	0	6		0	12	65	3				х		
13	Create variable speed area using ITS.	Design	Safety Improvement	0	0	0	0	0	0	6	3	0	9	74	3				х		
14	Create a cordon surrounding festival areas that autos are prohibited from entering.	Programming	Transit/Emergency/Bicycle /Pedestrian	4	0	6	6	6	6	6	3	6	43	2	1	Yes	Not supported on US 2 and already implemented on some parallel routes.				x
15	Temporary peak direction center-thru lane through Leavenworth on US 2, which could shift direction as needed.	Design/Programming	Auto	4	4	6	6	0	6	6	3	12	47	1	1						х
16	Rechannelize US 2 to create a separated multi-use trail parallel to US 2.	Design	Bicycle/Pedestrian	0	4	0	6	6	6	6	3	12	43	2	1			х			
17	Center running Transit/Emergency Only Lanes During Events/High Demand Periods	Programming	Transit/Emergency	4	2	6	0	3	6	6	3	0	30	16	2						х
18	Grade Separated Pedestrian Crossings – 3 bridges or a pedestrian underpass	Design	Pedestrian	4	2	6	6	6	6	0	0	12	42	4	1			х			
19	Construct a bridge over the Wenatchee River connecting Chumstick Highway to River Bend Road, creating a parallel route over the river in Leavenworth.	Design/Planning	Auto	8	4	6	6	6	0	0	0	0	30	16	2			х			
20	Improve lcicle Road to provide better bicycle facilities as an alternate bicycle route - could include 6" or narrower fog lines or advisory shoulders.	Design/Planning	Bicycle/Pedestrian	8	4	6	6	6	0	0	0	12	42	4	1	Yes	Identified as too costly and not supported.				x
21	Create better parallel route capacity: Chumstick Hwy to train station (more complete facility)	Design/Planning	Bicycle/Pedestrian	8	4	6	6	6	0	0	0	12	42	4	1	Yes	Not a realistic option for bypassing the corridor.				х
22	Enhanced Modal Separation	Design	Pedestrian	0	2	0	6	6	6	6	3	12	41	8	1			х			
23	Flagger Training	Programming	Auto	4	0	6	6	0	0	6	6	0	28	20	2	Yes	City has already hired traffic management firm.				x

									Jeer Evalu												
ID#	Project Description	Project Type	Priority Mode	Goal 1.1	Goal 1.2	Goal 2.1	Goal 2.2	Goal 3.1	Goal 3.2	Goal 4.1	Goal 4.2	Goal 5	Total Score	Project Ranking	Project Tier	Fatal Flaw?	Fatal Flaw Notes	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects	Project Not Advancing
24	Expanded visitor parking at east/west end of Leavenworth – Park & Ride paired with shuttle options, including a potential center running transit-lane, or Ariel tramway with connections to Downtown Leavenworth.	Parking	Parking/Transit	4	2	0	0	6	6	6	3	0	27	22	2						х
25	Reconsider transit service times/headways to include more frequent service, specifically during off-peak travel times to better accommodate service industry employees	Planning	Transit	4	2	0	0	3	6	6	6	0	27	22	2						х
26	Transit shuttle service	Planning	Transit	4	2	0	0	3	6	6	6	6	33	12	2				х		
27	Micro-mobility options including bike share/scooters, neighborhood electric vehicles or other modes that could be used to serve the Leavenworth area.	Planning	Bicycle	0	2	0	0	6	6	6	6	0	26	25	2			х			
28	Neighborhood Electric Vehicles as Modes	Planning		0	2	0	0	6	6	6	6	0	26	25	2						x
29	Remove on-street parking to connect bicycle lane paired with delivery zone/parking/drop off	Parking/Design	Bicycle	0	2	0	6	3	6	6	3	0	26	25	2			Х			
30	Parking Management	Parking	Parking	2	2	0	0	3	6	6	6	12	37	10	2			Х			
31	Electronic Counter Systems for Parking tied to Dynamic Wayfinding	Parking	Parking/Auto	2	2	0	0	6	6	6	3	0	25	31	2						x
32	Parking app	Parking	Parking	2	2	0	0	3	6	6	6	0	25	31	2				х		
33	Build roundabouts at each primary intersection	Design	Auto	8	4	6	0	6	0	0	0	12	36	11	2	Yes	Traffic analysis indicated significant failures and	ı x			
34	More/better bike parking	Parking	Bicycle	0	2	0	0	3	6	6	6	0	23	36	2				х		
35	Re-introduce the shuttle train from Wenatchee and Everett into Leavenworth (the old "Snow Train")	Planning	Transit	0	2	0	0	6	6	6	3	0	23	36	2	Yes	Costly and limited by access to railroads.				х
36	Car share with thought given to changing curb space management	Planning	Auto	0	0	0	6	3	0	6	6	0	21	41	2						х
37	Delivery zone/parking/drop-off	Parking	Parking/Safety	0	0	0	6	3	0	6	6	0	21	41	2						x
38	Transit/Emergency Preemption	Design	Transit/Emergency	0	2	6	0	0	0	6	6	0	20	44	3				х		
39	Bicycle facility south of river	Design	Bicycle	0	2	0	6	6	6	0	0	0	20	44	3	Yes	Project identified as costly and not supported.				х
40	Daily service on trailways	Programming	Transit	0	2	0	0	3	6	6	3	0	20	44	3						Х
41	Aerial Tramways integrated with parking strategy	Parking	Parking	4	2	0	0	6	6	0	0	0	18	49	3	Yes	Project already captured by project #24 and will be considered as parking strategy rather than a stand-alone project.				х

									Jeet Evalu												
ID#	Project Description	Project Type	Priority Mode	Goal 1.1	Goal 1.2	Goal 2.1	Goal 2.2	Goal 3.1	Goal 3.2	Goal 4.1	Goal 4.2	Goal 5	Total Score	Project Ranking	Project Tier	Fatal Flaw?	Fatal Flaw Notes	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects	Project Not Advancing
42	Emergency Routes/Staging	Programming	Emergency	0	0	6	0	0	0	6	6	0	18	49	3	Yes	Already happening				X
43	Enforcement for pedestrian crossings – vehicles at crosswalks, and j-walking between crosswalks.	Programming	Safety	0	0	0	6	0	0	6	6	0	18	49		Yes	Resources for implementation are likely infeasible.				х
44	Employee TDM strategies	Programming	Programming	0	0	0	0	0	6	6	6	0	18	49	3				х		
45	Delivery hours/permits	Planning	Programming	4	0	0	0	0	0	6	6	0	16	59	3				х		
46	Create combination zone with On-Street Parking or Tour Bus Drop-Off	Parking	Parking/Transit	0	0	0	0	3	0	6	6	0	15	60	3		Combined with Project #37.				х
47	Improved parallel facilities for all modes	Planning/Design	Bicycle/Pedestrian	8	4	6	6	6	6	0	0	6	42	4	1					x	
48	Spot treatments at local access points	Design	Auto	4	2	0	6	3	0	6	6	0	27	22	2					x	
49	Adaptive management strategies, such as transit on shoulders paired with Park & Ride at 97 interchange.	Planning	Transit	4	2	6	0	6	6	0	0	0	24	34	2			х			
50	Park & Ride at 97 interchange paired with shuttle	Parking	Parking	4	2	0	0	6	6	6	0	6	30	16	2						х
51	Pedestrian and bicycle improvements along US 2 based on land use	Design	Bicycle/Pedestrian	0	2	0	6	6	6	0	0	12	32	13	2					X	
52	Improve Peshastin bridge to better accommodate bicycles and pedestrian connections from US 2 to Peshastin	Design	Bicycle/Pedestrian	0	4	6	6	3	0	0	0	0	19	48	3			x			
53	Snow removal for bus stops	Programming	Transit	0	2	0	0	3	0	6	6	0	17	56	3				X		
54	Aerial tramway	Planning	Transit	0	2	0	0	6	6	0	0	0	14	62	3		Length needed for tramway to reach potential parking areas in Segment 3 likely to make project infeasible.				х
55	Improvements for bus stops along US 2, keeping them on the highway and improving bicycle and pedestrian connections to stops.	Planning	Transit/Bicycle/Pedestrian	0	2	0	0	3	0	6	3	0	14	62	3					х	
56	Enforcement campaign for speed	Programming	Safety Improvement	0	0	0	0	0	0	6	6	0	12	65	3						X
57		Design	Safety Improvement	0	0	0	0	0	0	6	6	6	18	49	3						X
58	High Friction Surface Treatments	Design	Safety Improvement	0	0	6	0	0	0	6	6	0	18	49	3				Х		
59	Invest in parallel routes for bikes	Design/Planning	Bicycle	0	2	0	6	6	6	0	0	12	32	13	2					X	
60	Route 22 opportunities with W. Cashmere Bridge Project	Planning	Transit	0	2	0	0	3	6	0	6	0	17	56	3					Х	
61	Improve safety around icy spots on the road (variable message signs?)	Planning	Safety Improvement	0	0	0	0	0	0	6	6	0	12	65	3	Yes	Project infeasible due to liability associated with project.				х
62	Speed feedback signs	Planning	Safety Improvement	0	0	0	0	0	0	6	6	0	12	65	3						Х
63	Enforcement campaign for speed	Programming	Safety Improvement	0	0	0	0	0	0	6	6	0	12	65	3						Х
64	Additional red light/warning signs	Design	Safety Improvement	0	0	0	0	0	0	6	6	0	12	65	3						х
65	High Friction Surface Treatments	Design	Safety Improvement	0	0	6	0	0	0	6		0	12	65	3				x		
66	Shoulder Treatments to better accommodate bicyclists on US 2 (Edge line rumble strips, striping, etc.)	Design	Bicycle	0	2	0	6	3	6	6	3	6	32	13	2				х		
67	Shoulder Treatments to better accommodate bicyclists on US 2	Design/Planning	Bicycle	0	2	0	6	3	6	6	3	0	26	25	2				х		
68	Improve bicycle and pedestrian connections to transit stops	Design/Planning	Transit/Bicycle/Pedestrian	2	4	0	6	3	6	0	3	0	24	34	2				,	х	

ID ‡	Project Description	Project Type	Priority Mode	Goal 1.1	Goal 1.2	Goal 2.1	Goal 2.2	Goal 3.1	Goal 3.2	Goal 4.1	Goal 4.2	Goal 5	Total Score	Project Ranking	Project Tier	Fatal Flaw?	Fatal Flaw Notes	Selected for Evaluation	Quick Wins & Small Steps	Vision Projects	Project Not Advancing
100	Measures to prevent vehicles occupying motorcycle parking locations.	Parking	Parking	0	2	0	0	3	0	6	6	0	17	56	3						X
101	Leavenworth At-Grade Bypass	Design	Auto	8	2	6	0	6	0	0	0	6	28	20	2	YPS	Limited access concepts tested, result in significant impacts to local residents				х
102	Add an additional lane to US-2 in both directions	Design	Auto	8	4	6	0	6	0	0	0	6	30	16	2	Yes	Cost due to ROW do not align with project Guiding Principles.				х
103	Install additional crosswalks/pedestrian signage	Design	Pedestrian	0	2	0	6	3	0	3	3	6	23	36	2				x		
104	Remove parking spaces between 13th and 14th on Front St to allow	Design	Auto	0	2	0	0	0	0	6	6	6	20	44	3						Х
105	Roundabout at intersection of US-2/SR-207	Design/Planning	Auto	0	2	0	6	3	0	3	3	6	23	36	2					х	
108	Sign visibility enhancements	Design	Auto	0	0	0	6	0	0	6	6	0	18	49	3						х

Additional Notes: Projects with ID greater than 100 were added based on community input.

Segment 1
Segment 2
Segment 3
Segment 4

Appendices

F. Project Findings

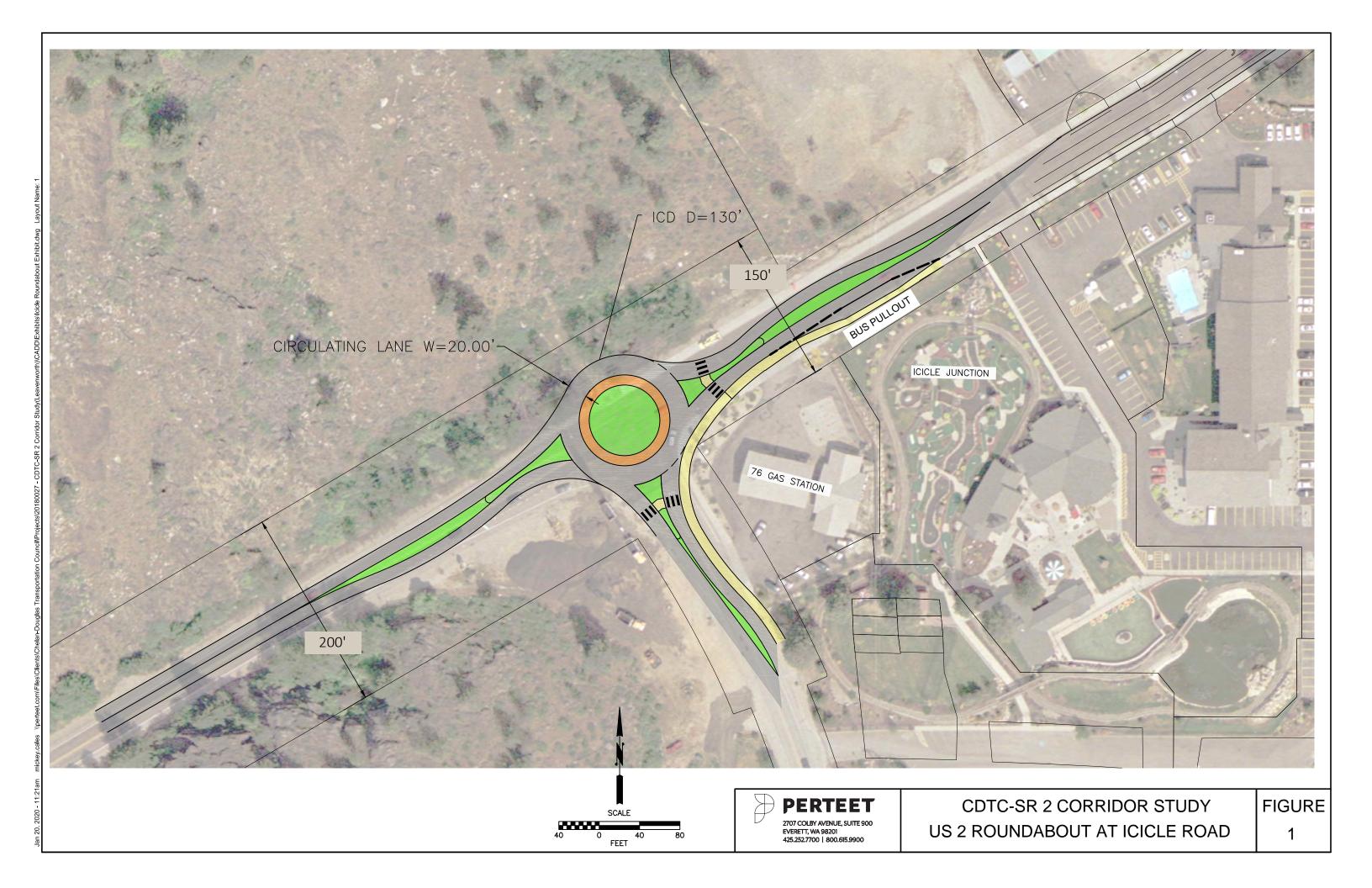
February 2020 Appendix

SimTraffic Post-Processor Average Results from 10 Runs Network Performance

US 2
Existing Conditions
Weekend Peak Hour

Performance Measure	Average	Std. Dev.	Minimum	Maximum
Average Delay (seconds)	185.3	25.4	131.8	213.5
Total Delay (hours)	175	25	121	203
Average Stopped Delay (seconds)	155.1	25.2	103.1	186.7
Total Stopped Delay (hours)	147	25	94	178
Total Stops	8,579	447	7,602	9,203
Average Stops	2.53	0.12	2.31	2.70
Total Distance Traveled (miles)	3,093	43	3,035	3,174
Average Speed (mph)	10.7	1.1	10.0	13.0
Total Travel Time (hours)	300.7	30.7	237.8	339.3
Vehicles Entered	3,197	51	3,105	3,277
Vehicles Exited	3,019	40	2,958	3,107
Percent Demand Served	94.4%	1.3%	92.8%	97.2%
Fuel Used (gallons)	126	6	113	134
HC Emissions (grams)	1,269	81	1,130	1,398
CO Emissions (grams)	32,837	1,396	30,529	35,147
NOx Emissions (grams)	3,740	177	3,461	3,973

Fehr & Peers 4/1/2020





PLANNING LEVEL OPINION OF COST SUMMARY

Project Description	n: US 2 Corridor Study	Client: Chelan Douglas T.C.
Corridor Section:	Leavenworth	Date: 1/7/2020
Location:	US 2 / Icicle Road	Date of Cost Index: 2020
	Cal	culated By/Entered By: JESL
		Checked By: JDS

US 2 Roundabout at Icicle Road

		US 2 Roundabout at Icicle Ro	ad			
				ESTIMATED		
		ITEM	UNIT	UNIT COST	QTY	COST
l.		RIGHT OF WAY				
		Temporary Construction Easements	EA	\$5,000	2	\$10,000
		RIGHT OF WAY TOTAL				\$10,000
II.		CONSTRUCTION				
1		PREPARATION/GRADING/DRAINAGE				
	1.1	PREPARATION				
		CLEAR & GRUB, DEMO	ACRE	\$6,000	0.3	\$1,800
		REMOVING EXISTING PAVEMENT	SY	\$10	5,700	\$57,000
		REMOVAL STRUCTURES & OBSTRUCTIONS	LS	\$10,000	1	\$10,000
	1.2	EARTHWORK				
		ROADWAY EXCAVATION INCL, HAUL	CY	\$30	1,000	\$30,000
	1.3	STORMWATER MITIGATION				
		DETENTION AND TREATMENT	SF	\$6	38,900	\$233,400
	1.4	STORM SEWER				
		CATCH BASIN TYPE 1	EA	\$2,000	8	\$16,000
		CATCH BASIN TYPE 2	EA	\$3,000	3	\$9,000
		PLAIN CONC. STORM SEWER PIPE 18 IN. DIAM.	LF	\$125	1,450	\$181,250
		STRUCTURE EXCAVATION CL. B	CY	\$15	1,100	\$16,500
2		SURFACING				
		HOT MIX ASPHALT	TON	\$130	3,300	\$429,000
		CRUSHED SURFACING	TON	\$35	1,700	\$59,500
		CROSHED SOM ACING	TON	233	1,700	,J9,J00
3		ROADSIDE DEVELOPMENT				
		SEEDING, MULCHING & FERTILIZING	ACRE	\$3,500	0.3	\$1,050
		TEMP. WATER POLLUTION & EROSION CONTROL (6%)	LS	\$87,200	1	\$87,200
		LANDSCAPING	LS	\$18,000	1	\$18,000
4		TRAFFIC				
		SIGNAL SYSTEMS (CONDUIT FOR FUTURE METERS)	LS	\$20,000	1	\$20,000
		ILLUMINATION	LS	\$80,000	1	\$80,000
		SIGNING	LS	\$5,000	1	\$5,000
		CURBS	LF	\$35	7,100	\$248,500
		SIDEWALKS	SY	\$60	600	\$36,000
		TRAFFIC CONTROL (10%)	LS	\$145,300	1	\$145,300

Icicle Roundabout Estimate 1



PLANNING LEVEL OPINION OF COST SUMMARY

Project Description	n: US 2 Corridor Study		Client: Che	elan Dou	glas T.C.
Corridor Section:	Leavenworth		Date: 1/7	//2020	
Location:	US 2 / Icicle Road	Date o	of Cost Index: 202	20	
5	OTHER ITEMS				_
	SURVEYING	LS	\$29,100	1	\$29,100
6	MISCELLANEOUS (10%)	LS	\$171,400	1	\$171,400
7	CONSTRUCTION SUBTOTAL (ITEMS 1 THRU 6)				\$1,885,000
8	MOBILIZATION (10%)				
	10% OF ITEM 7	EST	\$188,500	1	\$188,500
9	SUBTOTAL (ITEMS 7 & 8)				\$2,073,500
10	CONSTRUCTION				
	ENGINEERING (12% OF ITEM 9)	EST	\$249,000	1	\$249,000
	ENVIRONMENTAL COMPLIANCE (2% OF ITEM 9)	EST	\$42,000	1	\$42,000
11	CONSTRUCTION TOTAL (ITEMS 9 & 10)				\$2,364,500
III.	PRELIMINARY WORK				
	PRELIMINARY ENGINEERING (18% OF ITEM 11)	EST	\$425,700	1	\$425,700
	ENVIRONMENTAL PERMITS	EST	\$90,000	1	\$90,000
IV.	TOTAL ESTIMATED COST				
	(ITEMS I, 14 & III)				\$2,900,000

The above opinion of cost is a planning level estimate only. It is based on best available information and scope at the time, not on the results of a detailed engineering study, and is supplied as a budgeting guide only. Perteet Inc. does not guarantee or warrant the accuracy of this planning level estimate.

Icicle Roundabout Estimate 2

Intersection				
Intersection Delay, s/veh	7.5			
Intersection LOS	A			
Approach	EB	WB	NB	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	492	565	271	
Demand Flow Rate, veh/h	502	576	276	
Vehicles Circulating, veh/h	164	56	461	
Vehicles Exiting, veh/h	468	681	205	
Ped Vol Crossing Leg, #/h	0	1	3	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	7.6	7.2	7.8	
Approach LOS	А	A	А	
Lane	Left	Left	Left	
Larro		Loit	Loit	
Designated Moves	LTR	LT	LR	
Designated Moves	LTR LTR	LT LT	LR	
Designated Moves Assumed Moves RT Channelized Lane Util	LTR LTR 1.000	LT LT 1.000	LR LR 1.000	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s	LTR LTR 1.000 2.609	LT LT 1.000 2.609	LR LR 1.000 2.609	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s	LTR LTR 1.000 2.609 4.976	LT LT 1.000 2.609 4.976	LR LR 1.000 2.609 4.976	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h	LTR LTR 1.000 2.609 4.976 502	LT LT 1.000 2.609 4.976 576	LR LR 1.000 2.609 4.976 276	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h	LTR LTR 1.000 2.609 4.976 502 1167	LT LT 1.000 2.609 4.976 576 1303	LR LR 1.000 2.609 4.976 276 862	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h Entry HV Adj Factor	LTR LTR 1.000 2.609 4.976 502 1167 0.980	LT LT 1.000 2.609 4.976 576 1303 0.981	LR LR 1.000 2.609 4.976 276 862 0.982	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h Entry HV Adj Factor Flow Entry, veh/h	LTR LTR 1.000 2.609 4.976 502 1167 0.980 492	LT LT 1.000 2.609 4.976 576 1303 0.981 565	LR LR 1.000 2.609 4.976 276 862 0.982 271	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h Entry HV Adj Factor Flow Entry, veh/h Cap Entry, veh/h	LTR LTR 1.000 2.609 4.976 502 1167 0.980 492 1144	LT LT 1.000 2.609 4.976 576 1303 0.981 565 1278	LR LR 1.000 2.609 4.976 276 862 0.982 271 846	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h Entry HV Adj Factor Flow Entry, veh/h Cap Entry, veh/h V/C Ratio	LTR LTR 1.000 2.609 4.976 502 1167 0.980 492 1144 0.430	LT LT 1.000 2.609 4.976 576 1303 0.981 565 1278	LR LR 1.000 2.609 4.976 276 862 0.982 271 846 0.320	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h Entry HV Adj Factor Flow Entry, veh/h Cap Entry, veh/h V/C Ratio Control Delay, s/veh	LTR LTR 1.000 2.609 4.976 502 1167 0.980 492 1144 0.430 7.6	LT LT 1.000 2.609 4.976 576 1303 0.981 565 1278 0.442 7.2	LR LR 1.000 2.609 4.976 276 862 0.982 271 846 0.320 7.8	
Designated Moves Assumed Moves RT Channelized Lane Util Follow-Up Headway, s Critical Headway, s Entry Flow, veh/h Cap Entry Lane, veh/h Entry HV Adj Factor Flow Entry, veh/h Cap Entry, veh/h V/C Ratio	LTR LTR 1.000 2.609 4.976 502 1167 0.980 492 1144 0.430	LT LT 1.000 2.609 4.976 576 1303 0.981 565 1278	LR LR 1.000 2.609 4.976 276 862 0.982 271 846 0.320	



PLANNING LEVEL OPINION OF COST SUMMARY

Project Description:	SR 2 Corridor Study	Client: Chelan Douglas Transportation Council
Corridor Section:	US-2	Date: 1/7/2020
Location:	Leavenworth	Date of Cost Index: 2020
		Calculated By/Entered By: JESL
		Checked By: JDS

US 2 EXPRESS BUS ACCESS AT PESHASTIN

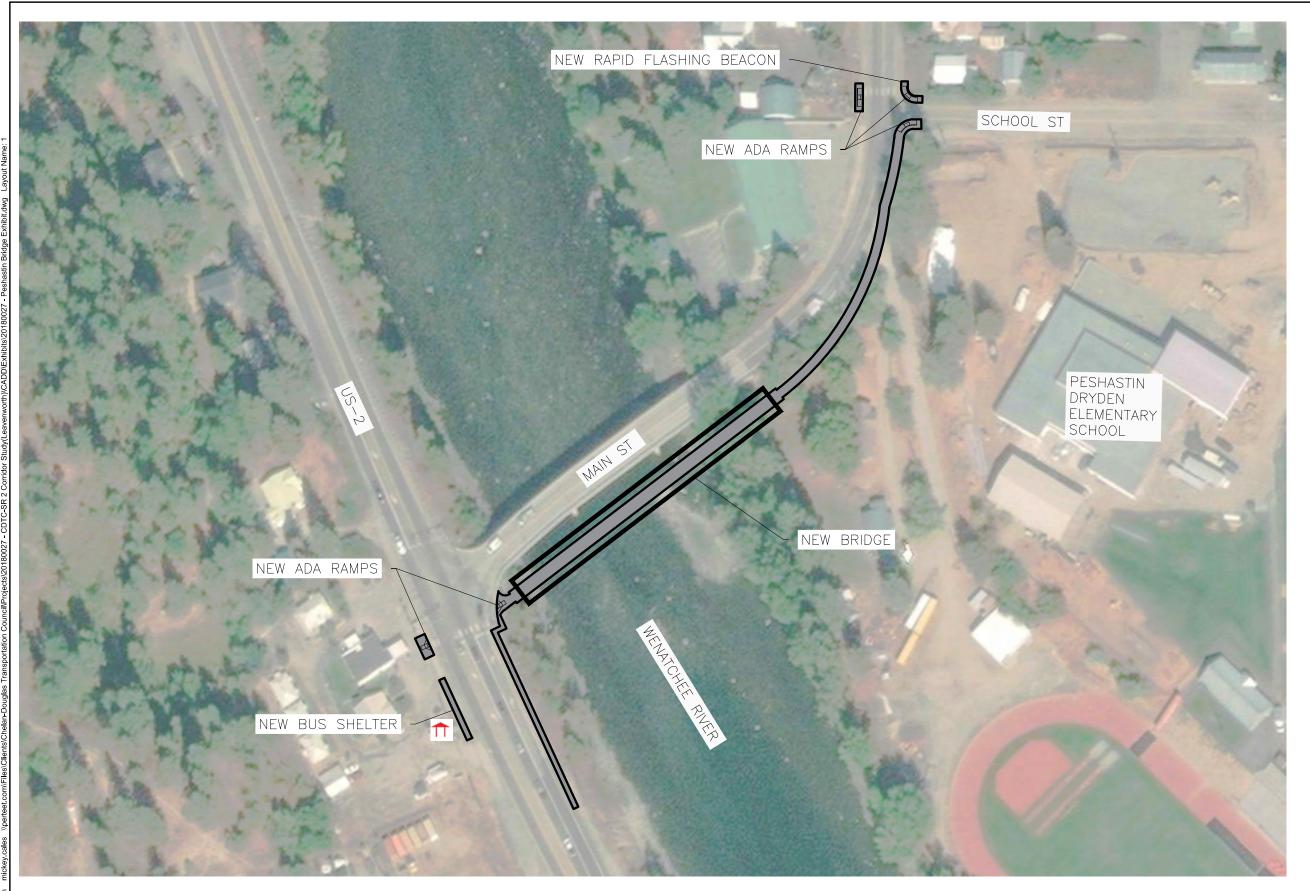
				ESTIMATED UNIT		
		ITEM	UNIT	COST	QTY	COST
l.		RIGHT OF WAY				
		RIGHT OF WAY (urban undeveloped) for bridge RIGHT OF WAY TOTAL	SF	\$20	4,800	\$96,000 \$96,000
II.		CONSTRUCTION				
1		PREPARATION/GRADING/DRAINAGE				
	1.1	PREPARATION				
		CLEAR & GRUB, DEMO	ACRE	\$10,000	0.2	\$2,000
		REMOVAL STRUCTURES & OBSTRUCTIONS	LS	\$10,000	1	\$10,000
	1.2	EARTHWORK				
		ROADWAY EXCAVATION INCL, HAUL	CY	\$40	210	\$8,400
		STRUCTURE EXCAVATION CLASS A INCL. HAUL	CY	\$25	400	\$10,000
2		STRUCTURE				
		PEDESTRIAN BRIDGE (12' wide total incl. barrier/railing,				
		assumed steel structure)	SF	\$450	4,900	\$2,205,000
		RETAINING WALLS (FOR SIDEWALK ON HWY)	CY	\$100	1,500	\$150,000
3		SURFACING		4		***
		CRUSHED SURFACING	TON	\$30	400	\$12,000
4		ROADSIDE DEVELOPMENT				
		TEMP. WATER POLLUTION & EROSION CONTROL (4%)	LS	\$103,700	1	\$103,700
		LANDSCAPING	LS	\$66,000	1	\$66,000
5		TRAFFIC				
		ILLUMINATION	LS	\$27,000	1	\$27,000
		SIGNING	LS	\$5,000	1	\$5,000
		CURBS	LF	\$25	600	\$15,000
		CURB RAMP	EA	\$2,000	5	\$10,000
		SIDEWALKS	SY	\$60	1,200	\$72,000
		TRAFFIC CONTROL (5%)	LS	\$129,700	1	\$129,700
5.1		OTHER ITEMS	16	¢202.663	4	4202 522
		SURVEYING (5%)	LS	\$302,600	1	\$302,600
6		MISCELLANEOUS (10%)	LS	\$312,900	1	\$312,900
7		CONSTRUCTION SUBTOTAL (ITEMS 1 THRU 6)				\$3,441,300

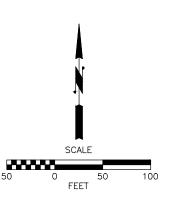


PLANNING LEVEL OPINION OF COST SUMMARY

Project Description:	SR 2 Corridor Study		Client: Chelar	n Douglas Trans	portation Council						
Corridor Section:	US-2		Date: 1/7/20	020							
Location:	Leavenworth	Da	Date of Cost Index: 2020								
8	MOBILIZATION (10%)										
	10% OF ITEM 7	EST	\$344,200	1	\$344,200						
9	SUBTOTAL (ITEMS 7 & 8)				\$3,785,500						
10	SALES TAX										
	8.5% OF ITEM 9	EST	\$321,800	1	\$321,800						
12	SUBTOTAL (ITEMS 9 THRU 11)				\$4,107,300						
13	CONSTRUCTION										
	ENGINEERING (12% OF ITEM 12)	EST	\$493,000	1	\$493,000						
	ENVIRONMENTAL COMPLIANCE (2% OF ITEM 12)	EST	\$83,000	1	\$83,000						
14	CONSTRUCTION TOTAL (ITEMS 12 & 13)				\$4,683,300						
III.	PRELIMINARY WORK										
	PRELIMINARY ENGINEERING (15.0% OF ITEM 14) ENVIRONMENTAL PERMITS	EST EST	\$702,500 \$140,000	1 1	\$702,500 \$140,000						
IV.	TOTAL ESTIMATED COST										
	(ITEMS I, 14 & III)				\$5,630,000						

The above opinion of cost is a planning level estimate only. It is based on best available information and scope at the time, not on the results of a detailed engineering study, and is supplied as a budgeting guide only. Perteet Inc. does not guarantee or warrant the accuracy of this planning level estimate.

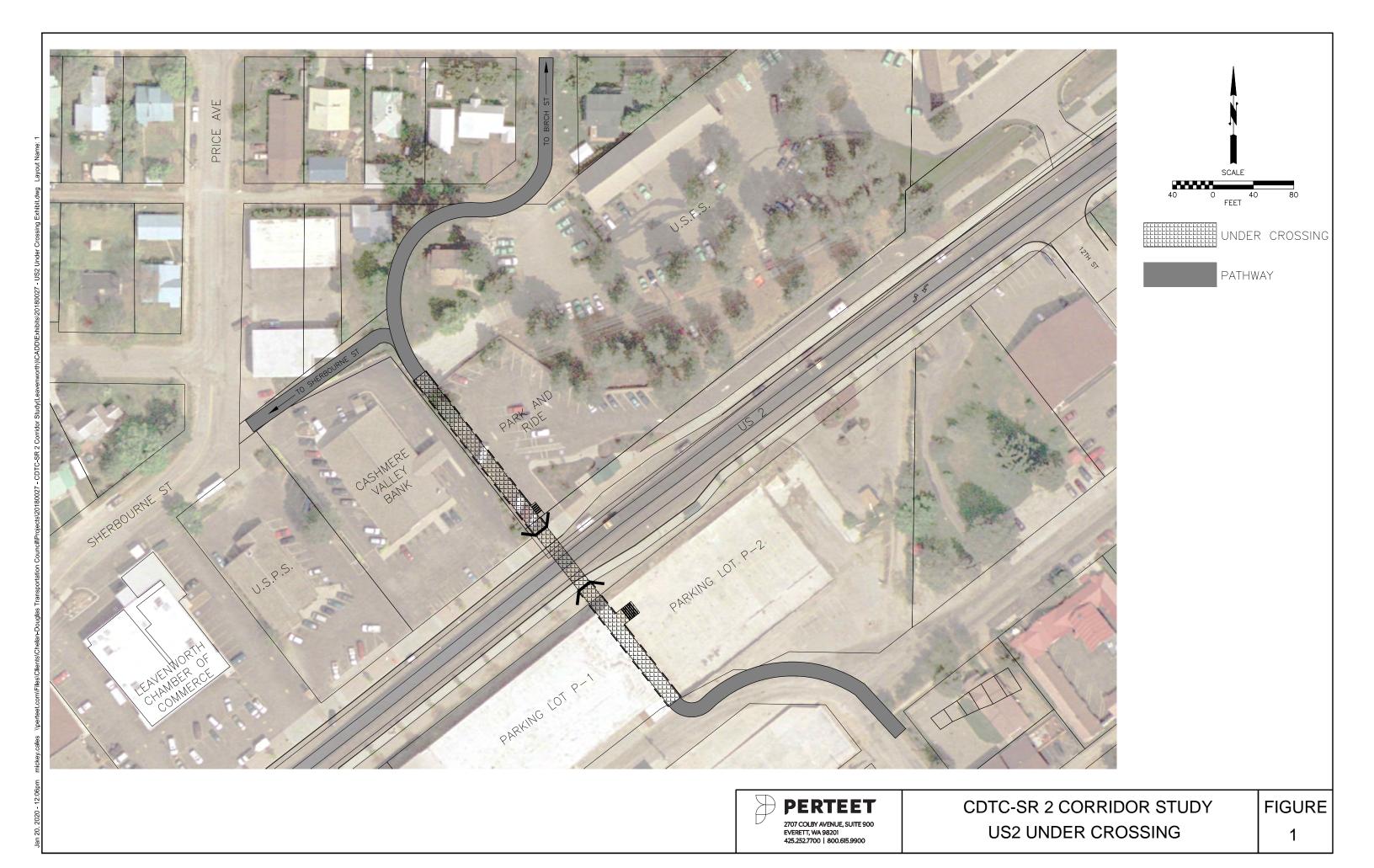




PERTEET

2707 COLBY AVENUE, SUITE 900
EVERETT, WA 98201
425.252.7700 | 800.615.9900

CDTC-SR 2 CORRIDOR STUDY PESHASTIN BICYCLE & PEDESTRIAN TRANSIT CONNECTION FIGURE





PLANNING LEVEL OPINION OF COST SUMMARY

Project Description:	US 2 Corridor Study	Client: Chelan Douglas T.C.
Corridor Section:	Leavenworth	Date: 1/7/2020
Location:	US 2 at Park and Ride	Date of Cost Index: 2020
		Calculated By/Entered By: JESL
		Checked By: IDS

US 2 UNDERCROSSING

		US 2 UNDERCR	OSSING			
			1	ESTIMATED UNIT		
		ITEM	UNIT	COST	QTY	COST
I.		RIGHT OF WAY			•	
		Permanent Sidewalk Easement (USFS)	SF	\$45	4,100	\$184,500
		Temporary Construction Easement (private owners)	SF	\$20	2,200	\$44,000
		RIGHT OF WAY TOTAL	0.	7-0	_,	\$228,500
						¥==0,000
II.		CONSTRUCTION				
1		PREPARATION/GRADING/DRAINAGE				
-	1.1	PREPARATION				
	1.1	REMOVAL STRUCTURES & OBSTRUCTIONS	LS	\$20,000	1	\$20,000
		REMOVAE STRUCTURES & OBSTRUCTIONS	LJ	720,000	_	720,000
	1.2	EARTHWORK				
	1.2	STRUCTURE EX. CL. A INCL. HAUL	CY	\$100	2,300	\$230,000
		STRUCTURE EX. CL. A INCL. HAUL	Cf	\$100	2,300	\$250,000
	1.3	STORMWATER MITIGATION				
	1.5	DETENTION AND TREATMENT	SF	\$6	5,800	¢24 900
		DETENTION AND TREATIVIENT	31	ŞÜ	3,000	\$34,800
	1.4	STORM SEWER				
	1.4		ГΛ	¢2.000	4	¢0.000
		CATCH BASIN TYPE 1	EA	\$2,000	4	\$8,000
		CATCH BASIN TYPE 2	EA LF	\$3,000	2	\$6,000
		PLAIN CONC. STORM SEWER PIPE 18 IN. DIAM.		\$125	460	\$57,500
		STRUCTURE EXCAVATION CL. B	CY	\$15	400	\$6,000
2		CTRUCTURE				
2		STRUCTURE	C.F.	¢200	4.400	¢220.000
		PRECAST REINFORCED 3-SIDED BOX CULVERT	SF	\$200	1,100	\$220,000
		RETAINING WALLS (Cast in Place)	SF	\$100	5,300	\$530,000
		GRAVEL BACKFILL FOR WALL	CY	\$60	200	\$12,000
		RAILING	LF	\$250	710	\$177,500
•		CLIDEACING				
3		SURFACING	674	4400	200	
		PORTLAND CEMENT CONCRETE	SY	\$100	800	\$80,000
		HOT MIX ASPHALT	TON	\$120	100	\$12,000
		CRUSHED SURFACING BASE COURSE	TON	\$40	300	\$12,000
_		DO ADOIDE DEVELOPMENT				
4		ROADSIDE DEVELOPMENT		404 700	_	40.4 = 00
		TEMP. WATER POLLUTION & EROSION CONTROL (6%)	LS	\$91,700	1	\$91,700
		LANDSCAPING	LS	\$0	1	\$0
_						
5		TRAFFIC		640.000	غ. د	440.000
		REMOVE AND SALVAGE SIGNAL SYSTEM	LS	\$10,000	1	\$10,000
		ILLUMINATION	LS	\$33,000	1	\$33,000
		SIGNING	LS	\$5,000	1	\$5,000
		CURBS	LF	\$25	40	\$1,000
		SIDEWALKS	SY	\$60	1,200	\$72,000
		TRAFFIC CONTROL (10%)	LS	\$152,700	1	\$152,700

US 2 Undercrossing

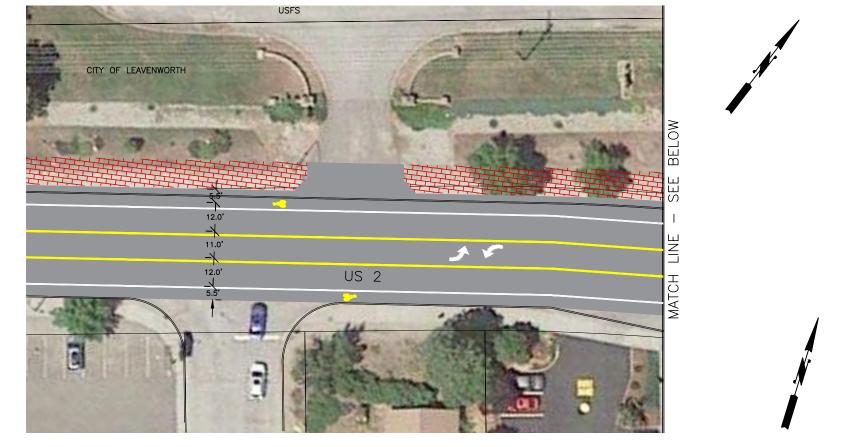


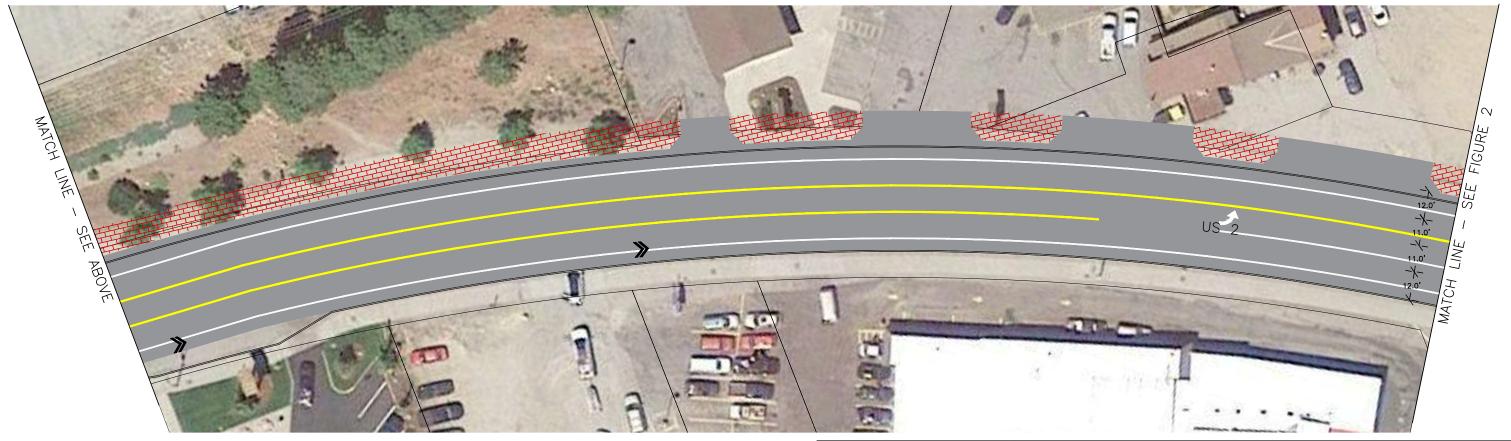
PLANNING LEVEL OPINION OF COST SUMMARY

Project Description:	US 2 Corridor Study		Client: Chelar	Douglas T.C.	
Corridor Section:	Leavenworth		Date: 1/7/20)20	
Location:	US 2 at Park and Ride	Da	ate of Cost Index: 2020		
5.1	OTHER ITEMS				
5.1	SURVEYING (6%)	LS	\$30,600	1	\$30,600
	SPECIAL ITEMS	EST	\$209,000	1	\$209,000
	UTILITY RELOCATIONS	EST	\$10,000	1	\$10,000
	BAVARIAN THEMED ARCHITECTURE AND DESIGN	EST	\$380,000	1	\$380,000
6	MISCELLANEOUS (10%)	LS	\$240,100	1	\$240,100
7	CONSTRUCTION SUBTOTAL (ITEMS 1 THRU 6)				\$2,640,900
8	MOBILIZATION (10%)				
	10% OF ITEM 7	EST	\$264,100	1	\$264,100
9	SUBTOTAL (ITEMS 7 & 8)				\$2,905,000
10	CONSTRUCTION				
	ENGINEERING (12% OF ITEM 9)	EST	\$349,000	1	\$349,000
	ENVIRONMENTAL COMPLIANCE (2% OF ITEM 9)	EST	\$59,000	1	\$59,000
11	CONSTRUCTION TOTAL (ITEMS 12 & 13)				\$3,313,000
III.	PRELIMINARY WORK				
	PRELIMINARY ENGINEERING (15% OF ITEM 11)	EST	\$497,000	1	\$497,000
	ENVIRONMENTAL PERMITS	EST	\$40,000	1	\$40,000
IV.	TOTAL ESTIMATED COST				
	(ITEMS I, 14 & III)				\$4,080,000

The above opinion of cost is a planning level estimate only. It is based on best available information and scope at the time, not on the results of a detailed engineering study, and is supplied as a budgeting guide only. Perteet Inc. does not guarantee or warrant the accuracy of this planning level estimate.

US 2 Undercrossing 2

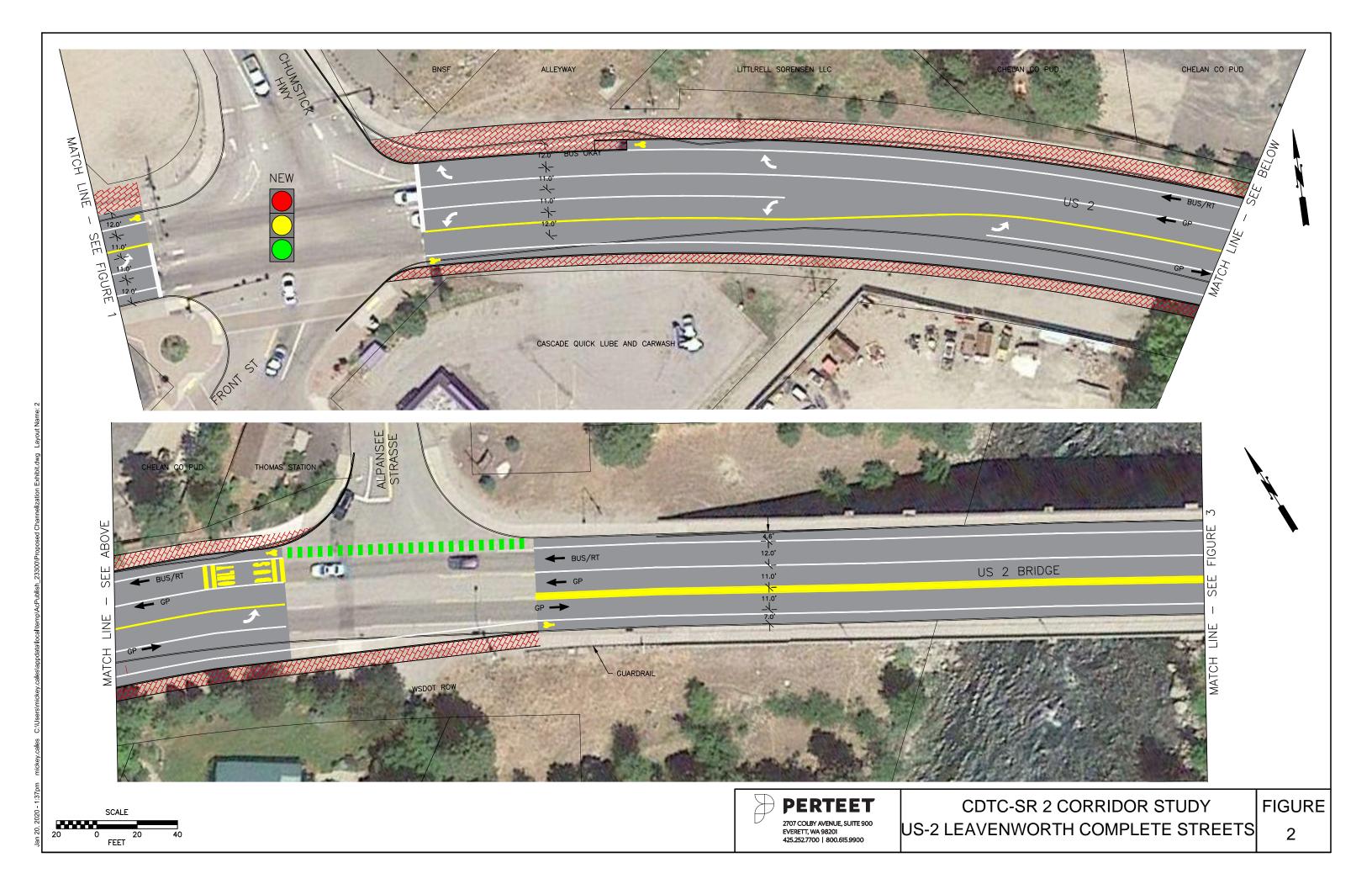


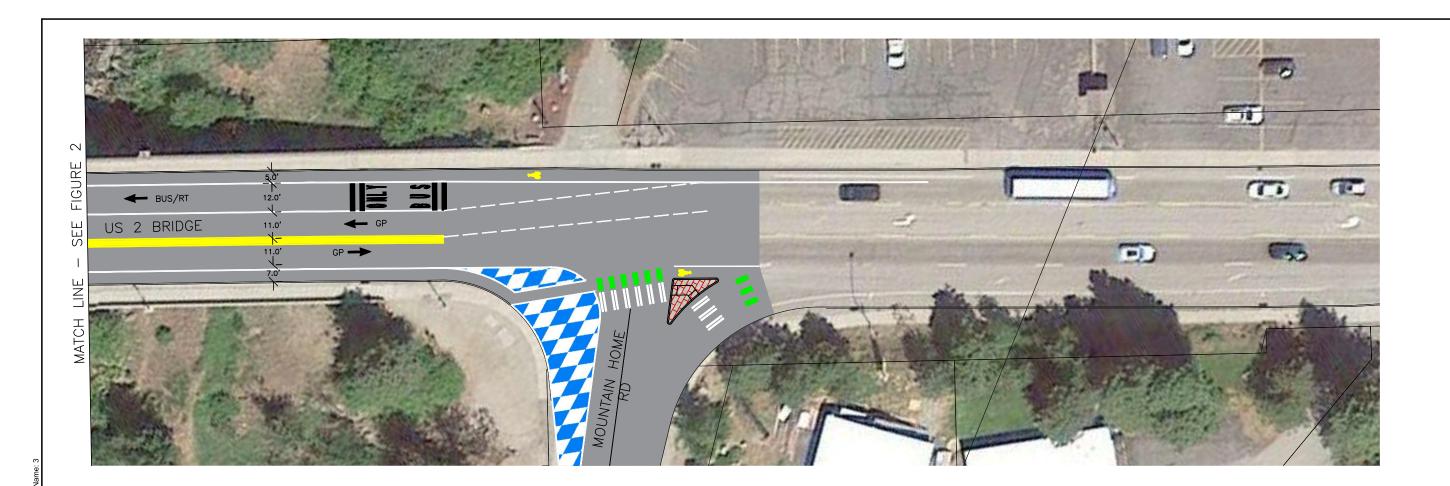


20 FEET PERTEET
2707 COLBY AVENUE, SUITE 900
EVERETT, WA 98201
425.252.7700 | 800.615.9900

CDTC-SR 2 CORRIDOR STUDY
US-2 LEAVENWORTH COMPLETE STREETS

FIGURE S 1

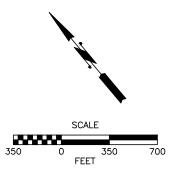


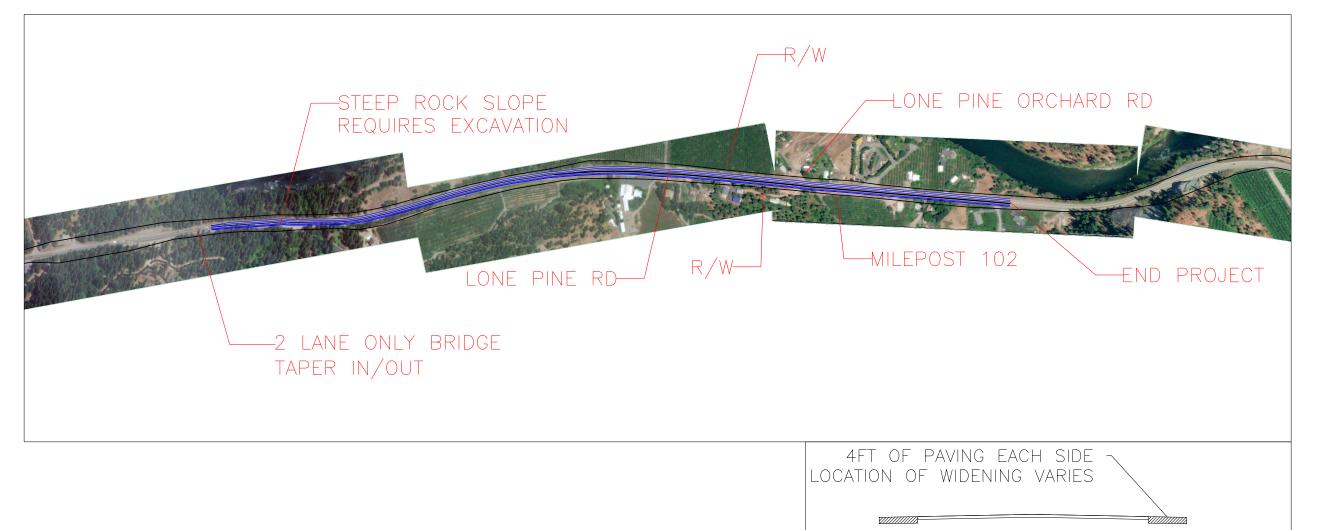




SCALE
20 0 20 40
FEET







PERTEET

2707 COLBY AVENUE, SUITE 900
EVERETT, WA 98201
425.252.7700 | 800.615.9900

CDTC-SR 2 CORRIDOR STUDY US-2 TRANSIT SHOULDERS

FIGURE

1



PLANNING LEVEL OPINION OF COST SUMMARY

Project Description:	US 2 Corridor Study	Client: Chelan Douglas Transportation Council
Corridor Section:	Parallel to US 2 @ Wenatchee River	Date: 1/7/2020
Location:	Leavenworth	Date of Cost Index: 2020
		Calculated By/Entered By: JESL
		Checked By: IDS

NEW CONNECTION TO RIVERBEND DRIVE

		NEW CONNECTION TO RIVER	BEIND DRIVE	ESTIMATED UNIT		
		ITEM	UNIT	COST	QTY	COST
l.		RIGHT OF WAY	ONIT	COST	QII	COST
		RIGHT OF WAY (urban developed)	SF	\$45	177,100	\$7,969,500
		RELOCATIONS: RESIDENCES	EA	\$110,000	2	\$220,000
		CONDEMNATION PROCEDURE	EA	\$100,000	1	\$100,000
		ADMINISTRATION (TITLES, APPRAISALS, ETC.)	EA	\$15,000	8	\$120,000
		RIGHT OF WAY TOTAL	LA	\$15,000	0	\$8,409,500
		Mon of Wal Total				70,403,300
II.		CONSTRUCTION				
1		PREPARATION/GRADING/DRAINAGE				
	1.1	PREPARATION				
		CLEAR & GRUB, DEMO	ACRE	\$5,000	2.7	\$13,500
		REMOVING EXISTING PAVEMENT	SY	\$10	3,900	\$39,000
		REMOVAL STRUCTURES & OBSTRUCTIONS	LS	\$20,000	1	\$20,000
	1.2	EARTHWORK				
		ROADWAY EXCAVATION INCL. HAUL	CY	\$17	25,500	\$433,500
		STRUCTURE EXCAVATION INCL. HAUL	CY	\$25	200	\$5,000
	1.3	STORMWATER MITIGATION				
		DETENTION AND TREATMENT	SF	\$6	66,300	\$397,800
	1.4	STORM SEWER		4		
		CATCH BASIN TYPE 1	EA	\$2,000	27	\$54,000
		CATCH BASIN TYPE 2	EA	\$3,100	7	\$21,700
		PLAIN CONC. STORM SEWER PIPE 18 IN. DIAM.	LF	\$125	2,600	\$325,000
		STRUCTURE EXCAVATION CL. B	CY	\$15	2,000	\$30,000
•		CTRUCTURE				
2		STRUCTURE				4
		BRIDGE SPAN OVER WENATCHEE RIVER (STEEL)	SF	\$330	26,400	\$8,712,000
		CAST IN PLACE RETAINING WALLS	SF	\$65	3,600	\$234,000
_						
3		SURFACING	TON	ć110	2 000	¢200.000
		HOT MIX ASPHALT	TON	\$110	2,800	\$308,000
		CRUSHED SURFACING	TON	\$32	5,300	\$169,600
4		ROADSIDE DEVELOPMENT				
7		SEEDING, MULCHING & FERTILIZING	ACRE	\$5,000	1.4	\$7,000
		TEMP. WATER POLLUTION & EROSION CONTROL (6%)	LS	\$687,300	1.4	\$687,300
		LANDSCAPING	LS	\$82,000	1	\$82,000
		E WESS WING	23	702,000	-	702,000
5		TRAFFIC				
_		ILLUMINATION	LS	\$189,000	1	\$189,000
		SIGNING	LS	\$20,000	1	\$20,000
		CEMENT CONC. TRAFFIC CURB AND GUTTER	LF	\$30	6,900	\$207,000
		CEMENT CONC. SIDEWALK	SY	\$60	3,100	\$186,000
		TRAFFIC CONTROL (10%)	LS	\$1,145,500	1	\$1,145,500
	5.1	OTHER ITEMS				
		SURVEYING (6%)	LS	\$302,600	1	\$302,600



PLANNING LEVEL OPINION OF COST SUMMARY

Project Description:	US 2 Corridor Study		Client: Chelai	n Douglas Trans	sportation Council						
Corridor Section:	Parallel to US 2 @ Wenatchee River		Date: 1/7/20	020							
Location:	Leavenworth	D	Date of Cost Index: 2020								
6	MISCELLANEOUS (10%)	LS	\$1,359,000	1	\$1,359,000						
7	CONSTRUCTION SUBTOTAL (ITEMS 1 THRU 6)				\$14,948,500						
8	MOBILIZATION (10%) 10% OF ITEM 7	EST	\$1,494,900	1	\$1,494,900						
9	SUBTOTAL (ITEMS 9 THRU 11)				\$16,443,400						
10	CONSTRUCTION										
	ENGINEERING (12% OF ITEM 12)	EST	\$1,974,000	1	\$1,974,000						
	ENVIRONMENTAL COMPLIANCE (2% OF ITEM 12)	EST	\$329,000	1	\$329,000						
11	CONSTRUCTION TOTAL (ITEMS 12 & 13)				\$18,746,400						
III.	PRELIMINARY WORK										
	PRELIMINARY ENGINEERING (15.0% OF ITEM 14)	EST	\$2,812,000	1	\$2,812,000						
	ENVIRONMENTAL PERMITS	EST	\$140,000	1	\$140,000						
IV.	TOTAL ESTIMATED COST										
	(ITEMS I, 14 & III)				\$30,110,000						

The above opinion of cost is a planning level estimate only. It is based on best available information and scope at the time, not on the results of a detailed engineering study, and is supplied as a budgeting guide only. Perteet Inc. does not guarantee or warrant the accuracy of this planning level estimate.

SimTraffic Post-Processor Average Results from 10 Runs Network Performance

US 2 New Bridge Connection Weekend Peak Hour

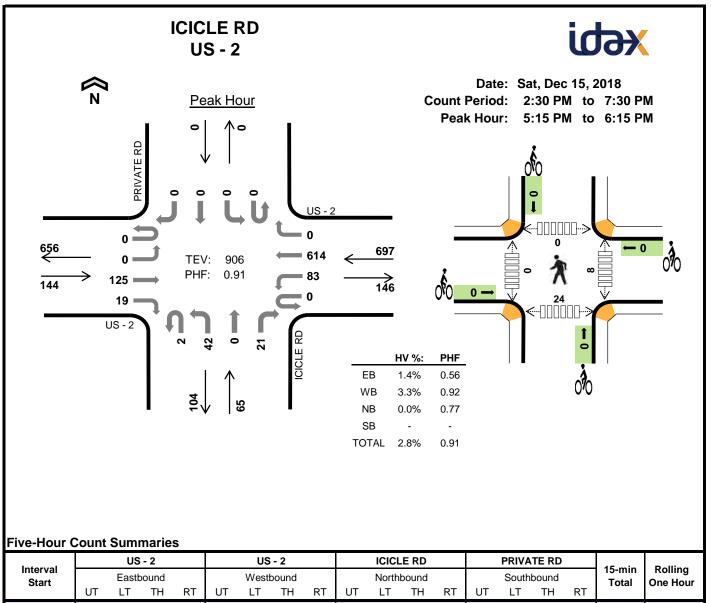
Performance Measure	Average	Std. Dev.	Minimum	Maximum
Average Delay (seconds)	73.8	7.1	59.3	82.2
Total Delay (hours)	66	7	51	73
Average Stopped Delay (seconds)	51.9	5.7	40.8	59.0
Total Stopped Delay (hours)	46	6	35	52
Total Stops	6,422	342	5,685	6,967
Average Stops	2.00	0.07	1.85	2.11
Total Distance Traveled (miles)	3,039	73	2,869	3,110
Average Speed (mph)	16.5	0.7	16.0	18.0
Total Travel Time (hours)	184.1	9.7	162.3	192.9
Vehicles Entered	3,026	66	2,881	3,120
Vehicles Exited	3,029	55	2,903	3,090
Percent Demand Served	100.1%	0.8%	99.0%	101.1%
Fuel Used (gallons)	100	3	92	103
HC Emissions (grams)	1,187	114	1,022	1,386
CO Emissions (grams)	30,803	1,882	28,003	34,085
NOx Emissions (grams)	3,708	281	3,307	4,210

Fehr & Peers 4/1/2020

Appendices

G. Data Collection

February 2020 Appendix



Interval		US	6 - 2			US	6 - 2			ICICL	E RD			PRIVA	ATE RD		4E main	Dalling
Interval Start		Eastl	bound			West	bound			North	bound			South	bound		15-min Total	Rolling One Hour
Otart	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	One nou
5:15 PM	0	0	57	7	0	22	122	0	0	7	0	7	0	0	0	0	222	0
5:30 PM	0	0	46	3	0	13	165	0	0	17	0	4	0	0	0	0	248	0
5:45 PM	0	0	15	5	0	24	162	0	0	11	0	5	0	0	0	0	222	0
6:00 PM	0	0	7	4	0	24	165	0	2	7	0	5	0	0	0	0	214	906
Peak Hour	0	0	125	19	0	83	614	0	2	42	0	21	0	0	0	0	906	0

Note: For all three-hour count summary, see next page.

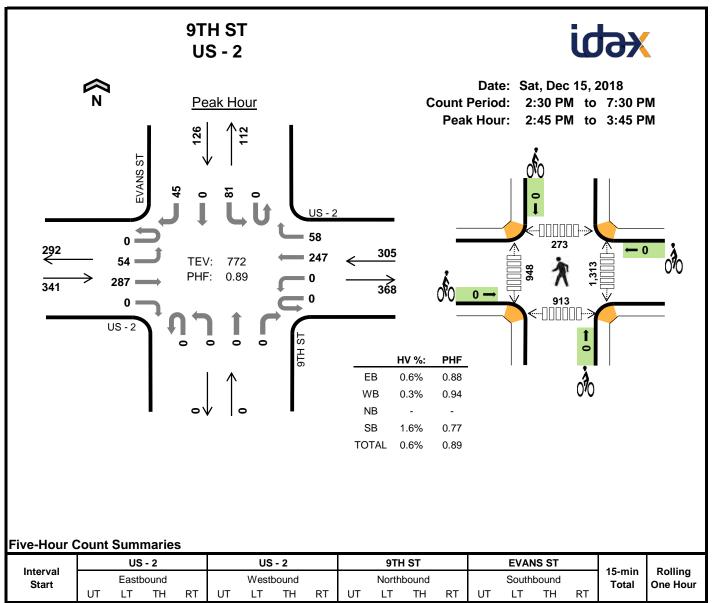
Interval		Heavy	Vehicle	Totals				Bicycles			Pedestrians (Crossing Leg)				
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	11	13
5:30 PM	2	2	0	0	4	0	0	0	0	0	2	0	0	8	10
5:45 PM	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	8	0	0	8	0	0	0	0	0	4	0	0	5	9
Peak Hour	2	23	0	0	25	0	0	0	0	0	8	0	0	24	32

		US	S - 2			US	S - 2			ICICL	E RD			PRIVA	TE RD		15 !	D - III
Interval Start		East	bound			West	bound			North	bound			South	bound		15-min Total	Rolling One Hour
Start	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	lotai	One nou
2:30 PM	0	0	113	8	0	26	36	0	1	8	0	20	0	0	0	0	212	0
2:45 PM	0	0	126	13	0	17	46	0	0	7	0	21	0	0	0	0	230	0
3:00 PM	0	0	102	13	0	17	38	0	0	4	0	26	0	0	0	0	200	0
3:15 PM	0	0	126	11	0	16	42	0	0	3	0	19	0	0	0	0	217	859
3:30 PM	0	0	102	9	0	16	50	0	0	9	0	15	0	0	0	0	201	848
3:45 PM	0	0	86	4	0	16	32	0	0	11	0	11	0	0	0	0	160	778
4:00 PM	0	0	101	7	0	13	39	0	0	5	0	17	0	0	0	0	182	760
4:15 PM	0	0	77	8	0	8	33	0	0	8	0	23	0	0	0	0	157	700
4:30 PM	0	0	77	5	0	12	32	0	0	5	0	17	0	0	0	0	148	647
4:45 PM	0	0	68	6	0	14	27	0	0	3	0	11	0	0	0	0	129	616
5:00 PM	0	0	73	6	0	10	31	0	0	6	0	9	0	0	0	0	135	569
5:15 PM	0	0	57	7	0	22	122	0	0	7	0	7	0	0	0	0	222	634
5:30 PM	0	0	46	3	0	13	165	0	0	17	0	4	0	0	0	0	248	734
5:45 PM	0	0	15	5	0	24	162	0	0	11	0	5	0	0	0	0	222	827
6:00 PM	0	0	7	4	0	24	165	0	2	7	0	5	0	0	0	0	214	906
6:15 PM	0	0	11	6	0	14	159	0	0	13	0	12	0	0	0	0	215	899
6:30 PM	0	0	8	6	0	21	105	0	2	5	0	7	0	0	0	0	154	805
6:45 PM	0	0	22	6	0	21	107	0	0	15	0	16	0	0	0	0	187	770
7:00 PM	0	0	8	6	0	13	117	0	1	5	0	8	0	0	0	0	158	714
7:15 PM	0	0	9	15	0	18	117	0	1	6	0	4	0	0	0	0	170	669
Count Total	0	0	1,234	148	0	335	1,625	0	7	155	0	257	0	0	0	0	3,761	0
Peak Hour	0	0	125	19	0	83	614	0	2	42	0	21	0	0	0	0	906	0

Note: Five-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Mark Skaggs: (425) 250-0777

Interval		Heavy	Vehicle	Totals				Bicycles				Pedestria	ns (Cross	ing Leg)	
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:30 PM	1	1	2	0	4	0	0	0	0	0	0	0	0	1	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
3:00 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	2	3
3:15 PM	1	1	1	0	3	0	0	0	0	0	2	0	0	4	6
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3
4:00 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	9	10
4:15 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	3	3
4:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	2	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	11	13
5:30 PM	2	2	0	0	4	0	0	0	0	0	2	0	0	8	10
5:45 PM	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	8	0	0	8	0	0	0	0	0	4	0	0	5	9
6:15 PM	0	4	0	0	4	0	0	0	0	0	0	0	0	3	3
6:30 PM	0	4	0	0	4	0	0	0	0	0	2	0	0	14	16
6:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	1	8	9
7:00 PM	1	2	0	0	3	0	0	0	0	0	4	0	0	5	9
7:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	6	6
Count Total	6	40	7	0	53	0	2	0	0	2	21	0	1	84	106
Peak Hour	2	23	0	0	25	0	0	0	0	0	8	0	0	24	32



				_														
lutamal.		US	i - 2			US	6 - 2			9TH	l ST			EVAI	NS ST		45!	Dallia a
Interval Start		Eastl	oound			West	bound			North	bound			South	bound		15-min Total	Rolling One Hour
Start	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	One riou
2:45 PM	0	6	70	0	0	0	64	17	0	0	0	0	0	13	0	8	178	0
3:00 PM	0	16	73	0	0	0	58	12	0	0	0	0	0	19	0	6	184	0
3:15 PM	0	15	64	0	0	0	56	17	0	0	0	0	0	23	0	18	193	0
3:30 PM	0	17	80	0	0	0	69	12	0	0	0	0	0	26	0	13	217	772
Peak Hour	0	54	287	0	0	0	247	58	0	0	0	0	0	81	0	45	772	0

Note: For all three-hour count summary, see next page.

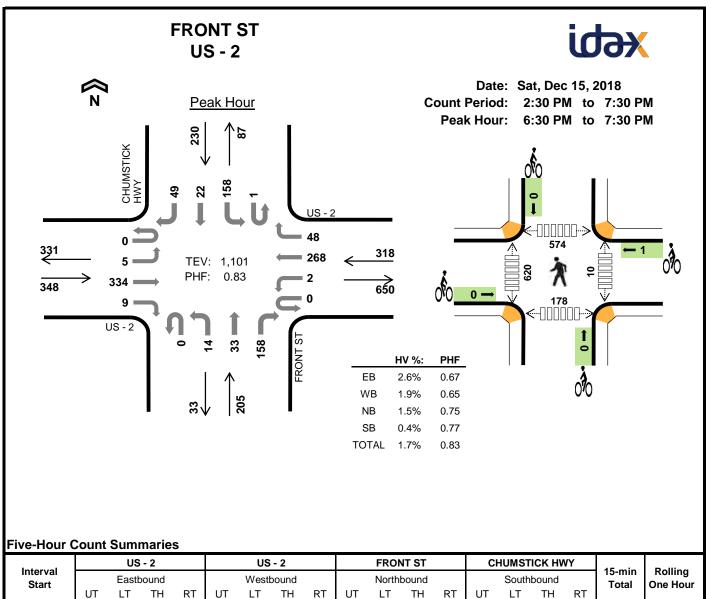
Interval		Heavy	Vehicle	Totals				Bicycles				Pedestria	ıns (Cross	ing Leg)	
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:45 PM	1	0	0	0	1	0	0	0	0	0	279	244	49	227	799
3:00 PM	0	0	0	0	0	0	0	0	0	0	320	175	68	195	<i>7</i> 58
3:15 PM	0	1	0	1	2	0	0	0	0	0	397	315	98	264	1,074
3:30 PM	1	0	0	1	2	0	0	0	0	0	317	214	58	227	816
Peak Hour	2	1	0	2	5	0	0	0	0	0	1,313	948	273	913	3,447

		US	- 2			US	S - 2			9TH	I ST			EVAN	IS ST			
Interval Start		Easth	oound			West	tbound			North	bound			South	bound		15-min Total	Rolling One Hour
Start	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	One Hour
2:30 PM	0	10	71	0	0	0	59	14	0	0	0	0	0	23	0	9	186	0
2:45 PM	0	6	70	0	0	0	64	17	0	0	0	0	0	13	0	8	178	0
3:00 PM	0	16	73	0	0	0	58	12	0	0	0	0	0	19	0	6	184	0
3:15 PM	0	15	64	0	0	0	56	17	0	0	0	0	0	23	0	18	193	741
3:30 PM	0	17	80	0	0	0	69	12	0	0	0	0	0	26	0	13	217	772
3:45 PM	0	6	63	0	0	0	36	17	0	0	0	0	0	12	0	10	144	738
4:00 PM	0	6	74	0	0	0	66	23	0	0	0	0	0	21	0	10	200	754
4:15 PM	0	7	64	0	0	0	41	16	0	0	0	0	0	25	0	15	168	729
4:30 PM	0	7	67	0	0	0	68	16	0	0	0	0	0	13	0	19	190	702
4:45 PM	0	11	76	0	0	0	63	9	0	0	0	0	0	15	0	12	186	744
5:00 PM	0	1	30	0	0	0	31	4	0	0	0	0	0	14	0	10	90	634
5:15 PM	0	0	37	0	0	0	59	10	0	0	0	0	0	19	0	20	145	611
5:30 PM	0	0	1	0	0	0	80	5	0	0	0	0	0	3	0	2	91	512
5:45 PM	0	1	0	0	0	0	69	2	0	0	0	0	0	6	0	5	83	409
6:00 PM	0	1	15	0	0	0	96	12	0	0	0	0	0	15	0	10	149	468
6:15 PM	0	2	25	0	0	0	58	5	0	0	1	0	0	24	0	8	123	446
6:30 PM	0	0	24	0	0	0	75	6	0	0	0	0	0	15	0	3	123	478
6:45 PM	0	1	22	0	0	0	87	6	0	0	0	0	0	8	0	0	124	519
7:00 PM	0	1	15	0	0	0	67	3	0	0	0	0	0	24	0	12	122	492
7:15 PM	0	2	51	0	0	0	72	9	0	0	1	1	0	24	0	8	168	537
Count Total	0	110	922	0	0	0	1,274	215	0	0	2	1	0	342	0	198	3,064	0
Peak Hour	0	54	287	0	0	0	247	58	0	0	0	0	0	81	0	45	772	0

Note: Five-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Mark Skaggs: (425) 250-0777

Interval		Heavy	Vehicle	Totals				Bicycles				Pedestria	ns (Cross	ing Leg)	
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:30 PM	1	1	0	0	2	0	0	0	0	0	288	225	73	208	794
2:45 PM	1	0	0	0	1	0	0	0	0	0	279	244	49	227	799
3:00 PM	0	0	0	0	0	0	0	0	0	0	320	175	68	195	758
3:15 PM	0	1	0	1	2	0	0	0	0	0	397	315	98	264	1,074
3:30 PM	1	0	0	1	2	0	0	0	0	0	317	214	58	227	816
3:45 PM	0	0	0	1	1	0	1	1	0	2	361	318	86	269	1,034
4:00 PM	0	0	0	0	0	2	0	0	0	2	339	270	49	332	990
4:15 PM	0	1	0	0	1	0	4	0	0	4	305	273	75	467	1,120
4:30 PM	1	0	0	2	3	0	0	0	0	0	252	238	77	466	1,033
4:45 PM	0	0	0	1	1	0	0	0	0	0	202	167	75	341	785
5:00 PM	0	0	0	0	0	2	0	0	0	2	523	997	415	1,210	3,145
5:15 PM	0	1	0	0	1	0	0	0	0	0	391	432	144	699	1,666
5:30 PM	0	1	0	0	1	0	0	0	0	0	298	358	132	467	1,255
5:45 PM	0	1	0	1	2	0	1	0	0	1	307	221	75	361	964
6:00 PM	0	6	0	1	7	1	0	0	0	1	225	156	51	371	803
6:15 PM	0	1	0	0	1	0	1	0	0	1	309	146	80	312	847
6:30 PM	0	3	0	0	3	0	1	0	0	1	319	262	101	277	959
6:45 PM	1	2	0	0	3	0	0	0	0	0	245	168	36	298	747
7:00 PM	0	0	0	0	0	0	0	0	0	0	334	158	68	229	789
7:15 PM	1	1	0	0	2	0	0	0	0	0	262	161	78	175	676
Count Total	6	19	0	8	33	5	8	1	0	14	6,273	5,498	1,888	7,395	21,054
Peak Hour	2	1	0	2	5	0	0	0	0	0	1,313	948	273	913	3,447



Five-Hour C	Jount	Sum	marie	S														
l-tl		US	- 2			US	- 2			FROI	NT ST		С	HUMST	ICK HV	VY	45!	D - III
Interval Start		Eastl	oound			West	bound			North	bound			South	bound		15-min Total	Rolling One Hour
Otart	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	One near
6:30 PM	0	0	92	1	0	0	68	14	0	4	2	33	0	38	8	8	268	0
6:45 PM	0	0	48	4	0	0	43	5	0	3	12	47	0	52	5	18	237	0
7:00 PM	0	1	69	3	0	0	56	9	0	5	14	49	1	43	5	11	266	0
7:15 PM	0	4	125	1	0	2	101	20	0	2	5	29	0	25	4	12	330	1,101
Peak Hour	0	5	334	9	0	2	268	48	0	14	33	158	1	158	22	49	1.101	0

Note: For all three-hour count summary, see next page.

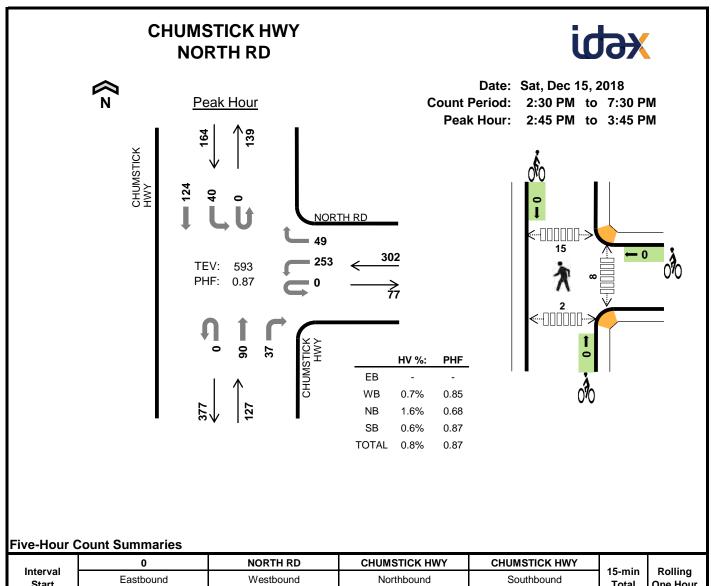
Interval		Heavy	Vehicle	Totals				Bicycles	;			Pedestria	ans (Cross	ing Leg)	
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
6:30 PM	4	2	2	0	8	0	1	0	0	1	0	168	127	64	359
6:45 PM	0	3	0	1	4	0	0	0	0	0	0	130	134	68	332
7:00 PM	1	0	1	0	2	0	0	0	0	0	8	177	112	32	329
7:15 PM	4	1	0	0	5	0	0	0	0	0	2	145	201	14	362
Peak Hour	9	6	3	1	19	0	1	0	0	1	10	620	574	178	1,382

late and		US	S - 2			US	S - 2			FRO	NT ST		CI	HUMST	ICK HV	٧Y	45	Dallia a
Interval Start		East	bound			West	tbound			North	bound			South	bound		15-min Total	Rolling One Hour
Otart	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	One nou
2:30 PM	0	0	59	3	0	0	56	20	0	4	8	27	0	25	22	7	231	0
2:45 PM	0	0	55	5	0	0	54	13	0	2	12	24	0	37	9	11	222	0
3:00 PM	0	0	64	5	0	0	63	10	0	1	9	21	0	24	11	6	214	0
3:15 PM	0	0	73	7	0	0	83	14	0	6	10	21	0	18	13	9	254	921
3:30 PM	0	0	54	9	0	0	57	14	0	3	8	8	0	31	7	13	204	894
3:45 PM	0	0	76	7	0	0	79	26	0	2	7	30	0	16	0	18	261	933
4:00 PM	0	0	24	2	0	0	25	10	0	3	15	27	0	34	14	12	166	885
4:15 PM	0	0	72	4	0	0	62	15	0	0	3	19	0	20	12	12	219	850
4:30 PM	0	1	63	1	0	0	52	11	0	2	10	21	0	28	3	26	218	864
4:45 PM	0	0	50	12	0	0	73	11	0	1	9	18	0	29	40	6	249	852
5:00 PM	0	0	60	2	0	0	62	20	0	4	9	27	0	17	17	10	228	914
5:15 PM	0	0	28	0	0	0	18	7	0	3	2	24	0	48	8	15	153	848
5:30 PM	0	1	44	0	0	1	34	12	0	17	11	73	0	38	7	9	247	877
5:45 PM	0	0	89	0	0	0	52	18	0	5	2	57	0	16	2	13	254	882
6:00 PM	0	0	54	0	0	0	39	8	0	5	12	94	0	26	5	8	251	905
6:15 PM	0	0	75	0	0	0	52	17	0	6	4	39	0	23	4	16	236	988
6:30 PM	0	0	92	1	0	0	68	14	0	4	2	33	0	38	8	8	268	1,009
6:45 PM	0	0	48	4	0	0	43	5	0	3	12	47	0	52	5	18	237	992
7:00 PM	0	1	69	3	0	0	56	9	0	5	14	49	1	43	5	11	266	1,007
7:15 PM	0	4	125	1	0	2	101	20	0	2	5	29	0	25	4	12	330	1,101
Count Total	0	7	1,274	66	0	3	1,129	274	0	78	164	688	1	588	196	240	4,708	0
Peak Hour	0	5	334	9	0	2	268	48	0	14	33	158	1	158	22	49	1,101	0

Note: Five-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Mark Skaggs: (425) 250-0777

Interval		Heavy	Vehicle	Totals				Bicycles				Pedestria	ans (Cross	ing Leg)	
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:30 PM	1	0	0	1	2	0	0	0	0	0	0	192	123	40	355
2:45 PM	0	1	0	0	1	0	0	0	0	0	0	115	86	26	227
3:00 PM	0	1	0	1	2	0	0	0	0	0	0	139	89	43	271
3:15 PM	1	0	1	0	2	0	0	0	0	0	0	149	95	35	279
3:30 PM	0	1	0	0	1	0	0	0	0	0	1	159	137	78	375
3:45 PM	2	0	0	0	2	0	0	0	0	0	1	171	124	28	324
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	178	158	21	357
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	230	199	39	468
4:30 PM	1	0	1	0	2	0	0	0	0	0	0	195	165	21	381
4:45 PM	2	1	0	0	3	0	1	0	0	1	0	72	99	29	200
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	110	198	49	357
5:15 PM	0	2	0	0	2	2	2	0	0	4	0	280	306	138	724
5:30 PM	0	0	0	1	1	0	0	0	0	0	1	223	178	66	468
5:45 PM	4	0	4	0	8	0	0	0	0	0	1	283	203	52	539
6:00 PM	5	0	13	0	18	1	0	0	0	1	0	226	152	49	427
6:15 PM	9	0	3	0	12	0	0	0	0	0	0	250	243	44	537
6:30 PM	4	2	2	0	8	0	1	0	0	1	0	168	127	64	359
6:45 PM	0	3	0	1	4	0	0	0	0	0	0	130	134	68	332
7:00 PM	1	0	1	0	2	0	0	0	0	0	8	177	112	32	329
7:15 PM	4	1	0	0	5	0	0	0	0	0	2	145	201	14	362
Count Total	34	16	25	4	79	3	4	0	0	7	14	3,592	3,129	936	7,671
Peak Hour	9	6	3	1	19	0	1	0	0	1	10	620	574	178	1,382



Interval		()			NORT	H RD		CI	HUMST	TCK HV	VY	C	HUMST	TICK HV	VΥ	4E min	Dalling
Interval Start		Easth	ound			West	oound			North	bound			South	bound		15-min Total	Rolling One Hour
Otart	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	One near
2:45 PM	0	0	0	0	0	63	0	13	0	0	34	13	0	10	37	0	170	0
3:00 PM	0	0	0	0	0	49	0	8	0	0	16	6	0	10	28	0	117	0
3:15 PM	0	0	0	0	0	78	0	11	0	0	19	11	0	8	28	0	155	0
3:30 PM	0	0	0	0	0	63	0	17	0	0	21	7	0	12	31	0	151	593
Peak Hour	0	0	0	0	0	253	0	49	0	0	90	37	0	40	124	0	593	0

Note: For all three-hour count summary, see next page.

Interval		Heavy	Vehicle	Totals				Bicycles				Pedestria	ans (Cross	ing Leg)	
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:45 PM	0	2	2	1	5	0	0	0	0	0	7	27	15	0	49
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	2	6
Peak Hour	0	2	2	1	5	0	0	0	0	0	8	35	15	2	60

		()			NORT	H RD		CI	HUMST	TCK HV	VY	C	HUMST	ICK HV	٧Y	45	D
Interval Start		Easth	ound			Westb	ound			North	bound			South	bound		15-min Total	Rolling One Hour
Otart	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	Total	
2:30 PM	0	0	0	0	0	66	0	9	0	0	19	8	0	3	26	0	131	0
2:45 PM	0	0	0	0	0	63	0	13	0	0	34	13	0	10	37	0	170	0
3:00 PM	0	0	0	0	0	49	0	8	0	0	16	6	0	10	28	0	117	0
3:15 PM	0	0	0	0	0	78	0	11	0	0	19	11	0	8	28	0	155	573
3:30 PM	0	0	0	0	0	63	0	17	0	0	21	7	0	12	31	0	151	593
3:45 PM	0	0	0	0	0	48	0	11	0	0	24	9	0	5	33	0	130	553
4:00 PM	0	0	0	0	0	68	0	16	0	0	15	9	0	10	33	0	151	587
4:15 PM	0	0	0	0	0	48	0	12	0	0	20	9	0	6	22	0	117	549
4:30 PM	0	0	0	0	0	38	0	6	0	0	17	19	0	7	38	0	125	523
4:45 PM	0	0	0	0	0	82	0	5	0	0	16	18	0	8	15	0	144	537
5:00 PM	0	0	0	0	1	101	0	17	0	0	16	7	0	5	15	0	162	548
5:15 PM	0	0	0	0	0	45	0	10	0	0	26	38	0	9	8	0	136	567
5:30 PM	0	0	0	0	0	32	0	11	0	0	33	21	0	7	10	0	114	556
5:45 PM	0	0	0	0	0	51	0	20	0	0	20	15	1	5	10	0	122	534
6:00 PM	0	0	0	0	0	46	0	26	0	0	21	12	1	9	4	0	119	491
6:15 PM	0	0	0	0	0	54	0	24	0	0	21	20	0	2	2	0	123	478
6:30 PM	0	0	0	0	0	55	0	21	0	0	18	16	0	4	8	0	122	486
6:45 PM	0	0	0	0	0	60	0	11	0	0	23	26	0	1	12	0	133	497
7:00 PM	0	0	0	0	0	58	0	15	0	0	24	21	0	2	10	0	130	508
7:15 PM	0	0	0	0	1	21	0	8	0	0	37	20	0	8	8	0	103	488
Count Total	0	0	0	0	2	1,126	0	271	0	0	440	305	2	131	378	0	2,655	0
Peak Hour	0	0	0	0	0	253	0	49	0	0	90	37	0	40	124	0	593	0

Note: Five-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval		Heavy	Vehicle	Totals				Bicycles			Pedestrians (Crossing Leg)							
Start	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total			
2:30 PM	0	0	0	0	0	0	0	0	0	0	2	14	5	1	22			
2:45 PM	0	2	2	1	5	0	0	0	0	0	7	27	15	0	49			
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4			
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1			
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	2	6			
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	13	2	0	15			
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	8	3	1	12			
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	1	0	0	6			
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	3	3	0	10			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	7	0	7			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	8	2	0	10			
5:45 PM	0	1	0	0	1	0	0	0	0	0	5	7	8	0	20			
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:15 PM	0	1	0	0	1	0	0	0	0	0	5	3	2	0	10			
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0			
7:00 PM	0	0	0	0	0	0	0	0	0	0	6	7	0	5	18			
7:15 PM	0	0	0	1	1	0	0	0	0	0	0	2	0	4	6			
Count Total	0	6	2	2	10	0	0	0	0	0	35	102	47	14	198			
Peak Hr	0	2	2	1	5	0	0	0	0	0	8	35	15	2	60			



Chelan-Douglas Transportation Council 11 Spokane St #301 Wenatchee, Washington, United States 98801 509.663.9059 riley@chelan-douglas.org

Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 1

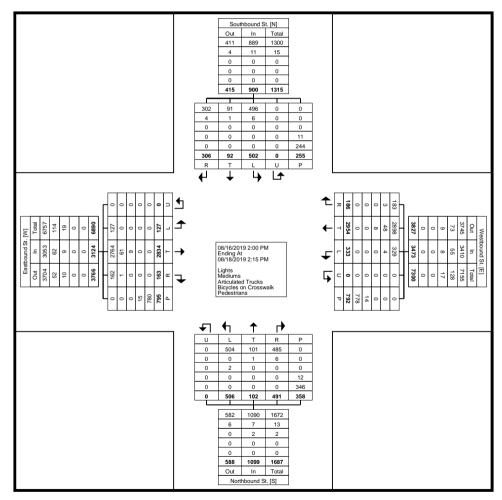
Turning Movement Data

			Southb	ound St.			Westbound St.								ound St.	Eastbound St.												
	Southbound							Westbound							Northbound							Eastbound						
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total			
2:00 PM	6	0	15	0	15	21	11	121	15	0	11	147	17	2	29	0	10	48	9	127	2	0	37	138	354			
2:15 PM	11	2	29	0	6	42	4	118	6	0	21	128	16	1	13	0	6	30	5	133	3	0	31	141	341			
2:30 PM	9	2	16	0	7	27	9	135	14	0	21	158	17	5	26	0	9	48	7	135	1	0	21	143	376			
2:45 PM	8	6	26	0	9	40	9	113	14	0	22	136	34	2	12	0	18	48	7	119	5	0	37	131	355			
Hourly Total	34	10	86	0	37	130	33	487	49	0	75	569	84	10	80	0	43	174	28	514	11	0	126	553	1426			
3:00 PM	11	7	22	0	10	40	8	130	11	0	25	149	24	5	22	0	25	51	5	135	3	0	26	143	383			
3:15 PM	12	4	22	0	10	38	5	134	11	0	21	150	12	4	15	0	12	31	2	117	3	0	29	122	341			
3:30 PM	17	3	21	0	9	41	11	129	19	0	31	159	23	7	24	0	10	54	6	124	2	0	18	132	386			
3:45 PM	12	4	26	0	15	42	6	119	14	0	33	139	23	4	24	0	24	51	4	110	3	0	35	117	349			
Hourly Total	52	18	91	0	44	161	30	512	55	0	110	597	82	20	85	0	71	187	17	486	11	0	108	514	1459			
4:00 PM	9	5	22	0	9	36	7	118	10	0	19	135	25	5	15	0	20	45	5	123	3	0	36	131	347			
4:15 PM	15	7	14	0	7	36	8	126	9	0	20	143	18	3	19	0	6	40	6	107	3	0	20	116	335			
4:30 PM	16	8	18	0	9	42	16	111	15	0	31	142	18	4	25	0	3	47	0	102	4	0	27	106	337			
4:45 PM	17	3	15	0	16	35	9	125	15	0	29	149	20	3	10	0	14	33	3	133	5	0	41	141	358			
Hourly Total	57	23	69	0	41	149	40	480	49	0	99	569	81	15	69	0	43	165	14	465	15	0	124	494	1377			
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	_	-	-	-	-	-			
11:00 AM	12	4	23	0	3	39	9	129	11	0	13	149	21	1	18	0	8	40	8	125	12	0	14	145	373			
11:15 AM	6	5	31	0	3	42	4	133	16	0	36	153	17	4	14	0	21	35	9	115	6	0	18	130	360			
11:30 AM	16	1	10	0	3	27	10	133	25	0	27	168	12	11	17	0	19	40	6	112	9	0	15	127	362			
11:45 AM	11	6	22	0	6	39	7	141	15	0	30	163	23	2	21	0	9	46	7	126	5	0	16	138	386			
Hourly Total	45	16	86	0	15	147	30	536	67	0	106	633	73	18	70	0	57	161	30	478	32	0	63	540	1481			
12:00 PM	15	0	28	0	4	43	7	121	17	0	29	145	24	2	24	. 0	3	50	9	102	7	0	21	118	356			
12:15 PM	22	1	25	0	12	48	7	126	22	0	49	155	21	1	18	. 0	11	40	6	117	1	0	49	124	367			
12:30 PM	11	2	29	0	17	42	8	120	10	0	36	138	12	5	26	0	25	43	8	123	9	0	59	140	363			
12:45 PM	11	4	19	0	15	34	8	108	11	0	43	127	29	4	25	. 0	10	58	4	115	6	0	50	125	344			
Hourly Total	59	7	101	0	48	167	30	475	60	0	157	565	86	12	93	0	49	191	27	457	23	0	179	507	1430			
1:00 PM	15	6	25	0	15	46	6	106	6	0	69	118	14	9	33	0	25	56	11	111	8	0	58	130	350			
1:15 PM	14	2	17	0	19	33	4	108	17	0	73	129	20	10	22	. 0	23	52	14	102	10	0	44	126	340			
1:30 PM	15	5	18	0	21	38	5	132	11	0	49	148	25	5	28	. 0	20	58	11	117	13	0	53	141	385			
1:45 PM	15	5	9	0	15	29	8	118	19	0	54	145	24	3	26	0	27	53	11	104	4	0	40	119	346			
Hourly Total	59	18	69	0	70	146	23	464	53	0	245	540	83	27	109	0	95	219	47	434	35	0	195	516	1421			
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	. 0	0	2	0	0	0	0	0	0	2			
Grand Total	306	92	502	0	255	900	186	2954	333	0	792	3473	491	102	506	0	358	1099	163	2834	127	0	795	3124	8596			
Approach %	34.0	10.2	55.8	0.0	-	-	5.4	85.1	9.6	0.0	-	-	44.7	9.3	46.0	0.0	-	-	5.2	90.7	4.1	0.0	-		-			
Total %	3.6	1.1	5.8	0.0	_	10.5	2.2	34.4	3.9	0.0	-	40.4	5.7	1.2	5.9	0.0	-	12.8	1.9	33.0	1.5	0.0	-	36.3	-			

Lights	302	91	496	0		889	183	2898	329	0		3410	485	101	504	0	-	1090	162	2764	127	0		3053	8442
% Lights	98.7	98.9	98.8	-	-	98.8	98.4	98.1	98.8	-	-	98.2	98.8	99.0	99.6	-	-	99.2	99.4	97.5	100.0	-	-	97.7	98.2
Mediums	4	1	6	0	-	11	3	48	4	0	-	55	6	1	0	0	-	7	1	61	0	0	-	62	135
% Mediums	1.3	1.1	1.2	-	-	1.2	1.6	1.6	1.2	-	-	1.6	1.2	1.0	0.0	-	-	0.6	0.6	2.2	0.0	-	-	2.0	1.6
Articulated Trucks	0	0	0	0	-	0	0	8	0	0	-	8	0	0	2	0	-	2	0	9	0	0	-	9	19
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.4	-	-	0.2	0.0	0.3	0.0	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	-	11	-	-	-	-	-	14	-	-	-	-	-	12	-	-	-	-	-	15	-	-
% Bicycles on Crosswalk	-	-	-	-	4.3	-	-	-	-	-	1.8	-	-	-	-	-	3.4	-	-	-	-	-	1.9	-	-
Pedestrians	-	-	-	-	244	-	-	-	-	-	778	-	-	-	-	-	346	-	-	-	-	-	780	-	-
% Pedestrians	-	-	-	-	95.7	-	-	-	-	-	98.2	-	-	-	-	-	96.6	-	-	-	-	-	98.1	-	-



Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 3



Turning Movement Data Plot



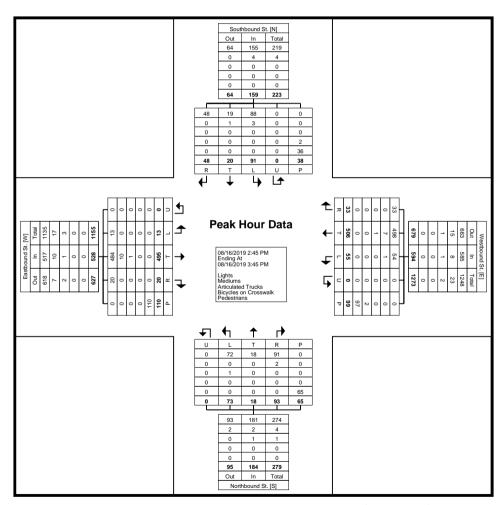
Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 4

Turning Movement Peak Hour Data (2:45 PM)

							1
			Eastb	ound St.			
			Eas	stbound			
ls App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
48	7	119	5	0	37	131	355
51	5	135	3	0	26	143	383
31	2	117	3	0	29	122	341
54	6	124	2	0	18	132	386
184	20	495	13	0	110	528	1465
-	3.8	93.8	2.5	0.0	-	-	-
12.6	1.4	33.8	0.9	0.0	-	36.0	-
0.852	0.714	0.917	0.650	0.000	-	0.923	0.949
181	20	484	13	0	-	517	1438
98.4	100.0	97.8	100.0	-	-	97.9	98.2
2	0	10	0	0	-	10	24
1.1	0.0	2.0	0.0	-	-	1.9	1.6
1	0	1	0	0	-	1	3
0.5	0.0	0.2	0.0	-	-	0.2	0.2
-	-	-	-	-	0	-	-
) -	-	-	-	-	0.0	-	-
-	-	-	-	-	110	_	-
.0 -	_	-	-	-	100.0	-	-
	48 51 31 54 184 - 12.6 0.852 181 98.4 2 1.1 1 0.5	48 7 51 5 31 2 54 6 184 20 - 3.8 12.6 1.4 0.852 0.714 181 20 98.4 100.0 2 0 1.1 0.0 1 0 0.5 0.0	48 7 119 51 5 135 31 2 117 54 6 124 184 20 495 - 3.8 93.8 12.6 1.4 33.8 0.852 0.714 0.917 181 20 484 98.4 100.0 97.8 2 0 10 1.1 0.0 2.0 1 0 1 0.5 0.0 0.2 - - - - - - - - -	S App. Total Right Thru Left 48 7 119 5 51 5 135 3 31 2 117 3 54 6 124 2 184 20 495 13 - 3.8 93.8 2.5 12.6 1.4 33.8 0.9 0.852 0.714 0.917 0.650 181 20 484 13 98.4 100.0 97.8 100.0 2 0 10 0 1.1 0.0 2.0 0.0 1 0 1 0 0.5 0.0 0.2 0.0	S App. Total Right Thru Left U-Turn 48 7 119 5 0 51 5 135 3 0 31 2 117 3 0 54 6 124 2 0 184 20 495 13 0 - 3.8 93.8 2.5 0.0 12.6 1.4 33.8 0.9 0.0 0.852 0.714 0.917 0.650 0.000 181 20 484 13 0 98.4 100.0 97.8 100.0 - 2 0 10 0 0 1.1 0.0 2.0 0.0 - 1 0 1 0 0 0.5 0.0 0.2 0.0 - - - - - - - - - - </th <th>S App. Total Right Thru Left U-Turn Peds 48 7 119 5 0 37 51 5 135 3 0 26 31 2 117 3 0 29 54 6 124 2 0 18 184 20 495 13 0 110 - 3.8 93.8 2.5 0.0 - 12.6 1.4 33.8 0.9 0.0 - 12.6 1.4 33.8 0.9 0.0 - 18.1 20 484 13 0 - 0.852 0.714 0.917 0.650 0.000 - 181 20 484 13 0 - 2 0 10 0 0 - 1.1 0.0 2.0 0.0 - - 1.1</th> <th>S App. Total Right Thru Left U-Turn Peds App. Total 48 7 119 5 0 37 131 51 5 135 3 0 26 143 31 2 117 3 0 29 122 54 6 124 2 0 18 132 184 20 495 13 0 110 528 - 3.8 93.8 2.5 0.0 - - - 12.6 1.4 33.8 0.9 0.0 - 36.0 0.852 0.714 0.917 0.650 0.000 - 0.923 181 20 484 13 0 - 517 98.4 100.0 97.8 100.0 - - 97.9 2 0 10 0 0 - 10 1.1</th>	S App. Total Right Thru Left U-Turn Peds 48 7 119 5 0 37 51 5 135 3 0 26 31 2 117 3 0 29 54 6 124 2 0 18 184 20 495 13 0 110 - 3.8 93.8 2.5 0.0 - 12.6 1.4 33.8 0.9 0.0 - 12.6 1.4 33.8 0.9 0.0 - 18.1 20 484 13 0 - 0.852 0.714 0.917 0.650 0.000 - 181 20 484 13 0 - 2 0 10 0 0 - 1.1 0.0 2.0 0.0 - - 1.1	S App. Total Right Thru Left U-Turn Peds App. Total 48 7 119 5 0 37 131 51 5 135 3 0 26 143 31 2 117 3 0 29 122 54 6 124 2 0 18 132 184 20 495 13 0 110 528 - 3.8 93.8 2.5 0.0 - - - 12.6 1.4 33.8 0.9 0.0 - 36.0 0.852 0.714 0.917 0.650 0.000 - 0.923 181 20 484 13 0 - 517 98.4 100.0 97.8 100.0 - - 97.9 2 0 10 0 0 - 10 1.1



Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 5



Turning Movement Peak Hour Data Plot (2:45 PM)



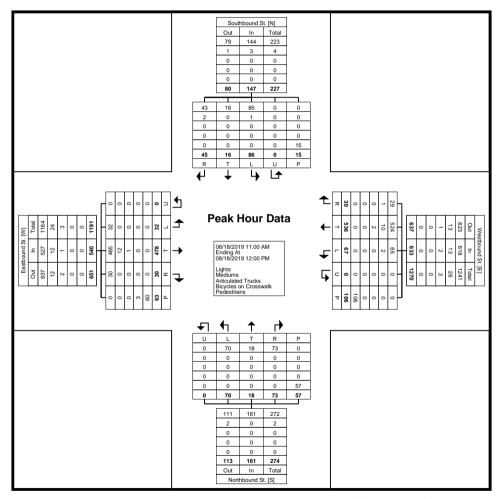
Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

								ı alıı	9	OVCIII	Oiit i	oun i	ioai E	outu (11.00	,,,									1
			Southb	ound St.					Westb	ound St.					Northbo	ound St.					Eastbo	und St.			
			South	nbound					West	bound					North	bound			İ		East	oound			
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
11:00 AM	12	4	23	0	3	39	9	129	11	0	13	149	21	1	18	0	8	40	8	125	12	0	14	145	373
11:15 AM	6	5	31	0	3	42	4	133	16	0	36	153	17	4	14	0	21	35	9	115	6	0	18	130	360
11:30 AM	16	1	10	0	3	27	10	133	25	0	27	168	12	11	17	0	19	40	6	112	9	0	15	127	362
11:45 AM	11	6	22	0	6	39	7	141	15	0	30	163	23	2	21	0	9	46	7	126	5	0	16	138	386
Total	45	16	86	0	15	147	30	536	67	0	106	633	73	18	70	0	57	161	30	478	32	0	63	540	1481
Approach %	30.6	10.9	58.5	0.0		-	4.7	84.7	10.6	0.0	_		45.3	11.2	43.5	0.0	_	_	5.6	88.5	5.9	0.0	-		-
Total %	3.0	1.1	5.8	0.0		9.9	2.0	36.2	4.5	0.0	-	42.7	4.9	1.2	4.7	0.0	_	10.9	2.0	32.3	2.2	0.0	-	36.5	<u> </u>
PHF	0.703	0.667	0.694	0.000		0.875	0.750	0.950	0.670	0.000		0.942	0.793	0.409	0.833	0.000		0.875	0.833	0.948	0.667	0.000		0.931	0.959
Lights	43	16	85	0.000		144	29	524	65	0.000		618	73	18	70	0.000		161	30	465	32	0.000		527	1450
% Lights	95.6	100.0	98.8	-		98.0	96.7	97.8	97.0	-		97.6	100.0	100.0	100.0	-		100.0	100.0	97.3	100.0			97.6	97.9
		-	90.0				90.7					-			-	-		. 100.0							
Mediums	2	0	. 1	0		3	1	10	2	0	-	13	0	0	0	0			0	12	0	0	-	12	28
% Mediums	4.4	0.0	1.2	-	-	2.0	3.3	1.9	3.0		-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	2.5	0.0		-	2.2	1.9
Articulated Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	1	0	0	-	1	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	4.8	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	-	106	-	-	-	-	-	57	-	-	-	-	-	60	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	95.2	-	-
	-						_				_												_		



Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)



Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 8

Turning Movement Peak Hour Data (12:00 PM)

| | | |

 | | i |
 | ı allı | 1119 111 | OVCIII | Citti | can | ioui L | Jaia (| 12.00 | , i ivi <i>j</i>
 | | | | |
 | | | | |
|-------|---|---
--
--
---|--|---
--|--|---|--|---|--|--|--
---|---|---|---|---
--|--|---|---|---------------|--|
| | | Southb | ound St.

 | | |
 | | Westbo | ound St. | | | | | Northb | ound St.
 | | | | | Eastbo
 | und St. | | | |
| | | South | nbound

 | | |
 | | West | bound | | | | | North | bound
 | | | | | Easth
 | oound | | | |
| Right | Thru | Left | U-Turn

 | Peds | App.
Total | Right
 | Thru | Left | U-Turn | Peds | App.
Total | Right | Thru | Left | U-Turn
 | Peds | App.
Total | Right | Thru | Left
 | U-Turn | Peds | App.
Total | Int. Total |
| 15 | 0 | 28 | 0

 | 4 | 43 | 7
 | 121 | 17 | 0 | 29 | 145 | 24 | 2 | 24 | 0
 | 3 | 50 | 9 | 102 | 7
 | 0 | 21 | 118 | 356 |
| 22 | 1 | 25 | 0

 | 12 | 48 | 7
 | 126 | 22 | 0 | 49 | 155 | 21 | 1 | 18 | 0
 | 11 | 40 | 6 | 117 | 1
 | 0 | 49 | 124 | 367 |
| 11 | 2 | 29 | 0

 | 17 | 42 | 8
 | 120 | 10 | 0 | 36 | 138 | 12 | 5 | 26 | 0
 | 25 | 43 | 8 | 123 | 9
 | 0 | 59 | 140 | 363 |
| 11 | 4 | 19 | 0

 | 15 | 34 | 8
 | 108 | 11 | 0 | 43 | 127 | 29 | 4 | 25 | 0
 | 10 | 58 | 4 | 115 | 6
 | 0 | 50 | 125 | 344 |
| 59 | 7 | 101 | 0

 | 48 | 167 | 30
 | 475 | 60 | 0 | 157 | 565 | 86 | 12 | 93 | 0
 | 49 | 191 | 27 | 457 | 23
 | 0 | 179 | 507 | 1430 |
| 35.3 | 4.2 | 60.5 | 0.0

 | - | - | 5.3
 | 84.1 | 10.6 | 0.0 | - | - | 45.0 | 6.3 | 48.7 | 0.0
 | - | - | 5.3 | 90.1 | 4.5
 | 0.0 | - | - | - |
| 4.1 | 0.5 | 7.1 | 0.0

 | - | 11.7 | 2.1
 | 33.2 | 4.2 | 0.0 | - | 39.5 | 6.0 | 0.8 | 6.5 | 0.0
 | - | 13.4 | 1.9 | 32.0 | 1.6
 | 0.0 | - | 35.5 | - |
| 0.670 | 0.438 | 0.871 | 0.000

 | - | 0.870 | 0.938
 | 0.942 | 0.682 | 0.000 | - | 0.911 | 0.741 | 0.600 | 0.894 | 0.000
 | - | 0.823 | 0.750 | 0.929 | 0.639
 | 0.000 | - | 0.905 | 0.974 |
| 58 | 7 | 100 | 0

 | - | 165 | 29
 | 469 | 60 | 0 | - | 558 | 86 | 12 | 93 | 0
 | - | 191 | 27 | 442 | 23
 | 0 | - | 492 | 1406 |
| 98.3 | 100.0 | 99.0 | -

 | - | 98.8 | 96.7
 | 98.7 | 100.0 | - | - | 98.8 | 100.0 | 100.0 | 100.0 | -
 | - | 100.0 | 100.0 | 96.7 | 100.0
 | - | - | 97.0 | 98.3 |
| 1 | 0 | 1 | 0

 | - | 2 | 1
 | 6 | 0 | 0 | - | 7 | 0 | 0 | 0 | 0
 | - | 0 | 0 | 14 | 0
 | 0 | - | 14 | 23 |
| 1.7 | 0.0 | 1.0 | _

 | - | 1.2 | 3.3
 | 1.3 | 0.0 | _ | - | 1.2 | 0.0 | 0.0 | 0.0 | _
 | _ | 0.0 | 0.0 | 3.1 | 0.0
 | | _ | 2.8 | 1.6 |
| 0 | 0 | 0 | 0

 | - | 0 | 0
 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0
 | _ | 0 | 0 | 1 | 0
 | 0 | - | 1 | 1 |
| 0.0 | 0.0 | 0.0 | -

 | - | 0.0 | 0.0
 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.0 | 0.0 | -
 | - | 0.0 | 0.0 | 0.2 | 0.0
 | - | - | 0.2 | 0.1 |
| - | - | - | -

 | 2 | - | -
 | - | - | - | 1 | - | - | - | - | -
 | 0 | - | - | - | -
 | - | 0 | - | - |
| - | - | - | -

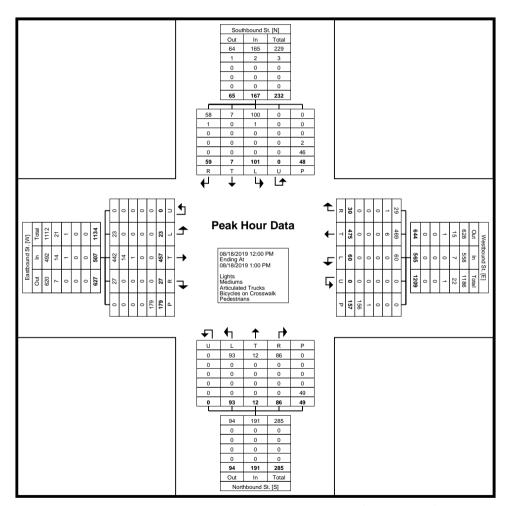
 | 4.2 | - | -
 | - | - | - | 0.6 | - | - | - | - | _
 | 0.0 | - | - | - | -
 | - | 0.0 | - | |
| - | - | - | _

 | 46 | - | -
 | - | - | _ | 156 | - | - | - | - | -
 | 49 | _ | - | - | -
 | | 179 | - | - |
| - | - | - | •

 | 95.8 | _ | | | | | | | | | | | | | | | | | | | | | | | |
 | • | • | | | | | | |
 | | | | |
 | | | | _ |
| | 15
22
11
11
59
35.3
4.1
0.670
58
98.3
1
1.7
0 | 15 0 22 1 11 2 11 4 59 7 35.3 4.2 4.1 0.5 0.670 0.438 58 7 98.3 100.0 1 0 0.0 0 0.0 0.0 | Right Thru Left 15 0 28 22 1 25 11 2 29 11 4 19 59 7 101 35.3 4.2 60.5 4.1 0.5 7.1 0.670 0.438 0.871 58 7 100 98.3 100.0 99.0 1 0 1 1.7 0.0 1.0 0 0 0 0.0 0.0 0.0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - </td <td>15 0 28 0 22 1 25 0 11 2 29 0 11 4 19 0 59 7 101 0 35.3 4.2 60.5 0.0 4.1 0.5 7.1 0.00 0.670 0.438 0.871 0.000 58 7 100 0 98.3 100.0 99.0 - 1 0 1 0 1.7 0.0 1.0 - 0 0 0 0 0.0 0.0 0.0</td> <td>Right Thru Left U-Turn Peds 15 0 28 0 4 22 1 25 0 12 11 2 29 0 17 11 4 19 0 15 59 7 101 0 48 35.3 4.2 60.5 0.0 - 4.1 0.5 7.1 0.0 - 6.670 0.438 0.871 0.000 - 58 7 100 0 - 98.3 100.0 99.0 - - 1 0 1 0 - 1.7 0.0 1.0 - - 0 0 0 0 - 0.0 0 0 - - 0.0 0.0 - - - 0.0 0.0 - - -</td> <td>Right Thru Left U-Turn Peds App. Total 15 0 28 0 4 43 22 1 25 0 12 48 11 2 29 0 17 42 11 4 19 0 15 34 59 7 101 0 48 167 35.3 4.2 60.5 0.0 - - 4.1 0.5 7.1 0.0 - 11.7 0.670 0.438 0.871 0.000 - 0.870 58 7 100 0 - 165 98.3 100.0 99.0 - - 98.8 1 0 1 0 - 2 1.7 0.0 1.0 - 1.2 0 0 0 - 0 0.0 0 0 - 0</td> <td>South-bund Right Thru Left U-Turn Peds App. Total Total Total Total Right 15 0 28 0 4 43 7 22 1 25 0 12 48 7 11 2 29 0 17 42 8 11 4 19 0 15 34 8 59 7 101 0 48 167 30 35.3 4.2 60.5 0.0 - - 5.3 4.1 0.5 7.1 0.0 - 11.7 2.1 0.670 0.438 0.871 0.00 - 165 29 98.3 100.0 99.0 - - 98.8 96.7 1 0 1 0 - 2 1 1.7 0.0 1.0 - - 1.2 3.3</td> <td>Southbound St. Southbound Right Thru Left U-Turn Peds App. Total App. Total Right Thru 15 0 28 0 4 43 7 121 22 1 25 0 12 48 7 126 11 2 29 0 17 42 8 120 11 4 19 0 15 34 8 108 59 7 101 0 48 167 30 475 35.3 4.2 60.5 0.0 - - 5.3 84.1 4.1 0.5 7.1 0.0 - 11.7 2.1 33.2 0.670 0.438 0.871 0.000 - 0.870 0.938 0.942 58 7 100 0 - 165 29 469 98.3 100.0 99.0 - -</td> <td>Southbound St. Southbound Westbound Right Thru Left U-Turn Peds App. Total Total Total Total Right Thru Left 15 0 28 0 4 43 7 121 17 22 1 25 0 12 48 7 126 22 11 2 29 0 17 42 8 120 10 11 4 19 0 15 34 8 108 11 59 7 101 0 48 167 30 475 60 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 4.1 0.5 7.1 0.0 - 11.7 2.1 33.2 4.2 0.670 0.438 0.871 0.000 - 165 29 469 60 98.3 100.0 99.0<</td> <td>Southbound St. Southbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Total Total Total App. Total Right Thru Left U-Turn 15 0 28 0 4 43 7 121 17 0 22 1 25 0 12 48 7 126 22 0 11 2 29 0 17 42 8 120 10 0 11 4 19 0 15 34 8 108 11 0 59 7 101 0 48 167 30 475 60 0 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 0.0 4.1 0.5 7.1 0.0 - 11.7 2.1 33.2 4.2 0.0 0.670 0.438 0.871 0.000</td> <td>Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Total Right Thru Left U-Turn Peds 15 0 28 0 4 43 7 121 17 0 29 22 1 25 0 12 48 7 126 22 0 49 11 2 29 0 17 42 8 120 10 0 36 11 4 19 0 15 34 8 108 11 0 43 59 7 101 0 48 167 30 475 60 0 157 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 0.0 - 4.1 0.5 7.1 0.0 - 11.7 2.1</td> <td>Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total 15 0 28 0 4 43 7 121 17 0 29 145 22 1 25 0 12 48 7 126 22 0 49 155 11 2 29 0 17 42 8 120 10 0 36 138 11 4 19 0 15 34 8 108 11 0 43 127 59 7 101 0 48 167 30 475 60 0 157 565 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 0.0 - -</td> <td>Right Thru Left U-Turn Peds App. Total Total Right Thru Left U-Turn Peds App. Total Total Total Total Thru Left U-Turn Peds App. Total T</td> <td>Right Thru Left U-Turn Peds App. Total Right Thru 15 0 28 0 4 43 7 121 17 0 29 145 24 2 22 1 25 0 12 48 7 126 22 0 49 155 21 1 11 2 29 0 17 42 8 120 10 0 36 138 12 5 11 4 19 0 15 34 8 108 11 0 43 127 29 4 59 7 101 0 48 167 30 475 60 0 157</td> <td>Right Thru Left U-Turn Peds App. Total Total Total Total Total Right Thru Left U-Turn Peds App. Total /td> <td>Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total
10 Deck 2 2 2 2 4 0 0 1 2 1 1 2 2 4 2 2 1 4</td> <td> Right Thru Left U-Turn Peds App. Total Thru U-Turn Peds App. Total U-Turn Peds App. Total U-Turn Peds App. Total U-Turn Peds U-Turn Peds U-Turn Peds App. Total U-Turn Peds U-Turn Peds App. Total U-Turn Peds U-Tu</td> <td> Right Thru Left U-Turn Peds App. Total Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left Right Thru Left U-Turn Peds App. Total Thru Thru Left U-Turn Peds App. Total Thru Thru U-Turn Peds App. Total Thru Total Thru U-Turn Peds Total Thru Total Thru Total Thru U-Turn Total Thru Total Thru U-Turn Total Thru Total Thru Total Thru Total Th</td> <td> Right Thru Left U-Turn Peds App. Right Thru U-Turn Peds App. Peds Thru U-Turn Peds App. Right Thru U-Turn Peds App. Peds Thru U-Turn Peds App. Right Thru U-Turn Peds App. Right Thru U-Turn Peds App. Peds Thru U-Turn Peds App. Right U-Turn Peds App. Peds U-Turn Peds App. Right U-Turn Peds App. Right U-Turn Peds App. U-Turn U-Turn Peds App. U-Tur</td> <td> Right Righ</td> <td> Right Thru Left U-Turn Peds App Right Thru Left U-Turn Peds App Total </td> <td> No colspan="12"> No colspan="12" No colspa</td> <td> North</td> <td> Right Thru Left Left Left Thru Left /td> | 15 0 28 0 22 1 25 0 11 2 29 0 11 4 19 0 59 7 101 0 35.3 4.2 60.5 0.0 4.1 0.5 7.1 0.00 0.670 0.438 0.871 0.000 58 7 100 0 98.3 100.0 99.0 - 1 0 1 0 1.7 0.0 1.0 - 0 0 0 0 0.0 0.0 0.0 | Right Thru Left U-Turn Peds 15 0 28 0 4 22 1 25 0 12 11 2 29 0 17 11 4 19 0 15 59 7 101 0 48 35.3 4.2 60.5 0.0 - 4.1 0.5 7.1 0.0 - 6.670 0.438 0.871 0.000 - 58 7 100 0 - 98.3 100.0 99.0 - - 1 0 1 0 - 1.7 0.0 1.0 - - 0 0 0 0 - 0.0 0 0 - - 0.0 0.0 - - - 0.0 0.0 - - - | Right Thru Left U-Turn Peds App. Total 15 0 28 0 4 43 22 1 25 0 12 48 11 2 29 0 17 42 11 4 19 0 15 34 59 7 101 0 48 167 35.3 4.2 60.5 0.0 - - 4.1 0.5 7.1 0.0 - 11.7 0.670 0.438 0.871 0.000 - 0.870 58 7 100 0 - 165 98.3 100.0 99.0 - - 98.8 1 0 1 0 - 2 1.7 0.0 1.0 - 1.2 0 0 0 - 0 0.0 0 0 - 0 | South-bund Right Thru Left U-Turn Peds App. Total Total Total Total Right 15 0 28 0 4 43 7 22 1 25 0 12 48 7 11 2 29 0 17 42 8 11 4 19 0 15 34 8 59 7 101 0 48 167 30 35.3 4.2 60.5 0.0 - - 5.3 4.1 0.5 7.1 0.0 - 11.7 2.1 0.670 0.438 0.871 0.00 - 165 29 98.3 100.0 99.0 - - 98.8 96.7 1 0 1 0 - 2 1 1.7 0.0 1.0 - - 1.2 3.3 | Southbound St. Southbound Right Thru Left U-Turn Peds App. Total App. Total Right Thru 15 0 28 0 4 43 7 121 22 1 25 0 12 48 7 126 11 2 29 0 17 42 8 120 11 4 19 0 15 34 8 108 59 7 101 0 48 167 30 475 35.3 4.2 60.5 0.0 - - 5.3 84.1 4.1 0.5 7.1 0.0 - 11.7 2.1 33.2 0.670 0.438 0.871 0.000 - 0.870 0.938 0.942 58 7 100 0 - 165 29 469 98.3 100.0 99.0 - - | Southbound St. Southbound Westbound Right Thru Left U-Turn Peds App. Total Total Total Total Right Thru Left 15 0 28 0 4 43 7 121 17 22 1 25 0 12 48 7 126 22 11 2 29 0 17 42 8 120 10 11 4 19 0 15 34 8 108 11 59 7 101 0 48 167 30 475 60 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 4.1 0.5 7.1 0.0 - 11.7 2.1 33.2 4.2 0.670 0.438 0.871 0.000 - 165 29 469 60 98.3 100.0 99.0< | Southbound St. Southbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Total Total Total App. Total Right Thru Left U-Turn 15 0 28 0 4 43 7 121 17 0 22 1 25 0 12 48 7 126 22 0 11 2 29 0 17 42 8 120 10 0 11 4 19 0 15 34 8 108 11 0 59 7 101 0 48 167 30 475 60 0 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 0.0 4.1 0.5 7.1 0.0 - 11.7 2.1 33.2 4.2 0.0 0.670 0.438 0.871 0.000 | Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Total Right Thru Left U-Turn Peds 15 0 28 0 4 43 7 121 17 0 29 22 1 25 0 12 48 7 126 22 0 49 11 2 29 0 17 42 8 120 10 0 36 11 4 19 0 15 34 8 108 11 0 43 59 7 101 0 48 167 30 475 60 0 157 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 0.0 - 4.1 0.5 7.1 0.0 - 11.7 2.1 | Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total 15 0 28 0 4 43 7 121 17 0 29 145 22 1 25 0 12 48 7 126 22 0 49 155 11 2 29 0 17 42 8 120 10 0 36 138 11 4 19 0 15 34 8 108 11 0 43 127 59 7 101 0 48 167 30 475 60 0 157 565 35.3 4.2 60.5 0.0 - - 5.3 84.1 10.6 0.0 - - | Right Thru Left U-Turn Peds App. Total Total Right Thru Left U-Turn Peds App. Total Total Total Total Thru Left U-Turn Peds App. Total T | Right Thru Left U-Turn Peds App. Total Right Thru 15 0 28 0 4 43 7 121 17 0 29 145 24 2 22 1 25 0 12 48 7 126 22 0 49 155 21 1 11 2 29 0 17 42 8 120 10 0 36 138 12 5 11 4 19 0 15 34 8 108 11 0 43 127 29 4 59 7 101 0 48 167 30 475 60 0 157 | Right Thru Left U-Turn Peds App. Total Total Total Total Total Right Thru Left U-Turn Peds App. Total | Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total
10 Deck 2 2 2 2 4 0 0 1 2 1 1 2 2 4 2 2 1 4 | Right Thru Left U-Turn Peds App. Total Thru U-Turn Peds App. Total U-Turn Peds App. Total U-Turn Peds App. Total U-Turn Peds U-Turn Peds U-Turn Peds App. Total U-Turn Peds U-Turn Peds App. Total U-Turn Peds U-Tu | Right Thru Left U-Turn Peds App. Total Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left Right Thru Left U-Turn Peds App. Total Thru Thru Left U-Turn Peds App. Total Thru Thru U-Turn Peds App. Total Thru Total Thru U-Turn Peds Total Thru Total Thru Total Thru U-Turn Total Thru Total Thru U-Turn Total Thru Total Thru Total Thru Total Th | Right Thru Left U-Turn Peds App. Right Thru U-Turn Peds App. Peds Thru U-Turn Peds App. Right Thru U-Turn Peds App. Peds Thru U-Turn Peds App. Right Thru U-Turn Peds App. Right Thru U-Turn Peds App. Peds Thru U-Turn Peds App. Right U-Turn Peds App. Peds U-Turn Peds App. Right U-Turn Peds App. Right U-Turn Peds App. U-Turn U-Turn Peds App. U-Tur | Right Righ | Right Thru Left U-Turn Peds App Right Thru Left U-Turn Peds App Total | No colspan="12"> No colspan="12" No colspa | North | Right Thru Left Left Left Thru Left Left |



Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 9



Turning Movement Peak Hour Data Plot (12:00 PM)



Count Name: 9th Street Site Code: Start Date: 08/16/2019 Page No: 10



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 1

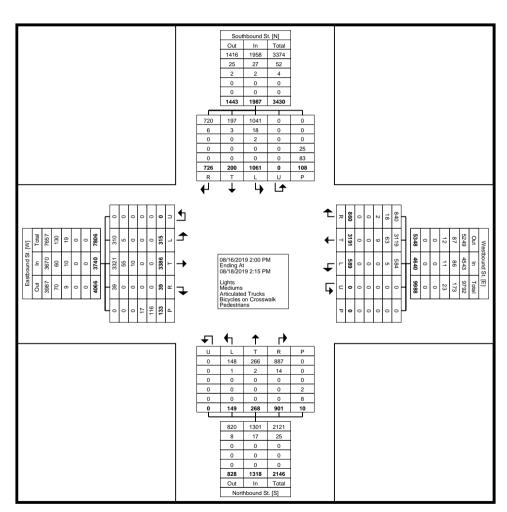
Turning Movement Data

				ound St. nbound						ound St.						ound St. nbound						ound St. bound			
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
2:00 PM	20	4	33	0	2	57	40	135	14	. 0	0	189	41	15	4	0	0	60	2	153	12	0	0	167	473
2:15 PM	23	3	49	0	2	75	41	146	25	0	0	212	37	7	8	0	0	52	1	149	11	0	14	161	500
2:30 PM	19	5	32	0	1	56	40	117	26	0	0	183	31	13	7	0	0	51	3	147	17	0	6	167	457
2:45 PM	31	7	54	0	2	92	32	116	22	0	0	170	38	13	7	0	2	58	2	153	17	0	2	172	492
Hourly Total	93	19	168	0	7	280	153	514	87	0	0	754	147	48	26	0	2	221	8	602	57	0	22	667	1922
3:00 PM	28	7	34	0	4	69	33	145	17	0	0	195	47	17	9	0	0	73	1	159	14	0	6	174	511
3:15 PM	23	6	49	0	1	78	55	144	21	0	0	220	50	15	6	0	4	71	2	153	20	0	2	175	544
3:30 PM	27	8	37	0	6	72	45	151	26	0	0	222	49	9	7	0	0	65	0	135	11	0	4	146	505
3:45 PM	23	6	54	0	3	83	40	133	22	0	0	195	57	14	7	0	0	78	0	146	15	0	3	161	517
Hourly Total	101	27	174	0	14	302	173	573	86	0	0	832	203	55	29	0	4	287	3	593	60	0	15	656	2077
4:00 PM	33	8	48	0	2	89	58	131	17	0	0	206	44	14	6	0	0	64	1	149	12	0	2	162	521
4:15 PM	12	7	46	0	14	65	52	131	35	0	0	218	62	12	6	0	0	80	0	133	15	0	7	148	511
4:30 PM	23	5	45	0	4	73	62	130	25	0	0	217	58	13	3	0	0	74	0	136	14	0	3	150	514
4:45 PM	20	7	39	0	3	66	47	143	26	0	0	216	40	13	5	0	1	58	0	150	10	0	4	160	500
Hourly Total	88	27	178	0	23	293	219	535	103	0	0	857	204	52	20	0	1	276	1	568	51	0	16	620	2046
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	42	5	52	0	2	99	27	148	11	0	0	186	23	4	4	0	1	31	1	107	19	0	3	127	443
11:15 AM	42	7	58	0	2	107	30	155	23	0	0	208	16	8	3	0	1	27	1	152	11	0	5	164	506
11:30 AM	45	12	45	0	8	102	38	131	31	0	0	200	21	10	7	0	0	38	3	131	12	0	13	146	486
11:45 AM	43	13	36	0	4	92	23	158	22	0	0	203	20	11	4	0	0	35	4	144	8	0	1	156	486
Hourly Total	172	37	191	0	16	400	118	592	87	0	0	797	80	33	18	0	2	131	9	534	50	0	22	593	1921
12:00 PM	34	13	53	0	8	100	19	127	28	0	0	174	28	14	5	0	0	47	1	132	11	0	6	144	465
12:15 PM	43	7	51	0	13	101	25	133	15	0	0	173	42	8	4	0	0	54	2	150	11	0	12	163	491
12:30 PM	38	12	55	0	9	105	20	135	36	0	0	191	30	9	6	0	0	45	4	133	10	0	7	147	488
12:45 PM	38	20	40	0	0	98	26	95	36	0	0	157	30	9	9	0	0	48	3	126	6	0	2	135	438
Hourly Total	153	52	199	0	30	404	90	490	115	0	0	695	130	40	24	0	0	194	10	541	38	0	27	589	1882
1:00 PM	31	7	38	0	1	76	21	118	21	0	0	160	28	9	6	0	1	43	2	144	10	0	9	156	435
1:15 PM	33	15	28	0	0	76	33	108	33	0	0	174	36	10	11	0	0	57	1	130	13	0	7	144	451
1:30 PM	30	11	48	0	7	89	22	123	18	0	0	163	26	13	7	0	0	46	4	141	19	0	11	164	462
1:45 PM	25	5	37	0	10	67	31	138	38	0	0	207	46	8	8	0	0	62	1	133	17	0	4	151	487
Hourly Total	119	38	151	0	18	308	107	487	110	0	0	704	136	40	32	0	1	208	8	548	59	0	31	615	1835
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
Grand Total	726	200	1061	0	108	1987	860	3191	589	0	0	4640	901	268	149	0	10	1318	39	3386	315	0	133	3740	11685

Approach %	36.5	10.1	53.4	0.0	-	-	18.5	68.8	12.7	0.0	-	-	68.4	20.3	11.3	0.0	-	-	1.0	90.5	8.4	0.0	-	-	-
Total %	6.2	1.7	9.1	0.0	-	17.0	7.4	27.3	5.0	0.0	-	39.7	7.7	2.3	1.3	0.0	-	11.3	0.3	29.0	2.7	0.0	-	32.0	-
Lights	720	197	1041	0	-	1958	840	3119	584	0	-	4543	887	266	148	0	-	1301	39	3321	310	0	-	3670	11472
% Lights	99.2	98.5	98.1	-	-	98.5	97.7	97.7	99.2	-	-	97.9	98.4	99.3	99.3	-	-	98.7	100.0	98.1	98.4	-	-	98.1	98.2
Mediums	6	3	18	0	-	27	18	63	5	0	-	86	14	2	1	0	-	17	0	55	5	0	-	60	190
% Mediums	0.8	1.5	1.7	-	-	1.4	2.1	2.0	0.8	-	-	1.9	1.6	0.7	0.7	-	-	1.3	0.0	1.6	1.6	-	-	1.6	1.6
Articulated Trucks	0	0	2	0	-	2	2	9	0	0	-	11	0	0	0	0	-	0	0	10	0	0	-	10	23
% Articulated Trucks	0.0	0.0	0.2	-	-	0.1	0.2	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	-	25	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	17	-	-
% Bicycles on Crosswalk	-	-	-	-	23.1	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	-	-	12.8	-	-
Pedestrians	-	-	-	_	83	_	-	-	-	-	0	-	-	_	-	_	8	_	-	-	_	-	116	-	-
% Pedestrians	-	-	-	-	76.9	-	-	-	-	-	-	-	-	-	-	-	80.0	-	-	-	-	-	87.2	-	-



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 3



Turning Movement Data Plot



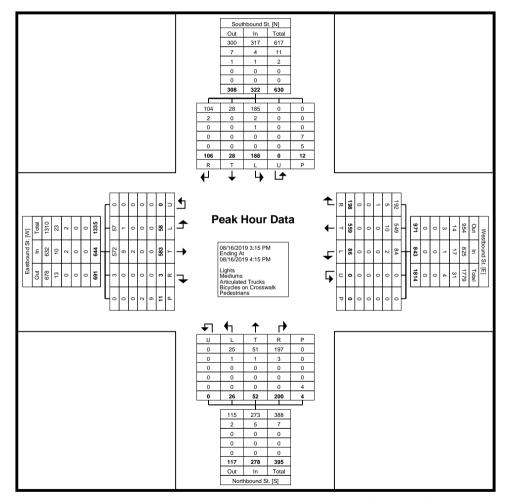
Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 4

Turning Movement Peak Hour Data (3:15 PM)

East	bound St.		I
	2041.4		
Eas	stbound		
Thru Left	U-Turn	Peds App	nt. Total
153 20	0	2 175	5 544
135 11	0	4 146	505
146 15	0	3 16	517
149 12	0	2 162	2 521
583 58	0	11 644	2087
90.5 9.0	0.0		-
27.9 2.8	0.0	- 30.	-
0.953 0.725	0.000	- 0.92	0 0.959
572 57	0	- 632	2 2047
98.1 98.3	-	- 98.	1 98.1
9 1	0	- 10	36
1.5 1.7	-	- 1.6	
2 0	0	- 2	4
0.3 0.0	-	- 0.3	0.2
	-	2 -	-
	-	18.2 -	-
	-	9 -	-
	-	81.8 -	-
	153 20 135 11 146 15 149 12 583 58 90.5 9.0 27.9 2.8 0.953 0.725 572 57 98.1 98.3 9 1 1.5 1.7 2 0 0.3 0.0	153 20 0 135 11 0 146 15 0 149 12 0 583 58 0 90.5 9.0 0.0 27.9 2.8 0.0 0.953 0.725 0.000 572 57 0 98.1 98.3 - 9 1 0 1.5 1.7 - 2 0 0 0.3 0.0	153 20 0 2 175 135 11 0 4 146 146 15 0 3 161 149 12 0 2 162 583 58 0 11 644 90.5 9.0 0.0 - 30.9 27.9 2.8 0.0 - 30.9 572 57 0 - 632 98.1 98.3 - 98.1 9 1 0 - 10 1.5 1.7 - 16 2 0 0 - 2 0.3 0.0 - 0.3 - 2 2 - 18.2 9



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 5



Turning Movement Peak Hour Data Plot (3:15 PM)



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

| | | | |

 | | i
 | iuiii | _ | | CITCI | can

 | ioui L | oua (| | ,
 | | | i | | |
 | | | 1 |
|-------|--|--|--
--
--
--|---|---
--|--|--|--
--
--
--|---|---|---|--|--|--
---|-------------|---|---|------------------------------------|---
--|
| | | Southb | ound St. |

 | |
 | | Westb | ound St. | |

 | | | Northbo | ound St.
 | | | | | Eastbo | und St.
 | | | |
| | | South | bound |

 | |
 | | West | bound | |

 | | | North | bound
 | | | | | Easth | ound
 | | | |
| Right | Thru | Left | U-Turn | Peds

 | App.
Total | Right
 | Thru | Left | U-Turn | Peds | App.
Total

 | Right | Thru | Left | U-Turn
 | Peds | App.
Total | Right | Thru | Left | U-Turn
 | Peds | App.
Total | Int. Total |
| 42 | 5 | 52 | 0 | 2

 | 99 | 27
 | 148 | 11 | 0 | 0 | 186

 | 23 | 4 | 4 | 0
 | 1 | 31 | 1 | 107 | 19 | 0
 | 3 | 127 | 443 |
| 42 | 7 | 58 | 0 | 2

 | 107 | 30
 | 155 | 23 | 0 | 0 | 208

 | 16 | 8 | 3 | 0
 | 1 | 27 | 1 | 152 | 11 | 0
 | 5 | 164 | 506 |
| 45 | 12 | 45 | 0 | 8

 | 102 | 38
 | 131 | 31 | 0 | 0 | 200

 | 21 | 10 | 7 | 0
 | 0 | 38 | 3 | 131 | 12 | 0
 | 13 | 146 | 486 |
| 43 | 13 | 36 | 0 | 4

 | 92 | 23
 | 158 | 22 | 0 | 0 | 203

 | 20 | 11 | 4 | 0
 | 0 | 35 | 4 | 144 | 8 | 0
 | 1 | 156 | 486 |
| 172 | 37 | 191 | 0 | 16

 | 400 | 118
 | 592 | 87 | 0 | 0 | 797

 | 80 | 33 | 18 | 0
 | 2 | 131 | 9 | 534 | 50 | 0
 | 22 | 593 | 1921 |
| 43.0 | 9.3 | 47.8 | 0.0 | -

 | - | 14.8
 | 74.3 | 10.9 | 0.0 | - | -

 | 61.1 | 25.2 | 13.7 | 0.0
 | - | - | 1.5 | 90.1 | 8.4 | 0.0
 | - | - | - |
| 9.0 | 1.9 | 9.9 | 0.0 | -

 | 20.8 | 6.1
 | 30.8 | 4.5 | 0.0 | - | 41.5

 | 4.2 | 1.7 | 0.9 | 0.0
 | - | 6.8 | 0.5 | 27.8 | 2.6 | 0.0
 | - | 30.9 | - |
| 0.956 | 0.712 | 0.823 | 0.000 | -

 | 0.935 | 0.776
 | 0.937 | 0.702 | 0.000 | - | 0.958

 | 0.870 | 0.750 | 0.643 | 0.000
 | - | 0.862 | 0.563 | 0.878 | 0.658 | 0.000
 | - | 0.904 | 0.949 |
| | | | 0 | -

 | |
 | | | 0 | - | 777

 | | | |
 | - | | 9 | | | 0
 | - | | 1886 |
| | | | | _

 | - |
 | | | | _ | 97.5

 | | | | | |
 | - | | 100.0 | | |
 | - | | 98.2 |
| | | | |

 | - | 2
 | | | · · · · · · | | -

 | | | | | |
 | - | | - | | |
 | - | | 34 |
| | - | | |

 | | 17
 | | | | |

 | _ | | | | |
 | | | | | |
 | | | 1.8 |
| | • | | |

 | 0.5 | 0
 | | | - | |

 | | | |
 | | 0 | | 1.5 | | -
 | | 1 1 | 1.0 |
| 0.0 | 0.0 | 0.0 | - | -

 | 0.0 | 0.0
 | 0.0 | 0.0 | - | - | 0.0

 | 0.0 | 0.0 | 0.0 | -
 | - | 0.0 | 0.0 | 0.2 | 0.0 | -
 | - | 0.2 | 0.1 |
| - | - | - | - | 7

 | - | -
 | - | - | - | 0 | -

 | - | - | - | -
 | 1 | - | - | - | - | -
 | 0 | - | - |
| - | - | - | - | 43.8

 | <u>-</u> | -
 | - | - | - | - | -

 | - | - | - | -
 | 50.0 | - | • | - | - | -
 | 0.0 | - | - |
| - | _ | - | _ | 9

 | _ | -
 | _ | - | _ | 0 | _

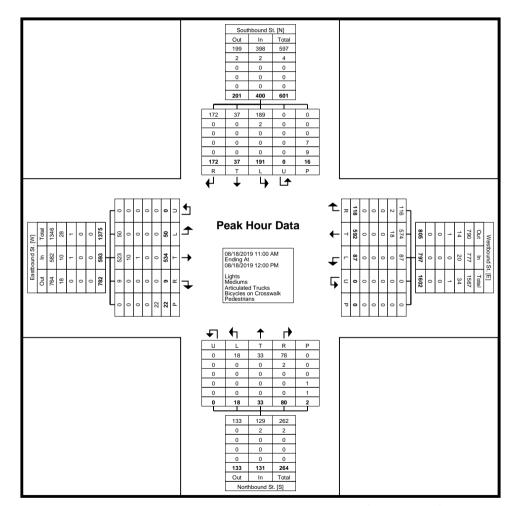
 | - | - | _ | _
 | 1 | - | - | - | - |
 | 22 | - | - |
| _ | | | | 56.3

 | | I -
 | | | | |

 | | | | | | | | | | | | | | | | | | | | | | | | | |
 | | | | | |
 | | | I — |
| | 42
42
45
43
172
43.0
9.0
0.956
172
100.0
0
0.0
0 | 42 5 42 7 45 12 43 13 172 37 43.0 9.3 9.0 1.9 0.956 0.712 172 37 100.0 100.0 0 0 0.0 0.0 0 0 0 0 | Right Thru Left 42 5 52 42 7 58 45 12 45 43 13 36 172 37 191 43.0 9.3 47.8 9.0 1.9 9.9 0.956 0.712 0.823 172 37 189 100.0 100.0 99.0 0 0 2 0.0 0.0 1.0 0 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 - - - - - - - - - - - - - - - - - - - - - - - - - - | 42 5 52 0 42 7 58 0 45 12 45 0 43 13 36 0 172 37 191 0 43.0 9.3 47.8 0.0 9.0 1.9 9.9 0.0 0.956 0.712 0.823 0.000 172 37 189 0 100.0 100.0 99.0 - 0 0 2 0 0.0 0.0 1.0 - 0 0 0 0 0.0 0.0 0.0 - 0 0 0.0 - 0 0 0.0 - - - - - - - - - - - - - - - - - - - - <td>Right Thru Left U-Turn Peds 42 5 52 0 2 42 7 58 0 2 45 12 45 0 8 43 13 36 0 4 172 37 191 0 16 43.0 9.3 47.8 0.0 - 9.0 1.9 9.9 0.0 - 0.956 0.712 0.823 0.000 - 172 37 189 0 - 100.0 100.0 99.0 - - 0 0 2 0 - 0.0 0.0 1.0 - - 0.0 0.0 0 - - 0.0 0.0 0 - - 0.0 0.0 0 - - 0.0 0.0 0 - -</td> <td>Southbound Right Thru Left U-Turn Peds App. Total 42 5 52 0 2 99 42 7 58 0 2 107 45 12 45 0 8 102 43 13 36 0 4 92 172 37 191 0 16 400 43.0 9.3 47.8 0.0 - - 9.0 1.9 9.9 0.0 - 20.8 0.956 0.712 0.823 0.000 - 0.935 172 37 189 0 - 398 100.0 100.0 99.0 - 99.5 0 0 2 0 - 2 0.0 0 0 - 0 0 0 0 0 - 0 0 0</td> <td>Southbund Right Thru Left U-Turn Peds App. Total Total Total Right 42 5 52 0 2 99 27 42 7 58 0 2 107 30 45 12 45 0 8 102 38 43 13 36 0 4 92 23 172 37 191 0 16 400 118 43.0 9.3 47.8 0.0 - - 14.8 9.0 1.9 9.9 0.0 - 20.8 6.1 0.956 0.712 0.823 0.000 - 0.935 0.776 172 37 189 0 - 398 116 100.0 100.0 99.0 - - 99.5 98.3 0 0 2 0 - 2 2</td> <td>Southbound St. Southbound Right Thru Left U-Turn Peds App. Total App. Total Right Thru 42 5 52 0 2 99 27 148 42 7 58 0 2 107 30 155 45 12 45 0 8 102 38 131 43 13 36 0 4 92 23 158 172 37 191 0 16 400 118 592 43.0 9.3 47.8 0.0 - - 14.8 74.3 9.0 1.9 9.9 0.0 - 20.8 6.1 30.8 0.956 0.712 0.823 0.000 - 0.935 0.776 0.937 172 37 189 0 - 398 116 574 100.0 100.0 99.0 -</td> <td>Southbound St. Southbound Westbound Right Thru Left U-Turn Peds App. Total Total Total Total Right Thru Left 42 5 52 0 2 99 27 148 11 42 7 58 0 2 107 30 155 23 45 12 45 0 8 102 38 131 32 45 22 2 31 48 22</td> <td>Southbound St. Southbound Southbound St. Westbound Right Thru Left U-Turn Peds App. Total Total Total App. Total Right Thru Left U-Turn 42 5 52 0 2 99 27 148 11 0 42 7 58 0 2 107 30 155 23 0 45 12 45 0 8 102 38 131 31 0 43 13 36 0 4 92 23 158 22 0 172 37 191 0 16 400 118 592 87 0 43.0 9.3 47.8 0.0 - - 14.8 74.3 10.9 0.0 9.0 1.9 9.9 0.0 - 20.8 6.1 30.8 4.5 0.0 0.956 0.712 0.823 0.</td> <td>Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound St. Westbound Right Thru Left U-Turn Peds App. Total Total App. Total Right Thru Left U-Turn Peds 42 5 52 0 2 99 27 148 11 0 0 42 7 58 0 2 107 30 155 23 0 0 45 12 45 0 8 102 38 131 31 0 0 43 13 36 0 4 92 23 158 22 0 0 172 37 191 0 16 400 118 592 87 0 0 43.0 9.3 47.8 0.0 - - 14.8 74.3 10.9 0.0 - 9.0 1.9 9.9 0.0 - <td< td=""><td>Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total
Total 42 5 52 0 2 99 27 148 11 0 0 186 42 7 58 0 2 107 30 155 23 0 0 208 45 12 45 0 8 102 38 131 31 0 0 200 43 13 36 0 4 92 23 158 22 0 0 203 172 37 191 0 16 400 118 592 87 0 0 797 43.0 9.3 47.8 0.00 - - 14.8 74.3 10.9 0.0 - - 99.5 6.1 30.8 4.5 0.0 - 41.5 0.9</td><td>Right Thru Left U-Turn Peds App. Total Right 42 5 52 0 2 99 27 148 11 0 0 186 23 42 7 58 0 2 107 30 155 23 0 0 208 16 45 12 45 0 8 102 38 131 31 0 0 200 21 43 13 36 0 4 92 23 158 22 0 0 203 20 172 37 191 0 16 400 118 592 87 0 0 797 80 43.0 9.3<</td><td>Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru 42 5 52 0 2 99 27 148 11 0 0 186 23 4 42 7 58 0 2 107 30 155 23 0 0 208 16 8 45 12 45 0 8 102 38 131 31 0 0 200 21 10 43 13 36 0 4 92 23 158 22 0 0 203 20 11 172 37 191 0 16 400 118 592 87</td><td>Southbound St. Southbound Northbound St. Southbound Northbound St. Westbound Northbound St. Westbound Northbound St. Westbound Northbound St. Northbound Methods Northbound St. Westbound St. Westboun</td><td>South-bund St. South-bund South-bund St. South-bund West-bund St. West-bund West-bund St. West-bund South-bund St. North-bund St. North-bun</td><td> Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds Total Total</td><td> South-bund St. Sou</td><td> Right Nru</td><td> North-burst /td><td> Right Thru Ceft U-Turn Peds App. Right Thru U-Turn Peds App. U-Turn Peds </td><td> No colspan="12"> South-burned Sir</td><td> No. No.</td><td> Right Thru Left Left Left Thru Left /td></td<></td> | Right Thru Left U-Turn Peds 42 5 52 0 2 42 7 58 0 2 45 12 45 0 8 43 13 36 0 4 172 37 191 0 16 43.0 9.3 47.8 0.0 - 9.0 1.9 9.9 0.0 - 0.956 0.712 0.823 0.000 - 172 37 189 0 - 100.0 100.0 99.0 - - 0 0 2 0 - 0.0 0.0 1.0 - - 0.0 0.0 0 - - 0.0 0.0 0 - - 0.0 0.0 0 - - 0.0 0.0 0 - - | Southbound Right Thru Left U-Turn Peds App. Total 42 5 52 0 2 99 42 7 58 0 2 107 45 12 45 0 8 102 43 13 36 0 4 92 172 37 191 0 16 400 43.0 9.3 47.8 0.0 - - 9.0 1.9 9.9 0.0 - 20.8 0.956 0.712 0.823 0.000 - 0.935 172 37 189 0 - 398 100.0 100.0 99.0 - 99.5 0 0 2 0 - 2 0.0 0 0 - 0 0 0 0 0 - 0 0 0 | Southbund Right Thru Left U-Turn Peds App. Total Total Total Right 42 5 52 0 2 99 27 42 7 58 0 2 107 30 45 12 45 0 8 102 38 43 13 36 0 4 92 23 172 37 191 0 16 400 118 43.0 9.3 47.8 0.0 - - 14.8 9.0 1.9 9.9 0.0 - 20.8 6.1 0.956 0.712 0.823 0.000 - 0.935 0.776 172 37 189 0 - 398 116 100.0 100.0 99.0 - - 99.5 98.3 0 0 2 0 - 2 2 | Southbound St. Southbound Right Thru Left U-Turn Peds App. Total App. Total Right Thru 42 5 52 0 2 99 27 148 42 7 58 0 2 107 30 155 45 12 45 0 8 102 38 131 43 13 36 0 4 92 23 158 172 37 191 0 16 400 118 592 43.0 9.3 47.8 0.0 - - 14.8 74.3 9.0 1.9 9.9 0.0 - 20.8 6.1 30.8 0.956 0.712 0.823 0.000 - 0.935 0.776 0.937 172 37 189 0 - 398 116 574 100.0 100.0 99.0 - | Southbound St. Southbound Westbound Right Thru Left U-Turn Peds App. Total Total Total Total Right Thru Left 42 5 52 0 2 99 27 148 11 42 7 58 0 2 107 30 155 23 45 12 45 0 8 102 38 131 32 45 22 2 31 48 22 | Southbound St. Southbound Southbound St. Westbound Right Thru Left U-Turn Peds App. Total Total Total App. Total Right Thru Left U-Turn 42 5 52 0 2 99 27 148 11 0 42 7 58 0 2 107 30 155 23 0 45 12 45 0 8 102 38 131 31 0 43 13 36 0 4 92 23 158 22 0 172 37 191 0 16 400 118 592 87 0 43.0 9.3 47.8 0.0 - - 14.8 74.3 10.9 0.0 9.0 1.9 9.9 0.0 - 20.8 6.1 30.8 4.5 0.0 0.956 0.712 0.823 0. | Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound St. Westbound Right Thru Left U-Turn Peds App. Total Total App. Total Right Thru Left U-Turn Peds 42 5 52 0 2 99 27 148 11 0 0 42 7 58 0 2 107 30 155 23 0 0 45 12 45 0 8 102 38 131 31 0 0 43 13 36 0 4 92 23 158 22 0 0 172 37 191 0 16 400 118 592 87 0 0 43.0 9.3 47.8 0.0 - - 14.8 74.3 10.9 0.0 - 9.0 1.9 9.9 0.0 - <td< td=""><td>Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total
Total 42 5 52 0 2 99 27 148 11 0 0 186 42 7 58 0 2 107 30 155 23 0 0 208 45 12 45 0 8 102 38 131 31 0 0 200 43 13 36 0 4 92 23 158 22 0 0 203 172 37 191 0 16 400 118 592 87 0 0 797 43.0 9.3 47.8 0.00 - - 14.8 74.3 10.9 0.0 - - 99.5 6.1 30.8 4.5 0.0 - 41.5 0.9</td><td>Right Thru Left U-Turn Peds App. Total Right 42 5 52 0 2 99 27 148 11 0 0 186 23 42 7 58 0 2 107 30 155 23 0 0 208 16 45 12 45 0 8 102 38 131 31 0 0 200 21 43 13 36 0 4 92 23 158 22 0 0 203 20 172 37 191 0 16 400 118 592 87 0 0 797 80 43.0 9.3<</td><td>Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru 42 5 52 0 2 99 27 148 11 0 0 186 23 4 42 7 58 0 2 107 30 155 23 0 0 208 16 8 45 12 45 0 8 102 38 131 31 0 0 200 21 10 43 13 36 0 4 92 23 158 22 0 0 203 20 11 172 37 191 0 16 400 118 592 87</td><td>Southbound St. Southbound Northbound St. Southbound Northbound St. Westbound Northbound St. Westbound Northbound St. Westbound Northbound St. Northbound Methods Northbound St. Westbound St. Westboun</td><td>South-bund St. South-bund South-bund St. South-bund West-bund St. West-bund West-bund St. West-bund South-bund St. North-bund St. North-bun</td><td> Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds Total Total</td><td> South-bund St. Sou</td><td> Right Nru</td><td> North-burst /td><td> Right Thru Ceft U-Turn Peds App. Right Thru U-Turn Peds App. U-Turn Peds </td><td> No colspan="12"> South-burned Sir</td><td> No. No.</td><td> Right Thru Left Left Left Thru Left /td></td<> | Right Thru Left U-Turn Peds App. Total
Total Right Thru Left U-Turn Peds App. Total
Total 42 5 52 0 2 99 27 148 11 0 0 186 42 7 58 0 2 107 30 155 23 0 0 208 45 12 45 0 8 102 38 131 31 0 0 200 43 13 36 0 4 92 23 158 22 0 0 203 172 37 191 0 16 400 118 592 87 0 0 797 43.0 9.3 47.8 0.00 - - 14.8 74.3 10.9 0.0 - - 99.5 6.1 30.8 4.5 0.0 - 41.5 0.9 | Right Thru Left U-Turn Peds App. Total Right 42 5 52 0 2 99 27 148 11 0 0 186 23 42 7 58 0 2 107 30 155 23 0 0 208 16 45 12 45 0 8 102 38 131 31 0 0 200 21 43 13 36 0 4 92 23 158 22 0 0 203 20 172 37 191 0 16 400 118 592 87 0 0 797 80 43.0 9.3< | Southbound St. Southbound Southbound St. Southbound Westbound St. Westbound Westbound St. Westbound Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru 42 5 52 0 2 99 27 148 11 0 0 186 23 4 42 7 58 0 2 107 30 155 23 0 0 208 16 8 45 12 45 0 8 102 38 131 31 0 0 200 21 10 43 13 36 0 4 92 23 158 22 0 0 203 20 11 172 37 191 0 16 400 118 592 87 | Southbound St. Southbound Northbound St. Southbound Northbound St. Westbound Northbound St. Westbound Northbound St. Westbound Northbound St. Northbound Methods Northbound St. Westbound St. Westboun | South-bund St. South-bund South-bund St. South-bund West-bund St. West-bund West-bund St. West-bund South-bund St. North-bund St. North-bun | Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Total Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds App. Right Thru Left U-Turn Peds Total Thru Left U-Turn Peds Total Right Thru Left U-Turn Peds Total Total | South-bund St. Sou | Right Nru | North-burst North-burst | Right Thru Ceft U-Turn Peds App. Right Thru U-Turn Peds App. U-Turn Peds | No colspan="12"> South-burned Sir | No. No. | Right Thru Left Left Left Thru Left Left |



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)



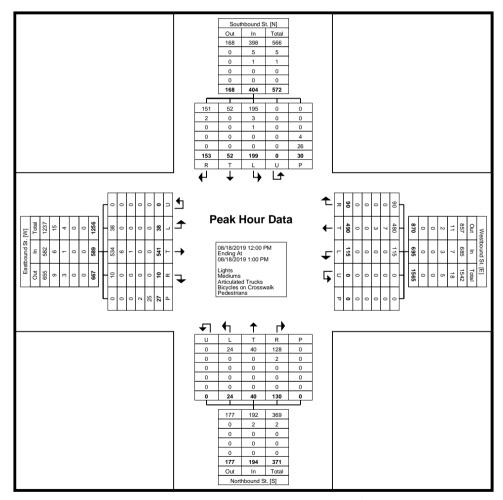
Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 8

Turning Movement Peak Hour Data (12:00 PM)

	ı						ı	i uiii	_	ovem	ent F	ean i	ioui L	Jaia (•	,			ı						ı
				ound St.					Westbo	ound St.						ound St.					Eastbo	ound St.			
			South	nbound					West	bound					North	nbound					Eastl	oound			
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
12:00 PM	34	13	53	0	8	100	19	127	28	0	0	174	28	14	. 5	0	0	47	1	132	11	. 0	6	144	465
12:15 PM	43	7	51	0	13	101	25	133	15	0	0	173	42	8	4	0	0	54	2	150	11	0	12	163	491
12:30 PM	38	12	55	0	9	105	20	135	36	0	0	191	30	9	6	0	0	45	4	133	10	0	7	147	488
12:45 PM	38	20	40	0	0	98	26	95	36	0	0	157	30	9	9	0	0	48	3	126	6	. 0	2	135	438
Total	153	52	199	0	30	404	90	490	115	0	0	695	130	40	24	0	0	194	10	541	38	0	27	589	1882
Approach %	37.9	12.9	49.3	0.0	-	-	12.9	70.5	16.5	0.0	-	-	67.0	20.6	12.4	0.0	-	-	1.7	91.9	6.5	0.0	-	-	-
Total %	8.1	2.8	10.6	0.0	-	21.5	4.8	26.0	6.1	0.0	-	36.9	6.9	2.1	1.3	0.0	-	10.3	0.5	28.7	2.0	0.0	-	31.3	-
PHF	0.890	0.650	0.905	0.000	-	0.962	0.865	0.907	0.799	0.000	-	0.910	0.774	0.714	0.667	0.000	-	0.898	0.625	0.902	0.864	0.000	-	0.903	0.958
Lights	151	52	195	0	-	398	90	480	115	0	-	685	128	40	24	0	-	192	10	534	38	0	-	582	1857
% Lights	98.7	100.0	98.0	-	-	98.5	100.0	98.0	100.0	-	-	98.6	98.5	100.0	100.0	-	-	99.0	100.0	98.7	100.0	-	-	98.8	98.7
Mediums	2	0	3	0	-	5	0	7	0	0	-	7	2	0	0	0	-	2	0	6	0	0	-	6	20
% Mediums	1.3	0.0	1.5	-	-	1.2	0.0	1.4	0.0	-	-	1.0	1.5	0.0	0.0	-	-	1.0	0.0	1.1	0.0	-	-	1.0	1.1
Articulated Trucks	0	0	1	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	5
% Articulated Trucks	0.0	0.0	0.5	-	-	0.2	0.0	0.6	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.3
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	13.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-
Pedestrians	-	_		_	26	-	-	-	-	_	0	-	-	-	_	-	0	-	-	_	_	-	25	-	-
% Pedestrians	-	-	-		86.7	-	-	-	-	-	-	-	-	-	-	-	-		-			-	92.6		-



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 9



Turning Movement Peak Hour Data Plot (12:00 PM)



Count Name: Chumstick/US-2 Site Code: Start Date: 08/16/2019 Page No: 10



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019

Page No: 1

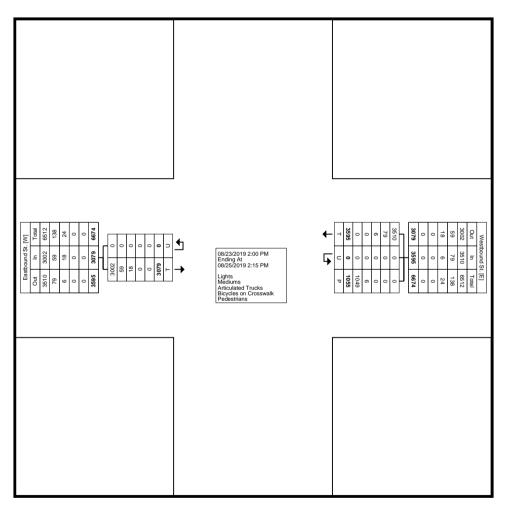
Turning Movement Data

		Westbo	ound St.	vomoni Baia		Eastbound St. Eastbound		
Start Time	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	App. Total	Int. Total
2:00 PM	166	0	48	166	137	0	137	303
2:15 PM	159	0	32	159	119	0	119	278
2:30 PM	162	0	30	162	134	0	134	296
2:45 PM	113	0	44	113	129	0	129	242
Hourly Total	600	0	154	600	519	0	519	1119
3:00 PM	153	0	56	153	116	0	116	269
3:15 PM	143	0	34	143	131	0	131	274
3:30 PM	152	0	53	152	144	0	144	296
3:45 PM	158	0	25	158	147	0	147	305
Hourly Total	606	0	168	606	538	0	538	1144
4:00 PM	154	0	42	154	106	0	106	260
4:15 PM	127	0	24	127	142	0	142	269
4:30 PM	147	0	35	147	136	0	136	283
4:45 PM	144	0	38	144	119	0	119	263
Hourly Total	572	0	139	572	503	0	503	1075
5:00 PM	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0
11:00 AM	145	0	42	145	120	0	120	265
11:15 AM	153	0	40	153	146	0	146	299
11:30 AM	166	0	48	166	134	0	134	300
11:45 AM	139	0	40	139	119	0	119	258
Hourly Total	603	0	170	603	519	0	519	1122
12:00 PM	144	0	30	144	138	0	138	282
12:15 PM	148	0	91	148	134	0	134	282
12:30 PM	149	0	63	149	134	0	134	283
12:45 PM	150	0	63	150	106	0	106	256
Hourly Total	591	0	247	591	512	0	512	1103
1:00 PM	158	0	34	158	112	0	112	270
1:15 PM	156	0	56	156	121	0	121	277
1:30 PM	151	0	51	151	127	0	127	278
1:45 PM	158	0	36	158	128	0	128	286
Hourly Total	623	0	177	623	488	0	488	1111
2:00 PM	0	0	0	0	0	0	0	0
Grand Total	3595	0	1055	3595	3079	0	3079	6674
Approach %	100.0	0.0	-	<u>-</u>	100.0	0.0	-	-

Total %	53.9	0.0	-	53.9	46.1	0.0	46.1	-
Lights	3510	0	-	3510	3002	0	3002	6512
% Lights	97.6	-	-	97.6	97.5	-	97.5	97.6
Mediums	79	0	-	79	59	0	59	138
% Mediums	2.2	-	-	2.2	1.9	-	1.9	2.1
Articulated Trucks	6	0	-	6	18	0	18	24
% Articulated Trucks	0.2	-	-	0.2	0.6	-	0.6	0.4
Bicycles on Crosswalk	-	-	6	-	-	-	-	-
% Bicycles on Crosswalk	-	-	0.6	-	-	-	-	-
Pedestrians	-	-	1049	-	-	-	-	-
% Pedestrians	-	-	99.4	<u>-</u>	-	-	-	-



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 3



Turning Movement Data Plot



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 4

Turning Movement Peak Hour Data (3:00 PM)

		r urriirig i	MOVELLICIT I E	ak i loui Dala (ې.٥٥ ا الاا)			1
		Westbo	und St.			Eastbound St.		
Start Time		Westb	oound			Eastbound		
Start Time	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	App. Total	Int. Total
3:00 PM	153	0	56	153	116	0	116	269
3:15 PM	143	0	34	143	131	0	131	274
3:30 PM	152	0	53	152	144	0	144	296
3:45 PM	158	0	25	158	147	0	147	305
Total	606	0	168	606	538	0	538	1144
Approach %	100.0	0.0	-	-	100.0	0.0	-	-
Total %	53.0	0.0	-	53.0	47.0	0.0	47.0	-
PHF	0.959	0.000	-	0.959	0.915	0.000	0.915	0.938
Lights	596	0	-	596	522	0	522	1118
% Lights	98.3	-	-	98.3	97.0	-	97.0	97.7
Mediums	9	0	-	9	11	0	11	20
% Mediums	1.5		-	1.5	2.0	-	2.0	1.7
Articulated Trucks	1	0	-	1	5	0	5	6
% Articulated Trucks	0.2	<u>-</u>	-	0.2	0.9	<u>-</u>	0.9	0.5
Bicycles on Crosswalk	-		2		-	-	-	-
% Bicycles on Crosswalk	-	-	1.2	<u>-</u>	-	<u>-</u>	-	-
Pedestrians	-	<u>-</u>	166	<u>-</u>	-	-	<u>-</u>	-
% Pedestrians	-	-	98.8	-	-	-	-	-



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 5

	8				4												ı	Pea	ık H	Hou	ır D	ata			6					55		5					л		7
1St. [W]	+	╁		\dashv	0 1144	H١		,	0	0	0	0	0	n	<u>+</u>			08/	23/201	9.3:00	PM	\neg	+	H	606		Н	-	9	-	H	ω.			+	\dashv	500	Westbo	
stpon	522	┢	2	0	0 22	۱.	200	770	=	2	0	0	538	F	→	•				9 3:00 9 4:00	РМ		4	H	┡		0	0	0	0	н	٥,		0	4	_	508	J.St.	
Ea	969	0	-	0	0 909													Light Mee Arti Bico Pec	nts diums culatec ycles o destriar	d Truck in Cros is	ks ssswalk				168	166	2	0	0 1			1144	0	0	0	20	1118	(E)	

Turning Movement Peak Hour Data Plot (3:00 PM)



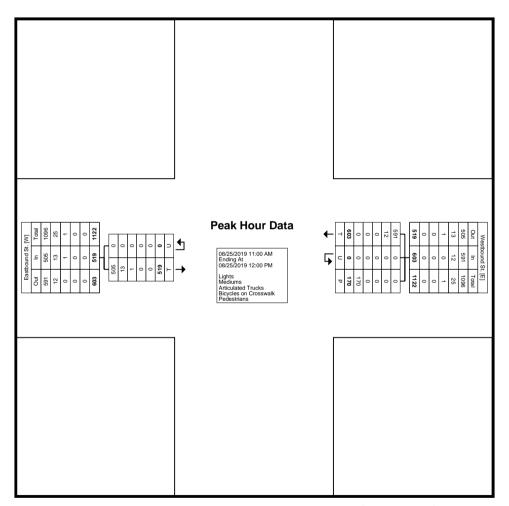
Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

		i dirillig i	VIOVEITICITE I CE	ak i loui Data (i	1.00 / ((V))							
		Westbo	ound St.			Eastbound St.						
Start Time		West	bound			Eastbound						
Start Time	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	App. Total	Int. Total				
11:00 AM	145	0	42	145	120	0	120	265				
11:15 AM	153	0	40	153	146	0	146	299				
11:30 AM	166	0	48	166	134	0	134	300				
11:45 AM	139	0	40	139	119	0	119	258				
Total	603	0	170	603	519	0	519	1122				
Approach %	100.0	0.0	-	-	100.0	0.0	-	-				
Total %	53.7	0.0	-	53.7	46.3	0.0	46.3	-				
PHF	0.908	0.000	-	0.908	0.889	0.000	0.889	0.935				
Lights	591	0	-	591	505	0	505	1096				
% Lights	98.0	_		98.0	97.3	<u>-</u>	97.3	97.7				
Mediums	12	0	-	12	13	0	13	25				
% Mediums	2.0	-	-	2.0	2.5	-	2.5	2.2				
Articulated Trucks	0	0		0	1	0	1	1				
% Articulated Trucks	0.0	<u>-</u>	-	0.0	0.2	<u>-</u>	0.2	0.1				
Bicycles on Crosswalk	-	-	0	-	-	-	-	-				
% Bicycles on Crosswalk	-	_	0.0	<u>-</u>	-	-	-	-				
Pedestrians	-	-	170	<u>-</u>	-	<u>-</u>	-	-				
% Pedestrians	-	-	100.0	-	-	-	-	-				



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)



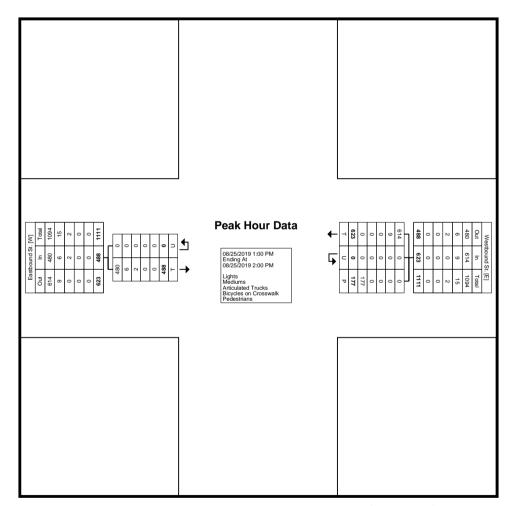
Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 8

Turning Movement Peak Hour Data (1:00 PM)

		ranning	MOVETHER T	an Hour Data (1.00 1 WI)			,
		Westbo	ound St.			Eastbound St.		
Start Time		West	bound					
Start Time	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	App. Total	Int. Total
1:00 PM	158	0	34	158	112	0	112	270
1:15 PM	156	0	56	156	121	0	121	277
1:30 PM	151	0	51	151	127	0	127	278
1:45 PM	158	0	36	158	128	0	128	286
Total	623	0	177	623	488	0	488	1111
Approach %	100.0	0.0	-	-	100.0	0.0	-	-
Total %	56.1	0.0	-	56.1	43.9	0.0	43.9	-
PHF	0.986	0.000	-	0.986	0.953	0.000	0.953	0.971
Lights	614	0	-	614	480	0	480	1094
% Lights	98.6	<u>-</u>	-	98.6	98.4	<u>-</u>	98.4	98.5
Mediums	9	0	-	9	6	0	6	15
% Mediums	1.4	-	-	1.4	1.2	-	1.2	1.4
Articulated Trucks	0	0	-	0	2	0	2	2
% Articulated Trucks	0.0	-	-	0.0	0.4	-	0.4	0.2
Bicycles on Crosswalk	-	-	0	-	-	-	-	-
% Bicycles on Crosswalk	-	_	0.0	<u>-</u>	-	-	-	-
Pedestrians	-	-	177	<u>-</u>	-	-	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 9



Turning Movement Peak Hour Data Plot (1:00 PM)



Count Name: City Hall HAWK/US-2 Site Code: Start Date: 08/23/2019 Page No: 10

Please consider expanding the crosswalk delineation to capture all pedestrians as some may approach and depart the crosswalk at a 45-degree angle from the curb.



Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019

Page No: 1

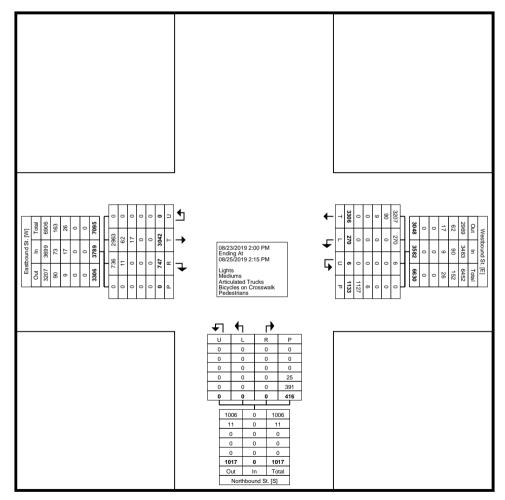
Turning Movement Data

			Westbound St.			Tan	mig ivio	Northbound St.	Julu				Eastbound St.			
			Westbound					Northbound								
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	Eastbound U-Turn	Peds	App. Total	Int. Total
2:00 PM	156	7	4	39	167	0	0	0	12	0	33	134	0	0	167	334
2:15 PM	132	12	1	31	145	0	0	0	18	0	27	127	0	0	154	299
2:30 PM	165	9	0	34	174	0	0	0	13	0	37	128	0	0	165	339
2:45 PM	111	9	0	34	120	0	0	0	13	0	29	128	0	0	157	277
Hourly Total	564	37	5	138	606	0	0	0	56	0	126	517	0	0	643	1249
3:00 PM	138	12	0	57	150	0	0	0	9	0	26	123	0	0	149	299
3:15 PM	120	12	0	50	132	0	0	0	19	0	24	121	0	0	145	277
3:30 PM	140	8	0	48	148	0	0	0	6	0	23	141	0	0	164	312
3:45 PM	148	4	0	14	152	0	0	0	9	0	27	145	0	0	172	324
Hourly Total	546	36	0	169	582	0	0	0	43	0	100	530	0	0	630	1212
4:00 PM	153	2	0	24	155	0	0	0	20	0	28	118	0	0	146	301
4:15 PM	128	5	0	20	133	0	0	0	30	0	18	122	0	0	140	273
4:30 PM	136	. 8	0	19	144	0	0	0	5	0	24	142	0	0	166	310
4:45 PM	133	8	0	59	141	0	0	0	12	0	17	109	0	0	126	267
Hourly Total	550	23	0	122	573	0	0	0	67	0	87	491	0	0	578	1151
5:00 PM	0	. 0	. 0	2	0	0	0	. 0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	 .	-	-	-
Hourly Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	142	. 8	. 0	61	150	0	0	. 0	13	0	37	128	0	0	165	315
11:15 AM	143	17	0	25	160	0	0	0	9	0	50	133	0	0	183	343
11:30 AM	134	17	0	39	151	0	0	0	19	0	35	137	0	0	172	323
11:45 AM	141	12	0	99	153	0	0	. 0	19	0	31	113	0	0	144	297
Hourly Total	560	54	0	224	614	0	0	0	60	0	153	511	0	0	664	1278
12:00 PM	124	17	0	74	141	0	0	0	23	0	20	133	0	0	153	294
12:15 PM	128	12	0	56	140	0	0	0	21	0	38	136	0	0	174	314
12:30 PM	146	16	0	59	162	0	0	0	18	0	43	136	0	0	179	341
12:45 PM	128	13	0	56	141	0	0	0	21	0	32	102	0	0	134	275
Hourly Total	526	58	0	245	584	0	0	0	83	0	133	507	0	0	640	1224
1:00 PM	131	22	0	57	153	0	0	0	31	0	41	119	0	0	160	313
1:15 PM	157	13	0	51	170	0	0	0	33	0	34	113	0	0	147	317
1:30 PM	127	15	1	51	143	0	0	0	23	0	38	125	0	0	163	306
1:45 PM	145	12	0	74	157	0	0	0	20	0	35	129	0	0	164	321
Hourly Total	560	62	11	233	623	0	0	0	107	0	148	486	0	0	634	1257
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	3306	270	6	1133	3582	0	0	0	416	0	747	3042	0	0	3789	7371
Approach %	92.3	7.5	0.2	-	-	0.0	0.0	0.0	-	-	19.7	80.3	0.0	-	-	-

Total %	44.9	3.7	0.1	-	48.6	0.0	0.0	0.0	-	0.0	10.1	41.3	0.0	-	51.4	-
Lights	3207	270	6	-	3483	0	0	0	-	0	736	2963	0	-	3699	7182
% Lights	97.0	100.0	100.0	-	97.2	-	-	-	-	-	98.5	97.4	-	-	97.6	97.4
Mediums	90	0	0	-	90	0	0	0	-	0	11	62	0	-	73	163
% Mediums	2.7	0.0	0.0	-	2.5	-	-	-	-	-	1.5	2.0	-	-	1.9	2.2
Articulated Trucks	9	0	0	-	9	0	0	0	-	0	0	17	0	-	17	26
% Articulated Trucks	0.3	0.0	0.0	-	0.3	-	-	-	-	-	0.0	0.6	-	-	0.4	0.4
Bicycles on Crosswalk	-	-	-	6	-	-	-	-	25	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.5	-	-	-	-	6.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	1127	-	-	-	-	391	-	-	-	-	0	-	-
% Pedestrians	-	-	-	99.5	-	-	_	-	94.0	_	-	-	-	-	-	_



Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 3



Turning Movement Data Plot



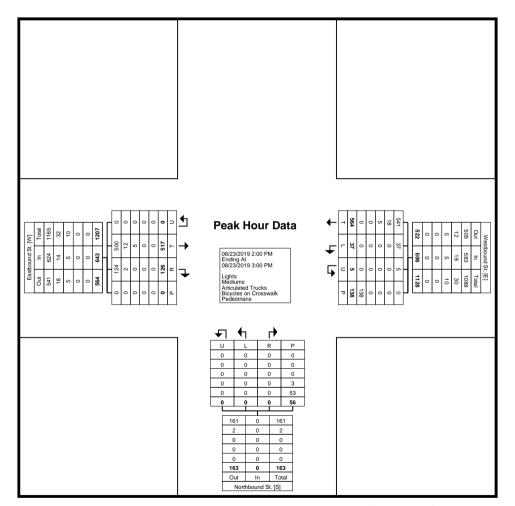
Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 4

Turning Movement Peak Hour Data (2:00 PM)

	i				Turriiriç	a moven	nent Pea	ak moui i	Jala (Z.		Ì				ı	ı
			Westbound St.					Northbound St.								
Start Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
2:00 PM	156	7	4	39	167	0	0	0	12	0	33	134	0	0	167	334
2:15 PM	132	12	1	31	145	0	0	0	18	0	27	127	0	0	154	299
2:30 PM	165	9	0	34	174	0	0	0	13	0	37	128	0	0	165	339
2:45 PM	111	9	0	34	120	0	0	0	13	0	29	128	0	0	157	277
Total	564	37	5	138	606	0	0	0	56	0	126	517	0	0	643	1249
Approach %	93.1	6.1	0.8	-	-	0.0	0.0	0.0	-	-	19.6	80.4	0.0	-	-	-
Total %	45.2	3.0	0.4	-	48.5	0.0	0.0	0.0	-	0.0	10.1	41.4	0.0	-	51.5	-
PHF	0.855	0.771	0.313	-	0.871	0.000	0.000	0.000	-	0.000	0.851	0.965	0.000	-	0.963	0.921
Lights	541	37	5	-	583	0	0	0	-	0	124	500	0	-	624	1207
% Lights	95.9	100.0	100.0	-	96.2	-	-	-	-	-	98.4	96.7	-	-	97.0	96.6
Mediums	18	0	0	-	18	0	0	0	-	0	2	12	0	-	14	32
% Mediums	3.2	0.0	0.0	-	3.0	-	-	-	-	-	1.6	2.3	-	-	2.2	2.6
Articulated Trucks	5	0	0	-	5	0	0	0	-	0	0	5	0	-	5	10
% Articulated Trucks	0.9	0.0	0.0	-	0.8	-	-	-	-	-	0.0	1.0	-	-	0.8	0.8
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	ı	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	5.4	-	-	-	-	-	-	-
Pedestrians	-	-	-	138	-	-	-	-	53	-		-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	94.6	-	-	-	-	-	-	-



Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 5



Turning Movement Peak Hour Data Plot (2:00 PM)



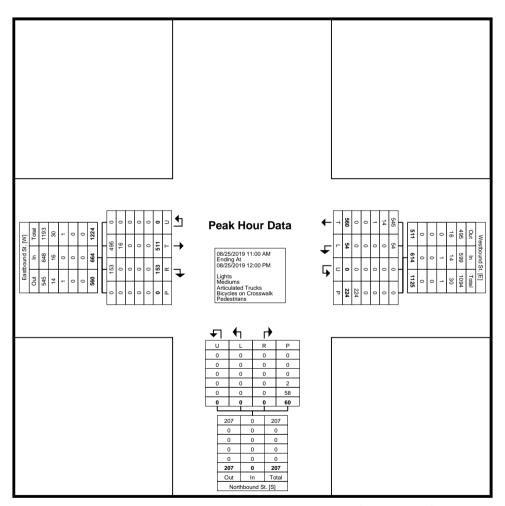
Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

					ruming	ivioverii	ieni Pea	K HOULL	Jala (TI	LUU AIVI)						
			Westbound St.					Northbound St.					Eastbound St.			
Start Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
11:00 AM	142	8	0	61	150	0	0	0	13	0	37	128	0	0	165	315
11:15 AM	143	17	0	25	160	0	0	0	9	0	50	133	0	0	183	343
11:30 AM	134	17	0	39	151	0	0	0	19	0	35	137	0	0	172	323
11:45 AM	141	12	0	99	153	0	0	0	19	0	31	113	0	0	144	297
Total	560	54	0	224	614	0	0	0	60	0	153	511	0	0	664	1278
Approach %	91.2	8.8	0.0	-	-	0.0	0.0	0.0	-	-	23.0	77.0	0.0	-	-	-
Total %	43.8	4.2	0.0	-	48.0	0.0	0.0	0.0	-	0.0	12.0	40.0	0.0	-	52.0	-
PHF	0.979	0.794	0.000	-	0.959	0.000	0.000	0.000	-	0.000	0.765	0.932	0.000	-	0.907	0.931
Lights	545	54	0	-	599	0	0	0	-	0	153	495	0	-	648	1247
% Lights	97.3	100.0	-	-	97.6	-	-	-	-	-	100.0	96.9	-	-	97.6	97.6
Mediums	14	0	0	-	14	0	0	0	-	0	0	16	0	-	16	30
% Mediums	2.5	0.0	-	-	2.3	-	-	-	-	-	0.0	3.1	-	-	2.4	2.3
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.2	0.0	-	-	0.2	-	-	-	-	-	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	3.3	-	-	-	-	-	-	-
Pedestrians	-	-	-	224	-	-	-	-	58	-	-	-	-	0	_	-
% Pedestrians	-	-	-	100.0	-	-	-	-	96.7	-	-	-	-	-	-	-



Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)



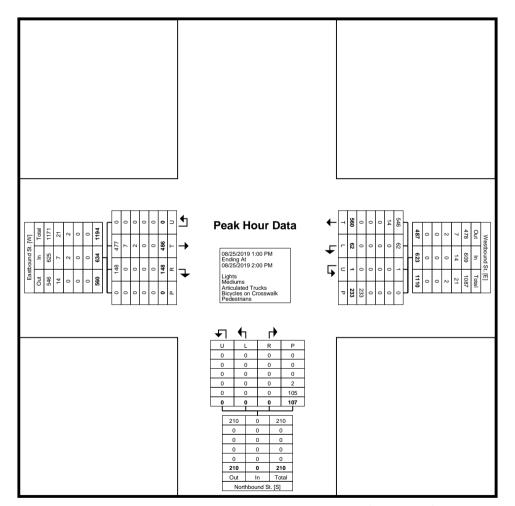
Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 8

Turning Movement Peak Hour Data (1:00 PM)

	i				runni	j ivioveii	ICHT L C	ak i loui l	Dala (1.	.UU FIVI)						
			Westbound St.					Northbound St.					Eastbound St.			
Start Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
1:00 PM	131	22	0	57	153	0	0	0	31	0	41	119	0	0	160	313
1:15 PM	157	13	0	51	170	0	0	0	33	0	34	113	0	0	147	317
1:30 PM	127	15	1	51	143	0	0	0	23	0	38	125	0	0	163	306
1:45 PM	145	12	0	74	157	0	0	0	20	0	35	129	0	0	164	321
Total	560	62	1	233	623	0	0	0	107	0	148	486	0	0	634	1257
Approach %	89.9	10.0	0.2	-	-	0.0	0.0	0.0	-	-	23.3	76.7	0.0	-	-	-
Total %	44.6	4.9	0.1	-	49.6	0.0	0.0	0.0	-	0.0	11.8	38.7	0.0	-	50.4	-
PHF	0.892	0.705	0.250	-	0.916	0.000	0.000	0.000	-	0.000	0.902	0.942	0.000	-	0.966	0.979
Lights	546	62	1	-	609	0	0	0	-	0	148	477	0	-	625	1234
% Lights	97.5	100.0	100.0	-	97.8	i	_	-	-	-	100.0	98.1	<u>-</u>	-	98.6	98.2
Mediums	14	0	0	-	14	0	0	0	-	0	0	7	0	-	7	21
% Mediums	2.5	0.0	0.0	-	2.2	i	-	-	-	-	0.0	1.4	-	-	1.1	1.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	0.0	i	-	-	-	-	0.0	0.4	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	0	-	i	-	-	2	-	ı	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	1.9	-	-	-	-	-	-	-
Pedestrians	-	-	-	233	-	-	-	-	105	-	-	-	<u>-</u>	0	-	-
% Pedestrians	-	-	-	100.0	-	i	-	-	98.1	-	-	-	-	-	<u>-</u>	



Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 9



Turning Movement Peak Hour Data Plot (1:00 PM)



Count Name: Front Street/US-2 Site Code: Start Date: 08/23/2019 Page No: 10

Please consider expanding the crosswalk delineation to capture pedestrians entering and exiting the crosswalk early at 45-degree angles to the curb.



Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 1

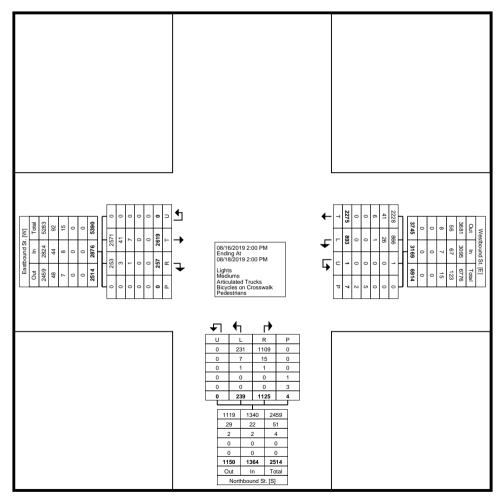
Turning Movement Data

	1						9		- 4.4							1
			Westbound St.					Northbound St.					Eastbound St.			
Otant Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
2:00 PM	78	38	0	1	116	51	3	0	0	54	16	96	0	0	112	282
2:15 PM	76	44	0	0	120	49	10	0	0	59	17	130	0	0	147	326
2:30 PM	92	30	0	0	122	38	8	0	0	46	14	118	0	0	132	300
2:45 PM	63	54	1	0	118	59	13	0	0	72	11	119	0	0	130	320
Hourly Total	309	166	1	1	476	197	34	0	0	231	58	463	0	0	521	1228
3:00 PM	85	35	0	0	120	43	9	0	0	52	8	113	0	0	121	293
3:15 PM	101	39	0	0	140	42	4	0	0	46	12	113	0	0	125	311
3:30 PM	79	36	0	0	115	38	6	0	0	44	13	127	0	0	140	299
3:45 PM	85	51	0	0	136	45	5	0	0	50	10	137	0	0	147	333
Hourly Total	350	161	0	0	511	168	24	0	0	192	43	490	0	0	533	1236
4:00 PM	72	24	0	0	96	45	10	0	0	55	20	121	0	0	141	292
4:15 PM	86	37	0	0	123	35	6	0	0	41	8	120	0	0	128	292
4:30 PM	91	38	0	0	129	49	7	0	0	56	8	84	0	0	92	277
4:45 PM	93	43	0	0	136	48	9	0	0	57	10	103	0	0	113	306
Hourly Total	342	142	0	0	484	177	32	0	0	209	46	428	0	0	474	1167
5:00 PM	0	. 0	0	0	. 0	0	0	0	0	0	0	0	. 0	0	. 0	0
*** BREAK ***	-	_	<u>-</u>	-	-	-	-	-	-	-	-	-	 .	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	123	35	0	1	158	59	9	0	0	68	8	75	0	0	83	309
11:15 AM	108	33	0	0	141	57	13	0	0	70	12	97	0	0	109	320
11:30 AM	104	32	0	0	136	42	12	0	0	54	10	92	0	0	102	292
11:45 AM	114	24	0	0	138	27	13	0	0	40	7	125	0	0	132	310
Hourly Total	449	124	0	1	573	185	47	0	0	232	37	389	0	0	426	1231
12:00 PM	104	36	0	1	140	50	12	0	0	62	8	94	0	0	102	304
12:15 PM	90	39	0	0	129	62	14	0	0	76	10	110	0	0	120	325
12:30 PM	95	41	0	0	136	49	11	0	0	60	10	107	0	0	117	313
12:45 PM	95	37	0	0	132	44	15	0	3	59	10	118	0	0	128	319
Hourly Total	384	153	0	1	537	205	52	0	3	257	38	429	0	0	467	1261
1:00 PM	94	50	. 0	0	144	40	10	0	0	50	9	109	0	0	118	312
1:15 PM	117	44	0	0	161	72	12	0	1	84	8	101	0	0	109	354
1:30 PM	113	32	0	0	145	43	12	0	0	55	5	106	0	0	111	311
1:45 PM	117	21	0	4	138	38	16	0	0	54	13	104	0	0	117	309
Hourly Total	441	147	0	4	588	193	50	0	1	243	35	420	0	0	455	1286
Grand Total	2275	893	1	7	3169	1125	239	0	4	1364	257	2619	0	0	2876	7409
Approach %	71.8	28.2	0.0	-	<u>-</u>	82.5	17.5	0.0	-	-	8.9	91.1	0.0	-	-	-
Total %	30.7	12.1	0.0	-	42.8	15.2	3.2	0.0	-	18.4	3.5	35.3	0.0	-	38.8	-

Lights	2228	866	1	-	3095	1109	231	0	-	1340	253	2571	0	-	2824	7259
% Lights	97.9	97.0	100.0	-	97.7	98.6	96.7	-	-	98.2	98.4	98.2	-	-	98.2	98.0
Mediums	41	26	0	-	67	15	7	0	-	22	3	41	0	-	44	133
% Mediums	1.8	2.9	0.0	-	2.1	1.3	2.9	-	-	1.6	1.2	1.6	-	-	1.5	1.8
Articulated Trucks	6	1	0	-	7	1	1	0	-	2	1	7	0	-	8	17
% Articulated Trucks	0.3	0.1	0.0	-	0.2	0.1	0.4	-	-	0.1	0.4	0.3	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	5	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	71.4	-	-	-	-	25.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	2	-	-	-	-	3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	28.6	-	-	-	-	75.0	-	-	-	-	-	-	-



Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 3



Turning Movement Data Plot



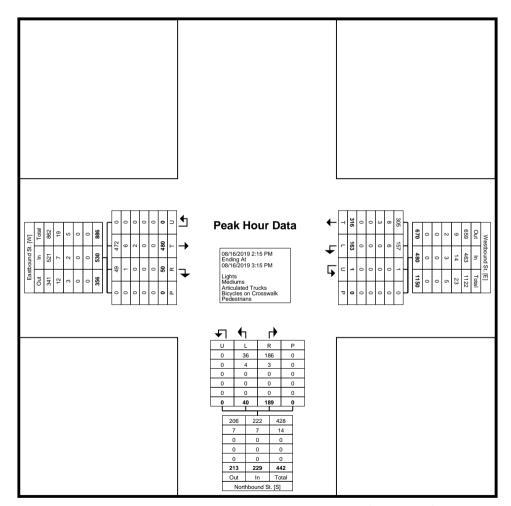
Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 4

Turning Movement Peak Hour Data (2:15 PM)

					ı anınış	JIVIOVOI		ait i ioui i	Data (Z	. 10 1 111						
			Westbound St.					Northbound St.					Eastbound St.			
Start Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
2:15 PM	76	44	0	0	120	49	10	0	0	59	17	130	0	0	147	326
2:30 PM	92	30	0	0	122	38	8	0	0	46	14	118	0	0	132	300
2:45 PM	63	54	1	0	118	59	13	0	0	72	11	119	0	0	130	320
3:00 PM	85	35	0	0	120	43	9	0	0	52	8	113	0	0	121	293
Total	316	163	1	0	480	189	40	0	0	229	50	480	0	0	530	1239
Approach %	65.8	34.0	0.2	-	-	82.5	17.5	0.0	-	-	9.4	90.6	0.0	-	-	-
Total %	25.5	13.2	0.1	-	38.7	15.3	3.2	0.0	-	18.5	4.0	38.7	0.0	-	42.8	-
PHF	0.859	0.755	0.250	-	0.984	0.801	0.769	0.000	-	0.795	0.735	0.923	0.000	-	0.901	0.950
Lights	305	157	1	-	463	186	36	0	-	222	49	472	0	-	521	1206
% Lights	96.5	96.3	100.0	-	96.5	98.4	90.0	-	-	96.9	98.0	98.3	-	-	98.3	97.3
Mediums	8	6	0	-	14	3	4	0	-	7	1	6	0	-	7	28
% Mediums	2.5	3.7	0.0	-	2.9	1.6	10.0	-	-	3.1	2.0	1.3	-	-	1.3	2.3
Articulated Trucks	3	0	0	-	3	0	0	0	-	0	0	2	0	-	2	5
% Articulated Trucks	0.9	0.0	0.0	-	0.6	0.0	0.0	-	-	0.0	0.0	0.4	-	-	0.4	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	_	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-		-	-	-	-	-	-	-	_	-



Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 5



Turning Movement Peak Hour Data Plot (2:15 PM)



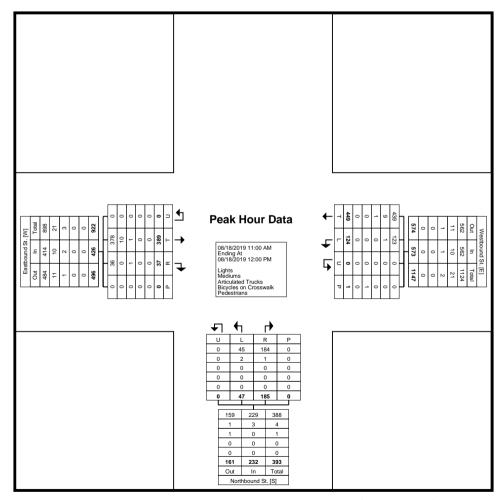
Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

					running	INIOAGIII	ICIIL F CO	IN I IOUI L	vala (i i	.uu Aivi)						
			Westbound St.					Northbound St.					Eastbound St.			
Start Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
11:00 AM	123	35	0	1	158	59	9	0	0	68	8	75	0	0	83	309
11:15 AM	108	33	0	0	141	57	13	0	0	70	12	97	0	0	109	320
11:30 AM	104	32	0	0	136	42	12	0	0	54	10	92	0	0	102	292
11:45 AM	114	24	0	0	138	27	13	0	0	40	7	125	0	0	132	310
Total	449	124	0	1	573	185	47	0	0	232	37	389	0	0	426	1231
Approach %	78.4	21.6	0.0	-	-	79.7	20.3	0.0	-	-	8.7	91.3	0.0	-	-	-
Total %	36.5	10.1	0.0	-	46.5	15.0	3.8	0.0	-	18.8	3.0	31.6	0.0	-	34.6	-
PHF	0.913	0.886	0.000	-	0.907	0.784	0.904	0.000	-	0.829	0.771	0.778	0.000	-	0.807	0.962
Lights	439	123	0	-	562	184	45	0	-	229	36	378	0	-	414	1205
% Lights	97.8	99.2	-	-	98.1	99.5	95.7	-	-	98.7	97.3	97.2	<u>-</u>	-	97.2	97.9
Mediums	9	1	0	-	10	1	2	0	-	3	0	10	0	-	10	23
% Mediums	2.0	0.8	-	-	1.7	0.5	4.3	-	-	1.3	0.0	2.6	-	-	2.3	1.9
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	1	1	0	-	2	3
% Articulated Trucks	0.2	0.0	-	-	0.2	0.0	0.0	-	-	0.0	2.7	0.3	-	-	0.5	0.2
Bicycles on Crosswalk	-	-	-	1	-	i	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	1	<u>-</u>	-	-	-	-	-	<u>-</u>	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	<u>-</u>	0	-	-
% Pedestrians	-	-	-	0.0	-	ı	-	-	-	-	-	-	-	-	-	



Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)



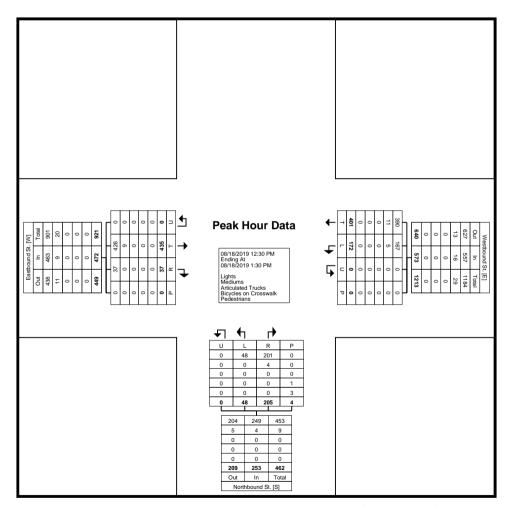
Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 8

Turning Movement Peak Hour Data (12:30 PM)

					i airiiri <u>g</u>	IVIOVCIII	CIIL I Ca	ik i lodi L	7aia (12							
			Westbound St.		J			Northbound St.	,	Í			Eastbound St.			
Start Time			Westbound					Northbound					Eastbound			
Start Time	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
12:30 PM	95	41	0	0	136	49	11	0	0	60	10	107	0	0	117	313
12:45 PM	95	37	0	0	132	44	15	0	3	59	10	118	0	0	128	319
1:00 PM	94	50	0	0	144	40	10	0	0	50	9	109	0	0	118	312
1:15 PM	117	44	0	0	161	72	12	0	1	84	8	101	0	0	109	354
Total	401	172	0	0	573	205	48	0	4	253	37	435	0	0	472	1298
Approach %	70.0	30.0	0.0	-	-	81.0	19.0	0.0	-	-	7.8	92.2	0.0	-	-	-
Total %	30.9	13.3	0.0	-	44.1	15.8	3.7	0.0	-	19.5	2.9	33.5	0.0	-	36.4	-
PHF	0.857	0.860	0.000	-	0.890	0.712	0.800	0.000	-	0.753	0.925	0.922	0.000	-	0.922	0.917
Lights	390	167	0	-	557	201	48	0	-	249	37	426	0	-	463	1269
% Lights	97.3	97.1	_	-	97.2	98.0	100.0	_	-	98.4	100.0	97.9	_	_	98.1	97.8
Mediums	11	5	0	-	16	4	0	0	-	4	0	9	0	-	9	29
% Mediums	2.7	2.9	-	-	2.8	2.0	0.0	-	-	1.6	0.0	2.1	-	-	1.9	2.2
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	i	-	-	1	-	ı	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	25.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-		3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	75.0	-	-	-	-	-	-	-



Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 9



Turning Movement Peak Hour Data Plot (12:30 PM)



Count Name: Icicle/US-2 Site Code: Start Date: 08/16/2019 Page No: 10



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 1

Turning Movement Data

							9		Julu							
			Southbound St.					Westbound St.					Eastbound St.			
0			Southbound					Westbound					Eastbound			
Start Time	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Thru	Left	U-Turn	Peds	App. Total	Int. Total
2:00 PM	67	36	0	2	103	30	150	0	0	180	175	58	0	3	233	516
2:15 PM	64	15	0	3	79	36	153	0	0	189	177	50	0	2	227	495
2:30 PM	49	24	0	4	73	24	137	0	0	161	138	67	0	4	205	439
2:45 PM	63	23	0	2	86	36	142	0	0	178	170	64	0	1	234	498
Hourly Total	243	98	0	11	341	126	582	0	0	708	660	239	0	10	899	1948
3:00 PM	65	27	0	0	92	27	144	0	0	171	199	55	0	3	254	517
3:15 PM	55	25	0	5	80	32	162	0	0	194	195	64	0	4	259	533
3:30 PM	60	26	0	2	86	31	171	0	0	202	189	65	0	0	254	542
3:45 PM	55	28	0	0	83	30	149	0	0	179	200	56	0	2	256	518
Hourly Total	235	106	0	7	341	120	626	0	0	746	783	240	0	9	1023	2110
4:00 PM	69	23	0	6	92	29	158	0	0	187	192	57	0	0	249	528
4:15 PM	62	34	0	5	96	18	150	0	1	168	179	73	0	0	252	516
4:30 PM	63	31	0	2	94	37	168	0	0	205	177	61	0	2	238	537
4:45 PM	64	30	0	2	94	32	154	0	0	186	172	65	0	2	237	517
Hourly Total	258	118	0	15	376	116	630	0	1	746	720	256	0	4	976	2098
*** BREAK ***	-	_	-	-	-	-	-		-	-		-		-		-
11:00 AM	65	45	0	2	110	23	133	0	0	156	178	50	0	0	228	494
11:15 AM	57	32	0	0	89	34	158	0	0	192	184	45	0	0	229	510
11:30 AM	74	29	0	0	103	21	129	0	0	150	161	33	0	1	194	447
11:45 AM	44	23	0	4	67	23	174	0	0	197	178	48	0	1	226	490
Hourly Total	240	129	0	6	369	101	594	0	0	695	701	176	0	2	877	1941
12:00 PM	44	25	0	2	69	31	146	0	0	177	164	45	0	0	209	455
12:15 PM	64	29	0	0	93	20	134	1	0	155	193	52	0	0	245	493
12:30 PM	50	29	0	0	79	24	138	1	0	163	182	33	0	0	215	457
12:45 PM	31	16	0	0	47	38	137	0	0	175	144	34	0	0	178	400
Hourly Total	189	99	0	2	288	113	555	2	0	670	683	164	0	0	847	1805
1:00 PM	61	21	0	0	82	27	117	0	0	144	169	53	0	4	222	448
1:15 PM	54	22	0	8	76	25	132	0	0	157	158	47	0	4	205	438
1:30 PM	41	31	. 0	2	72	24	143	0	0	167	185	46	. 0	0	231	470
1:45 PM	36	22	0	2	58	18	155	0	0	173	185	38	0	0	223	454
Hourly Total	192	96	0	12	288	94	547	0	0	641	697	184	0	8	881	1810
2:00 PM	0	0	. 0	0	0	0	0	0	0	0	0	0	. 0	0	0	0
Grand Total	1357	646	0	53	2003	670	3534	2	1	4206	4244	1259	0	33	5503	11712
Approach %	67.7	32.3	0.0	-	-	15.9	84.0	0.0	-	-	77.1	22.9	0.0	-	-	-
Total %	11.6	5.5	0.0	-	17.1	5.7	30.2	0.0	-	35.9	36.2	10.7	0.0	-	47.0	-
Lights	1327	629	. 0	-	1956	646	3468	2	-	4116	4167	1232	. 0	-	5399	11471

% Lights	97.8	97.4	-	-	97.7	96.4	98.1	100.0	-	97.9	98.2	97.9	-	-	98.1	97.9
Mediums	28	17	0	-	45	22	58	0	-	80	66	26	0	-	92	217
% Mediums	2.1	2.6	-	-	2.2	3.3	1.6	0.0	-	1.9	1.6	2.1	-	-	1.7	1.9
Articulated Trucks	2	0	0	-	2	2	8	0	-	10	11	1	0	-	12	24
% Articulated Trucks	0.1	0.0	-	-	0.1	0.3	0.2	0.0	-	0.2	0.3	0.1	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	1	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	3.8	-	-	-	-	100.0	-	-	-	-	9.1	-	-
Pedestrians	-	-	-	51	-	-	-	-	0	-	-	-	-	30	-	-
% Pedestrians	-	-	-	96.2	-	-	-	-	0.0	_	-	-	-	90.9	_	-



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 3

Southbound St. [N]
Out In Total 1929 2003 3932 1357 646 0 53 L U P 08/16/2019 2:00 PM Ending At 08/18/2019 2:15 PM Lights Mediums Articulated Trucks Bicycles on Crosswalk Pedestrians

Turning Movement Data Plot



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 4

Turning Movement Peak Hour Data (3:15 PM)

					ı anınış	J 1410 4 C11		ait i ioui i	Data (O	. 10 1 111						
			Southbound St.					Westbound St.					Eastbound St.			
Start Time			Southbound					Westbound					Eastbound			
Start Time	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Thru	Left	U-Turn	Peds	App. Total	Int. Total
3:15 PM	55	25	0	5	80	32	162	0	0	194	195	64	0	4	259	533
3:30 PM	60	26	0	2	86	31	171	0	0	202	189	65	0	0	254	542
3:45 PM	55	28	0	0	83	30	149	0	0	179	200	56	0	2	256	518
4:00 PM	69	23	0	6	92	29	158	0	0	187	192	57	0	0	249	528
Total	239	102	0	13	341	122	640	0	0	762	776	242	0	6	1018	2121
Approach %	70.1	29.9	0.0	-	-	16.0	84.0	0.0	-	-	76.2	23.8	0.0	-	-	-
Total %	11.3	4.8	0.0	_	16.1	5.8	30.2	0.0	-	35.9	36.6	11.4	0.0	_	48.0	-
PHF	0.866	0.911	0.000	-	0.927	0.953	0.936	0.000	-	0.943	0.970	0.931	0.000	-	0.983	0.978
Lights	235	99	0	-	334	117	627	0	-	744	766	233	0	-	999	2077
% Lights	98.3	97.1	-	-	97.9	95.9	98.0	-	-	97.6	98.7	96.3	-	-	98.1	97.9
Mediums	4	3	0	-	7	5	12	0	-	17	8	9	0	-	17	41
% Mediums	1.7	2.9	-	-	2.1	4.1	1.9	-	-	2.2	1.0	3.7	-	-	1.7	1.9
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	2	0	0	_	2	3
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.2	-	-	0.1	0.3	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	0	-	i	-	-	0	-	ı	-	-	0	-	-
% Bicycles on Crosswalk	-	_	-	0.0	-	1	<u>-</u>	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	13	-	-	-	-	0	-	-	-	-	6	-	-
% Pedestrians	-	-	-	100.0	-	-		-	-	-	-	-	-	100.0	-	-



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 5

	Southbound St. [N]	
Enstbound St. [W] Out In Total 862 989 1861 1 2 33 1 1 2 33 1 1 2 33 1 1 2 33 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Data By16/2019 3:15 PM Ending At 08/16/2019 4:15 PM Lights Mediums Alloydes on Crosswalk Pedestrians	Westbound Out In Out In 11 17 17 17 17 17 17 17 17 17 17 17 17 1

Turning Movement Peak Hour Data Plot (3:15 PM)



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

					running	Movern	ieni rea	K HOULL	vala (TI	LUU AIVI)						
			Southbound St.					Westbound St.					Eastbound St.			
Start Time			Southbound					Westbound					Eastbound			
Start Time	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Thru	Left	U-Turn	Peds	App. Total	Int. Total
11:00 AM	65	45	0	2	110	23	133	0	0	156	178	50	0	0	228	494
11:15 AM	57	32	0	0	89	34	158	0	0	192	184	45	0	0	229	510
11:30 AM	74	29	0	0	103	21	129	0	0	150	161	33	0	1	194	447
11:45 AM	44	23	0	4	67	23	174	0	0	197	178	48	0	1	226	490
Total	240	129	0	6	369	101	594	0	0	695	701	176	0	2	877	1941
Approach %	65.0	35.0	0.0	-	-	14.5	85.5	0.0	-	-	79.9	20.1	0.0	-	-	-
Total %	12.4	6.6	0.0	-	19.0	5.2	30.6	0.0	-	35.8	36.1	9.1	0.0	-	45.2	-
PHF	0.811	0.717	0.000	-	0.839	0.743	0.853	0.000	-	0.882	0.952	0.880	0.000	-	0.957	0.951
Lights	233	127	0	-	360	97	583	0	-	680	687	171	0	-	858	1898
% Lights	97.1	98.4	-	-	97.6	96.0	98.1	-	-	97.8	98.0	97.2	-	-	97.8	97.8
Mediums	7	2	0	-	9	4	11	0	-	15	12	4	0	-	16	40
% Mediums	2.9	1.6	-	-	2.4	4.0	1.9	-	-	2.2	1.7	2.3	-	-	1.8	2.1
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	2	1	0	-	3	3
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.3	0.6	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	50.0	-	-
Pedestrians	-	-		6	-	-	-	-	0	-	-	-		1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	50.0	-	-



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 7

	Southbound St. [N] Out In Total 268 360 628 8 9 17 1 0 1 0 0 0 0 277 369 646 233 127 0 0 7 2 0	
Eastboard St. [W]	Peak Hour Data OB/18/2019 11:00 AM Ending At OB/18/2019 12:00 PM Lights Mediums Articulated Trucks Bicycles on Crosswalk Pedestrians	Westbound: Out In 614 680 14 15 2 0 0 0 0 0 0 0 583 7 583 7 583 7 583 7 594

Turning Movement Peak Hour Data Plot (11:00 AM)



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 8

Turning Movement Peak Hour Data (1:00 PM)

					runni	j ivioveii	ICIILI C	ak i loui i	Jaia (i .	.00 i ivi <i>j</i>						
			Southbound St.					Westbound St.					Eastbound St.			
Otant Time			Southbound					Westbound					Eastbound			
Start Time	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Thru	Left	U-Turn	Peds	App. Total	Int. Total
1:00 PM	61	21	0	0	82	27	117	0	0	144	169	53	0	4	222	448
1:15 PM	54	22	0	8	76	25	132	0	0	157	158	47	0	4	205	438
1:30 PM	41	31	0	2	72	24	143	0	0	167	185	46	0	0	231	470
1:45 PM	36	22	0	2	58	18	155	0	0	173	185	38	0	0	223	454
Total	192	96	0	12	288	94	547	0	0	641	697	184	0	8	881	1810
Approach %	66.7	33.3	0.0	-	-	14.7	85.3	0.0	-	-	79.1	20.9	0.0	-	-	-
Total %	10.6	5.3	0.0	-	15.9	5.2	30.2	0.0	-	35.4	38.5	10.2	0.0	-	48.7	-
PHF	0.787	0.774	0.000	-	0.878	0.870	0.882	0.000	-	0.926	0.942	0.868	0.000	-	0.953	0.963
Lights	189	93	0	-	282	90	538	0	-	628	690	182	0	-	872	1782
% Lights	98.4	96.9	-	-	97.9	95.7	98.4	-	-	98.0	99.0	98.9	-	-	99.0	98.5
Mediums	2	3	0	-	5	4	9	0	-	13	6	2	0	-	8	26
% Mediums	1.0	3.1	-	-	1.7	4.3	1.6	-	-	2.0	0.9	1.1	-	-	0.9	1.4
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	1	0	0	-	1	2
% Articulated Trucks	0.5	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	12	-	-	-	-	0	-	-	-	-	8	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 9

	Southbound St. [N]	
Essibound St. [W] Out In Total 727 672 1599 11 1 1 2 0 0 0 0 739 681 14620 1 1 0 0 0 0	Peak Hour Data OB/18/2019 1:00 PM Ending At OB/18/2019 2:00 PM Lights Mediums Articulated Trucks Bicycles on Crosswalk Pedestrians	Westbound: Out In 783 628 9 13 1 0 0 0 0 0 793 628 1 1 1 0 0 0 0 0 793 641 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1

Turning Movement Peak Hour Data Plot (1:00 PM)



Count Name: Riverbend/US-2 Site Code: Start Date: 08/16/2019 Page No: 10



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 1

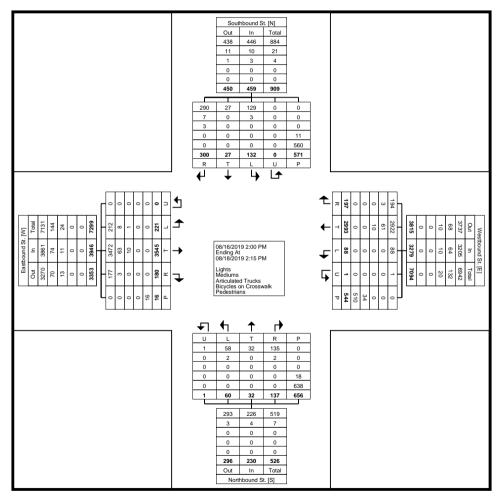
Turning Movement Data

	Southbound St. Westbound St. Southbound Westbound												Northbound St. Eastbound St. Northbound Eastbound														
			South	nbound					West	tbound					North	hbound			Eastbound								
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total		
2:00 PM	16	2	9	0	17	27	7	112	0	0	11	119	6	0	2	0	11		5	156	12	. 0	5	173	327		
2:15 PM	13	0	2	0	22	15	9	114	4	0	10	127	4	2	2	0	12	8	5	160	12	0	0	177	327		
2:30 PM	3	1	3	0	9	7	9	131	6	0	13	146	2	3	2	0	29	7	5	158	6	0	0	169	329		
2:45 PM	5	1	2	0	35		15	98	1	0	18	114	3	1	2	0	28	6	7	154	11	0	0	172	300		
Hourly Total	37	4	16	0	83	57	40	455	11	0	52	506	15	6	8	0	80	29	22	628	41	0	5	691	1283		
3:00 PM	10	1	7	0	21	18	6	125	2	0	39	133	3	7	2	0	18	12	6	133	7	0	3	146	309		
3:15 PM	7	1	8	0	32	16	12	131	5	0	23	148	7	1	2	0	18	10	9	141	5	0	0	155	329		
3:30 PM	9	1	5	0	20	15	7	132	5	0	18	144	3	1	1	0	10	5	8	151	27	0	0	186	350		
3:45 PM	9	2	2	0	22	13	9	126	3	0	24	138	5	3	0	0	17	8	9	135	3	0	0	147	306		
Hourly Total	35	5	22	0	95	62	34	514	15	0	104	563	18	12	5	0	63	35	32	560	42	0	3	634	1294		
4:00 PM	12	1	6	0	15	19	11	102	4	0	21	117	8	1	1	0	22	10	5	152	16	0	0	173	319		
4:15 PM	12	1	2	0	26	15	11	129	5	1	24	146	2	2	1	0	45	5	6	127	14	0	1	147	313		
4:30 PM	13	1	5	0	15	19	13	117	2	0	23	132	5	1	3	0	28	9	9	118	10	0	0	137	297		
4:45 PM	18	1	5	0	18	24	11	133	3	0	17	147	4	0	0	0	16	4	7	147	17	0	0	171	346		
Hourly Total	55	4	18	0	74	77	46	481	14	1	85	542	19	4	5	0	111	28	27	544	57	0	1	628	1275		
5:00 PM	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
*** BREAK ***	-	_	_	_	-	_	-	-	-	_	-	_	-		_		-	_	-	_	-	_	-	_	-		
Hourly Total	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
11:00 AM	16	3	10	0	13	29	4	140	8	0	40	152	12	0	1	0	23	13	10	150	5	0	0	165	359		
11:15 AM	17	2	5	0	22	24	3	136	4	0	34	143	11	0	0	0	42	11	8	140	10	0	0	158	336		
11:30 AM	13	2	2	0	14	17	5	119	6	0	29	130	9	0	2	1	61	12	11	152	5	0	5	168	327		
11:45 AM	16	3	11	0	17	30	6	127	4	0	25	137	2	1	0	0	29	3	3	158	6	0	0	167	337		
Hourly Total	62	10	28	0	66	100	18	522	22	0	128	562	34	1	3	1	155	39	32	600	26	0	5	658	1359		
12:00 PM	12	2	10	0	36	24	3	143	3	0	39	149	5	1	2	0	26	8	9	135	10	0	0	154	335		
12:15 PM	15	0	6	0	22	21	8	123	2	0	22	133	12	1	4	0	36	17	14	157	13	0	0	184	355		
12:30 PM	8	1	7	0	55	16	5	129	5	0	47	139	4	1	2	0	28	7	6	161	9	0	0	176	338		
12:45 PM	14	0	3	0	26	17	12	108	2	0	19	122	8	2	5	0	33	15	14	162	5	0	0	181	335		
Hourly Total	49	3	26	0	139	78	28	503	12	0	127	543	29	5	13	0	123	47	43	615	37	0	0	695	1363		
1:00 PM	18	0	5	0	41	23	7	121	4	0	15	132	6	2	5	0	26	13	2	147	2	0	2	151	319		
1:15 PM	19	0	5	0	30	24	7	134	4	0	9	145	5	0	6	0	35	11	3	157	7	0	0	167	347		
1:30 PM	13	1	4	0	20	18	12	139	3	0	14	154	9	0	6	0	36	15	8	151	4	0	0	163	350		
1:45 PM	9	0	8	0	23	17	4	124	3	0	10	131	2	2	9	0	27	13	11	142	5	0	0	158	319		
Hourly Total	59	1	22	0	114	82	30	518	14	0	48	562	22	4	26	0	124	52	24	597	18	0	2	639	1335		
2:00 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3		
Grand Total	300	27	132	0	571	459	197	2993	88	1	544	3279	137	32	60	1	656	230	180	3545	221	0	16	3946	7914		

Approach %	65.4	5.9	28.8	0.0	-	-	6.0	91.3	2.7	0.0	-	-	59.6	13.9	26.1	0.4	-	-	4.6	89.8	5.6	0.0	-	-	-
Total %	3.8	0.3	1.7	0.0	-	5.8	2.5	37.8	1.1	0.0	-	41.4	1.7	0.4	0.8	0.0	-	2.9	2.3	44.8	2.8	0.0	-	49.9	-
Lights	290	27	129	0	-	446	194	2922	88	1	-	3205	135	32	58	1	-	226	177	3472	212	0	-	3861	7738
% Lights	96.7	100.0	97.7	-	-	97.2	98.5	97.6	100.0	100.0	-	97.7	98.5	100.0	96.7	100.0	-	98.3	98.3	97.9	95.9	-	-	97.8	97.8
Mediums	7	0	3	0	-	10	3	61	0	0	-	64	2	0	2	0	-	4	3	63	8	0	-	74	152
% Mediums	2.3	0.0	2.3	-	-	2.2	1.5	2.0	0.0	0.0	-	2.0	1.5	0.0	3.3	0.0	-	1.7	1.7	1.8	3.6	-	-	1.9	1.9
Articulated Trucks	3	0	0	0	-	3	0	10	0	0	-	10	0	0	0	0	-	0	0	10	1	0	-	11	24
% Articulated Trucks	1.0	0.0	0.0	-	-	0.7	0.0	0.3	0.0	0.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.5	-	-	0.3	0.3
Bicycles on Crosswalk	-	-	-	-	11	-	-	-	-	-	34	-	-	-	-	-	18	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	1.9	-	-	-	-	-	6.3	-	-	-	-	-	2.7	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	560	-	-	-	-	-	510	-	-	_	-	_	638	_	-	-	_	-	16	_	-
% Pedestrians	-	-	-	-	98.1	-	-	-	-	-	93.8	-	-	-	-	-	97.3	-	-	-	-	-	100.0	-	-



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 3



Turning Movement Data Plot



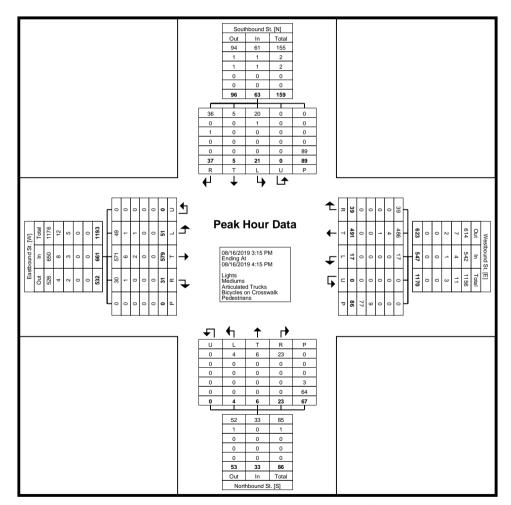
Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 4

Turning Movement Peak Hour Data (3:15 PM)

								Tun	iiiig iv	loven	ieni r	eak	noui	Dala	(3.13	LIMI)											
			Southb	ound St.					Westbo	ound St.					Northb	ound St.			Eastbound St.								
			South	nbound					West	bound					North	bound			Eastbound								
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total		
3:15 PM	7	1	8	0	32	16	12	131	5	0	23	148	7	1	2	0	18	10	9	141	5	0	0	155	329		
3:30 PM	9	1	5	0	20	15	7	132	5	0	18	144	3	1	1	0	10	5	8	151	27	0	0	186	350		
3:45 PM	9	2	2	0	22	13	9	126	3	0	24	138	5	3	0	0	17	8	9	135	3	0	0	147	306		
4:00 PM	12	1	6	0	15	19	11	102	4	0	21	117	8	1	1	0	22	10	5	152	16	0	0	173	319		
Total	37	5	21	0	89	63	39	491	17	0	86	547	23	6	4	0	67	33	31	579	51	0	0	661	1304		
Approach %	58.7	7.9	33.3	0.0	-	-	7.1	89.8	3.1	0.0	-	-	69.7	18.2	12.1	0.0	-	-	4.7	87.6	7.7	0.0	-	-	-		
Total %	2.8	0.4	1.6	0.0	-	4.8	3.0	37.7	1.3	0.0	-	41.9	1.8	0.5	0.3	0.0	-	2.5	2.4	44.4	3.9	0.0	-	50.7	-		
PHF	0.771	0.625	0.656	0.000		0.829	0.813	0.930	0.850	0.000	-	0.924	0.719	0.500	0.500	0.000	-	0.825	0.861	0.952	0.472	0.000	-	0.888	0.931		
Lights	36	5	20	0	-	61	39	486	17	0	-	542	23	6	4	0	-	33	30	571	49	0	-	650	1286		
% Lights	97.3	100.0	95.2	_	_	96.8	100.0	99.0	100.0	_	_	99.1	100.0	100.0	100.0	_	_	100.0	96.8	98.6	96.1	_	_	98.3	98.6		
Mediums	0	0	1	0		1	0	4	0	0	_	4	0	0	0	0		0	1	6	1	0	_	8	13		
% Mediums	0.0	0.0	4.8			1.6	0.0	0.8	0.0		_	0.7	0.0	0.0	0.0			0.0	3.2	1.0	2.0		_	1.2	1.0		
Articulated Trucks	1	0	0	0	_	1	0	1	0	0	-	1	0	0	0	0	_	0.0	0	2	1	0	-	3	5		
% Articulated Trucks	2.7	0.0	0.0	-	-	1.6	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.3	2.0	-	-	0.5	0.4		
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	0	-	-		
% Bicycles on Crosswalk	-	_	-	-	0.0	<u>-</u>	-	_	-	-	10.5	-	-	-	-	-	4.5	<u>-</u>	-	-	-	-	-	-	-		
Pedestrians	-	-	-	-	89	-	-	-	-	-	77	-	-	-	-	-	64	-	-	-	-	-	0	-	-		
% Pedestrians	-	-		-	100.0	-	-	-	-		89.5	-	-	-	-	-	95.5		-	-	-		-	-	-		



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 5



Turning Movement Peak Hour Data Plot (3:15 PM)



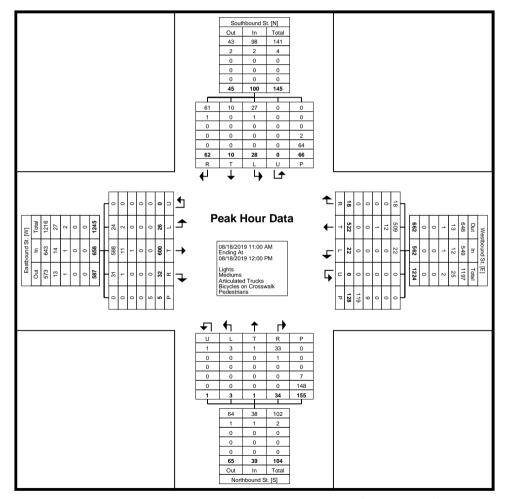
Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 6

Turning Movement Peak Hour Data (11:00 AM)

	1							Tulli	ii ig ivi	OVEIII	CIILI	canı	ioui L	Jaia (11.00	$I \cap IVI$									
			Southb	ound St.					Westbe	ound St.					Northb	ound St.					Eastbo	ound St.			
			South	hbound			l		West	bound					North	bound					East	bound			
Start Time	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
11:00 AM	16	3	10	0	13	29	4	140	8	0	40	152	12	0	1	0	23	13	10	150	5	0	0	165	359
11:15 AM	17	2	5	0	22	24	3	136	4	0	34	143	11	0	0	0	42	11	8	140	10	0	0	158	336
11:30 AM	13	2	2	0	14	17	5	119	6	0	29	130	9	0	2	1	61	12	11	152	5	0	5	168	327
11:45 AM	16	3	11	0	17	30	6	127	4	0	25	137	2	1	0	0	29	3	3	158	6	0	0	167	337
Total	62	10	28	0	66	100	18	522	22	0	128	562	34	1	3	1	155	39	32	600	26	0	5	658	1359
Approach %	62.0	10.0	28.0	0.0	-	-	3.2	92.9	3.9	0.0	-	-	87.2	2.6	7.7	2.6	-	-	4.9	91.2	4.0	0.0	-	-	-
Total %	4.6	0.7	2.1	0.0	-	7.4	1.3	38.4	1.6	0.0	-	41.4	2.5	0.1	0.2	0.1	-	2.9	2.4	44.2	1.9	0.0	-	48.4	-
PHF	0.912	0.833	0.636	0.000	-	0.833	0.750	0.932	0.688	0.000	-	0.924	0.708	0.250	0.375	0.250	-	0.750	0.727	0.949	0.650	0.000		0.979	0.946
Lights	61	10	27	0	-	98	18	509	22	0	-	549	33	1	3	1	-	38	31	588	24	0	-	643	1328
% Lights	98.4	100.0	96.4	_	_	98.0	100.0	97.5	100.0		-	97.7	97.1	100.0	100.0	100.0	_	97.4	96.9	98.0	92.3		_	97.7	97.7
Mediums	1	0	1	0		2	0	12	0	0	-	12	1	0	0	0		1	1	11	2	0		14	29
% Mediums	1.6	0.0	3.6			2.0	0.0	2.3	0.0		-	2.1	2.9	0.0	0.0	0.0		2.6	3.1	1.8	7.7	-		2.1	2.1
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	1	0	0		1	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	9	-	-	-	-	-	7	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	3.0	-	-	-	-	<u>-</u>	7.0	-	-	-	-	-	4.5	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	64	_	-	-	-	-	119	-	-	-	-	-	148	-	-	-	-	-	5	-	-
1 Cacotilatio																									
% Pedestrians	-			_	97.0	_	_	_		_	93.0	_	_	_			95.5	_	-	_			100.0		_



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 8

Turning Movement Peak Hour Data (12:00 PM)

| | | | | | | | I UIII

 | _ | | CIICI | cani
 | ioui L | Jaia (| | , |
 | | ı | | |
 | | | 1 |
|-------|---|--|--|--|--|---
--
--
--
--|--|--|---|---
---	--	---	---
--	--	--	---
		Southb	ound St.

 | Westbo | ound St. | |
 | | | Northbo | ound St. |
 | | | | Eastbo | und St.
 | | | |
| | | South | bound | | | |

 | West | bound | |
 | | | North | bound |
 | | | | Easth | oound
 | | | |
| Right | Thru | Left | U-Turn | Peds | App.
Total | Right | Thru

 | Left | U-Turn | Peds | App.
Total
 | Right | Thru | Left | U-Turn | Peds
 | App.
Total | Right | Thru | Left | U-Turn
 | Peds | App.
Total | Int. Total |
| 12 | 2 | 10 | 0 | 36 | 24 | 3 | 143

 | 3 | 0 | 39 | 149
 | 5 | 1 | 2 | 0 | 26
 | 8 | 9 | 135 | 10 | 0
 | 0 | 154 | 335 |
| 15 | 0 | 6 | 0 | 22 | 21 | 8 | 123

 | 2 | 0 | 22 | 133
 | 12 | 1 | 4 | 0 | 36
 | 17 | 14 | 157 | 13 | 0
 | 0 | 184 | 355 |
| 8 | 1 | 7 | 0 | 55 | 16 | 5 | 129

 | 5 | 0 | 47 | 139
 | 4 | 1 | 2 | 0 | 28
 | 7 | 6 | 161 | 9 | 0
 | 0 | 176 | 338 |
| 14 | 0 | 3 | 0 | 26 | 17 | 12 | 108

 | 2 | 0 | 19 | 122
 | 8 | 2 | 5 | 0 | 33
 | 15 | 14 | 162 | 5 | 0
 | 0 | 181 | 335 |
| 49 | 3 | 26 | 0 | 139 | 78 | 28 | 503

 | 12 | 0 | 127 | 543
 | 29 | 5 | 13 | 0 | 123
 | 47 | 43 | 615 | 37 | 0
 | 0 | 695 | 1363 |
| 62.8 | 3.8 | 33.3 | 0.0 | - | - | 5.2 | 92.6

 | 2.2 | 0.0 | - | -
 | 61.7 | 10.6 | 27.7 | 0.0 | -
 | - | 6.2 | 88.5 | 5.3 | 0.0
 | - | - | - |
| 3.6 | 0.2 | 1.9 | 0.0 | - | 5.7 | 2.1 | 36.9

 | 0.9 | 0.0 | - | 39.8
 | 2.1 | 0.4 | 1.0 | 0.0 | -
 | 3.4 | 3.2 | 45.1 | 2.7 | 0.0
 | - | 51.0 | - |
| 0.817 | 0.375 | 0.650 | 0.000 | - | 0.813 | 0.583 | 0.879

 | 0.600 | 0.000 | - | 0.911
 | 0.604 | 0.625 | 0.650 | 0.000 | -
 | 0.691 | 0.768 | 0.949 | 0.712 | 0.000
 | - | 0.944 | 0.960 |
| 48 | 3 | 26 | 0 | - | 77 | 28 | 494

 | 12 | 0 | - | 534
 | 29 | 5 | 12 | 0 | -
 | 46 | 42 | 602 | 36 | 0
 | - | 680 | 1337 |
| 98.0 | 100.0 | 100.0 | - | - | 98.7 | 100.0 | 98.2

 | 100.0 | - | - | 98.3
 | 100.0 | 100.0 | 92.3 | - | -
 | 97.9 | 97.7 | 97.9 | 97.3 | -
 | - | 97.8 | 98.1 |
| 1 | 0 | 0 | 0 | - | 1 | 0 | 9

 | 0 | 0 | - | 9
 | 0 | 0 | 1 | 0 | -
 | 1 | 1 | 12 | 1 | 0
 | - | 14 | 25 |
| 2.0 | 0.0 | 0.0 | - | - | 1.3 | 0.0 | 1.8

 | 0.0 | - | - | 1.7
 | 0.0 | 0.0 | 7.7 | - | -
 | 2.1 | 2.3 | 2.0 | 2.7 | -
 | - | 2.0 | 1.8 |
| 0 | 0 | 0 | 0 | - | 0 | 0 | 0

 | 0 | 0 | - | 0
 | 0 | 0 | 0 | 0 | -
 | 0 | 0 | 1 | 0 | 0
 | - | 1 | 1 |
| 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.0

 | 0.0 | - | - | 0.0
 | 0.0 | 0.0 | 0.0 | - | -
 | 0.0 | 0.0 | 0.2 | 0.0 | -
 | - | 0.1 | 0.1 |
| - | - | - | - | 3 | - | - | -

 | - | - | 9 | -
 | - | - | - | - | 7
 | - | - | - | - | -
 | 0 | - | - |
| - | - | - | - | 2.2 | - | - | -

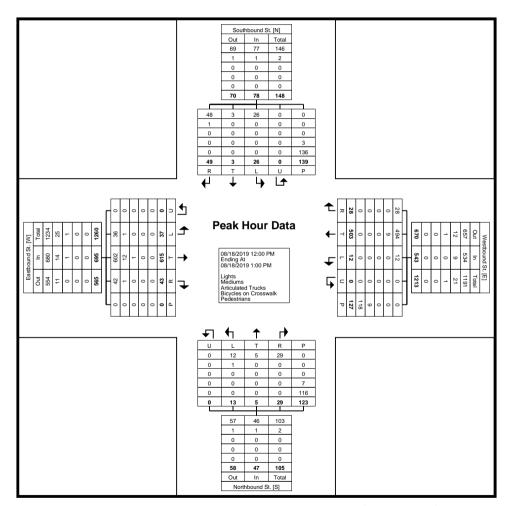
 | - | - | 7.1 | -
 | - | - | - | - | 5.7
 | - | - | - | - | -
 | - | - | - |
| | _ | | | 136 | | |

 | _ | _ | 118 | -
 | _ | | | _ | 116
 | - | _ | _ | _ | -
 | 0 | - | _ |
| | | | | 130 | | _ |

 | | | 110 |
 | _ | | | | 110
 | | | | | | | | | | | | | | | | | | | | | | | | | |
 | 0 | | |
| (| 12
15
8
14
49
62.8
3.6
0.817
48
98.0
1
2.0 | 12 2
15 0
8 1
14 0
49 3
62.8 3.8
3.6 0.2
0.817 0.375
48 3
98.0 100.0
1 0
2.0 0.0
0 0
0 0
0 0.0 | South Right Thru Left 12 2 10 15 0 6 8 1 7 14 0 3 49 3 26 62.8 3.8 33.3 3.6 0.2 1.9 0.817 0.375 0.650 48 3 26 98.0 100.0 100.0 1 0 0 2.0 0.0 0.0 0 0 0 0 0 0 | 12 2 10 0 15 0 6 0 8 1 7 0 14 0 3 0 49 3 26 0 62.8 3.8 33.3 0.0 3.6 0.2 1.9 0.0 0.817 0.375 0.650 0.000 48 3 26 0 98.0 100.0 100.0 - 1 0 0 0 2.0 0.0 0.0 - 0 0 0 0 0.0 0.0 0.0 | Right Thru Left U-Turn Peds 12 2 10 0 36 15 0 6 0 22 8 1 7 0 55 14 0 3 0 26 49 3 26 0 139 62.8 3.8 33.3 0.0 - 3.6 0.2 1.9 0.0 - 48 3 26 0 0 48 3 26 0 - 98.0 100.0 100.0 - - 1 0 0 0 - 2.0 0.0 100.0 - - 0 0 0 - - 0.0 0 0 - - 2.0 0.0 0.0 - - 0.0 0 0 - - 0.0 | Southbound Right Thru Left U-Turn Peds App. Total 12 2 10 0 36 24 15 0 6 0 22 21 8 1 7 0 55 16 14 0 3 0 26 17 49 3 26 0 139 78 62.8 3.8 33.3 0.0 - - - 3.6 0.2 1.9 0.0 - 5.7 0.817 0.375 0.650 0.000 - 0.813 48 3 26 0 - 77 98.0 100.0 100.0 - - 98.7 1 0 0 0 - 1 2.0 0.0 0.0 - 1 2.0 0.0 0 - 0 0.0 | Southbound Right Thru Left U-Turn Peds App. Total Total App. Total Right 12 2 10 0 36 24 3 15 0 6 0 22 21 8 8 1 7 0 55 16 5 14 0 3 0 26 17 12 49 3 26 0 139 78 28 62.8 3.8 33.3 0.0 - - 5.2 3.6 0.2 1.9 0.0 - 5.7 2.1 0.817 0.375 0.650 0.000 - 0.813 0.583 48 3 26 0 - 77 28 98.0 100.0 100.0 - - 98.7 100.0 1 0 0 0 - 1.3 0.0 <t< td=""><td> Southbound St. Southbound St. Southbound </td><td> Southbound St. Southbound St. Southbound Southbou</td><td> Southbound St. Southbound St. Southbound St. Westbound St. Westboun</td><td> Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound Stendard St. Westbound St. Westbound St.</td><td> Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbo</td><td> Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Southbound Steach State Southbou</td><td> Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound Step Westb</td><td> Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. </td><td> Northorn Northern Northern</td><td> South S</td><td> South-burd St. Sout</td><td> North-burd St. South-burd St. Sout</td><td> South S</td><td> South-bound St. South-bound St. Westbound St. Westboun</td><td> Right Thru Left U-Turn Peds App Right Thru Left U-Turn Thru Left U-Turn Thru U-Turn Thru U-Turn Thru U-Turn /td><td> South-stand Stand Stand</td><td> North</td></t<> | Southbound St. Southbound St. Southbound | Southbound St. Southbound St. Southbound Southbou | Southbound St. Southbound St. Southbound St. Westbound St. Westboun | Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound Stendard St. Westbound St. Westbound St. | Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbo | Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Southbound Steach State Southbou | Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound Step Westb | Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Westbound St. Southbound St. Southbound St. Southbound St. Southbound St. Southbound St. Westbound St. Westbound St. Southbound St. | Northorn Northern Northern | South S | South-burd St. Sout | North-burd St. South-burd St. Sout | South S | South-bound St. South-bound St. Westbound St. Westboun | Right Thru Left U-Turn Peds App Right Thru Left U-Turn Thru Left U-Turn Thru U-Turn Thru U-Turn Thru U-Turn U-Turn | South-stand Stand Stand | North |



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 9



Turning Movement Peak Hour Data Plot (12:00 PM)



Count Name: Ski Hill/US-2 Site Code: Start Date: 08/16/2019 Page No: 10







FEHR / PEERS





RICK WILLIAMS CONSULTING Parking & Transportation

