Ashland Downtown Revitalization Plan

City of Ashland; ODOT

Technical Memorandum 2:
Existing and Future Conditions of the Downtown Couplet

October 16, 2019

Contents

1. Introduction

This memo presents an evaluation of how downtown Ashland's streets operate today and, in the future, if we do not make changes or improvements. It summarizes the Oregon Department of Transportation (ODOT)'s Ashland Downtown Revitalization Plan Technical Memorandum 2 – Existing and Future No Build Conditions. The City of Ashland, along with ODOT, are in the early stages of a planning initiative called the Ashland Downtown Revitalization Plan. The overarching goal is to create an affordable, balanced, safe, and functional multi-use transportation system for downtown Ashland, notably along the Main Street and Lithia Way couplet. Recommendations from this planning process will be incorporated into the city's Transportation System Plan (TSP) and the prioritized list of fundable transportation improvements will be added to the slate of near-term projects.

For this memo regarding existing and future conditions without any improvements ("No Build"), the main areas of focus are the Main Street and Lithia Way couplet, Oak Street, and Pioneer Street.

1.1 Background and Study Area

The purpose of the Ashland Downtown Revitalization Plan ("the Plan") is **to identify and prioritize a series of fundable improvements** to improve the sense of community and place while creating an affordable, safe, and functional multi-use transportation network in the downtown core. Downtown Ashland is auto-dominated, so a major objective will be to identity opportunities to shift the transportation network from auto-dominated into a balanced system that provides improved connections and better incorporates other modes of transportation, like taking transit, walking, getting around using a mobility device such as a wheelchair (often called "rolling"), or bicycling. The Plan will build on past planning efforts, perform new analysis, and work with the community to identify a clear vision and implementable projects to improve downtown.

Downtown Ashland is a thriving mixed-use commercial downtown with a small mix of residential developments that serve the local community and visitors. Neighborhoods adjacent to downtown are walkable and well connected to downtown, as well as the nearby Railroad District, which is a mixed-use area of commercial and residential, roughly bound by the railroad tracks to the north, Lithia Way and E Main Street to the south, and Ninth Street Alley to the east. The study area includes the downtown couplet and surrounding streets. The study area is bound by B Street to the north, E. Main Street on the east, Hargadine Street on the south, and Helman Street to the north (see **Figure 1**).

Street Designations

Main Street and Lithia Way (which combine into Siskiyou Boulevard in the southeast end of downtown) are both designated as State Route OR99, which means that the Oregon Department of Transportation (ODOT) owns and operates the roadway, with coordination as required from the City of Ashland. The section of Main Street from the western study area boundary to Third Street, and Lithia Way from Third to Helman Street are under ODOT jurisdiction as part of the district-level #63 Rogue Valley Highway. The remaining sections of Main Street, Lithia Way and Siskiyou Boulevard in the study area are functionally classified as a City of Ashland (boulevard) principal arterial. East Main Street is classified as a minor arterial ("boulevard"). Helman, Church, Granite, North Main (plaza area), Oak, and B Streets along with Winburn Way are classified as collectors ("avenue"). See Table 1 below for details on the City's street classifications. Speeds in the study area are generally statutory limits: 15 mph for alleys, 20 mph for downtown (the Main/Lithia couplet) and 25 mph for the surrounding residential areas.

Table 1: Ashland Street Functional Classifications

Functional Class	*Description*
Boulevard (arterial) 8,000 to 30,000 average daily traffic	Provide access to major urban activity centers for pedestrians, bicyclists, transit users and motor vehicle users, and provide connections to regional traffic ways such as I-5.
Avenue (major collector) 3,000 to 10,000 average daily traffic	Provide concentrated pedestrian, bicycle, and motor vehicle access from boulevards to neighborhoods and to neighborhood activity centers.
Neighborhood Collector (minor collector) 1,500 to 5,000 average daily traffic	Distribute traffic from boulevards or avenues to neighborhood streets.
Neighborhood Street (local street) Less than 1,500 average daily traffic	Provide access to residential and neighborhood commercial areas.
Alley	A semi-public neighborhood space that provides access to the rear of property; the alley eliminates

	the need for front yard driveways and provides the opportunity for a more positive front yard streetscape.
Multiuse Path	Off-street facilities used primarily for walking and bicycling; these paths can be relatively short connections between neighborhoods or longer paths adjacent to rivers, creeks, railroad tracks, and open space.

Figure 1. Study Area

2. Identifying Safety Issues: A Look at Past Collisions in Downtown

The purpose of the crash analysis is to document existing safety issues in the study area that might be further impacted by future projected traffic. Understanding the number of crashes, crash types, and causes for crashes are critical to developing treatments that will improve the current and future transportation system for all users. Through a crash analysis, the project team and community can easily identify locations that have a high number of crashes. In more urban settings like downtown Ashland, crashes are typically most frequent at intersections, and often have an increased chance to involve vulnerable road users, such as people walking, people using a wheelchair, and people riding bikes. The crash analysis is based off the officially reported crashes submitted to ODOT's Crash Analysis and Reporting Unit for the study area roadways from 2013 to 2017.

The sections below will provide an overview of all crashes in the study area, types of crashes, and look closely at a few key locations for the project.

2.1 Crash Types

The crashes in the project area are typical for an urban area with most crashes being rear-end, turning (from streets or accesses) or angle types. There is also significant amount of sideswipe-overtaking crashes. Below are basic definitions of crash types, and **Figure 2** provides a visual diagram of crash types.

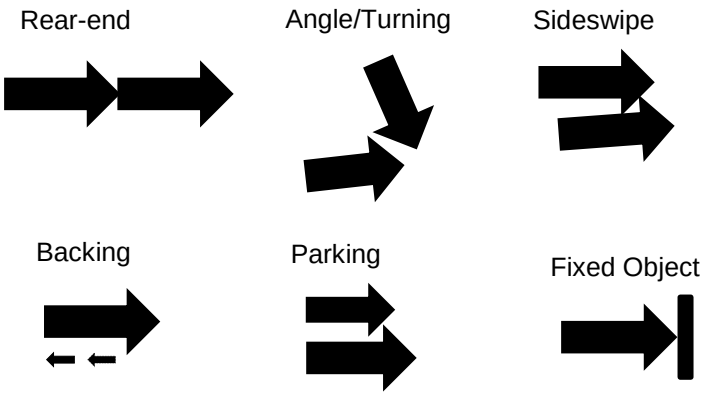
- **Rear-end collisions** are generally caused by drivers following too close or traveling too fast for conditions or being inattentive and often colliding into the last vehicle in the queue stopped at an intersection.
- **Turning and angle collisions** are caused by drivers taking improper gaps in traffic and failing to yield the right-of-way.
- Drivers failing to check blind spots when changing lanes or making sudden lane changes in heavy traffic usually cause **sideswipe crashes**.

Other types of collisions happen less frequently, such as backing, parking, and fixed object crashes. These are often caused by inattention or poor visibility and generally do not have a concentrated pattern in any one area.

- **Backing crashes** are usually caused by a lack of visibility due to parked cars or street-side vegetation.
- **Parking crashes** are usually failing to check for traffic when leaving a parking space.

- **Fixed object crashes** are typically run-off-the-road crashes that may occur when the driver is driving too fast for conditions or impaired/distracted.

Figure 2: Collision Types



Severity Types

Below are the three main injury severity categories. For the purposes of this memo, minor injuries and possible injuries are counted together as minor injuries.

- **Serious Injury (incapacitating injury):** An injury that results in broken limbs, significant burns, major lacerations, unconsciousness, or paralysis.
- **Minor Injury (non-incapacitating injury):** An injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on the skin surface with minimal bleeding and no exposure of deeper tissue).
- **Possible Injury (complaint of Pain):** An injury reported or claimed which is not a fatal, suspected serious, or suspected minor injury. Examples include momentary loss of consciousness, claim of injury, limping, complaint of pain or nausea.

Crashes involving pedestrians and bicyclists

Anytime pedestrians are involved in a collision, it's cause for concern. Crashes involving pedestrians are flagged during data collection for special consideration. Pedestrian crashes are also isolated in the crash analysis if a pedestrian was

struck by a vehicle traveling straight or turning. Additional crashes were coded to be “pedestrian-related” if a pedestrian was involved but not hit. These are typically rear-end collisions where a vehicle stopped to allow a pedestrian to cross a street.

Bike crashes are coded as turning movement crashes as most bike crashes occur when a driver fails to check their blind spots for parallel-moving bicyclists when turning into a street or driveway.

Summary of crashes in downtown Ashland

The following sections show the summarized crash analysis statistics for OR99 and the key local streets in the study area. In total, there were 164 crashes in the study area from 2013 to 2017. Most crashes that occurred were property damage only crashes (for example, a vehicle hit a fence, tree, or another vehicle), followed by minor injury crashes (for example, two vehicles collide, and a person is able to easily walk or drive away). While property damage only crashes were the most common crash type, serious and minor injury crashes also occurred throughout the study area. Serious injuries from crashes include bone fractures, whereas minor injuries include soreness, cuts, and complaints of pain.

One fatal crash occurred in 2012 when a driver struck and killed a pedestrian crossing the street in the crosswalk at Main Street and Water Street. Because this crash occurred before 2013, it is not captured in the most recent five-year data used for this memo, but still critically important to understanding crashes within the study area.

For the entire study area between 2013 and 2017:

- There were no reported fatal or severe injury crashes;
- Over 80% of the crashes occurred in dry daylight conditions;
- About 10% of the crashes occurred in wet or winter conditions;
- 13% of the crashes occurred at night;
- About 60% of the crashes occurred at intersections, alleys, or driveways;
    - The biggest causes were failure to yield the right-of-way or following too closely which correlates to the 40% angle/turning/parking/pedestrian collisions and 40% rear-end collisions in the study area.
    - Causes such as improper lane changing or turning were evident in about 20% of the crashes.
- Driving too fast for conditions or speeding does not appear to be a significant reported cause in the overall study area crashes; however,

operating speeds are over the 20-mph limit on both Main Street and Lithia Way, which may impact overall severity levels.

Figure 3 shows property damage only crashes in the study area

Figure 4 shows minor injury crashes in the study area

Figure 5 shows moderate injury crashes in the study area

Figure 6 shows crashes involving pedestrians in the study area

Figure 7 shows crashes involving cyclists in the study area.

Figure 8 shows turning/angle crashes in the study area.

Figure 9 shows rear-end crashes in the study area.

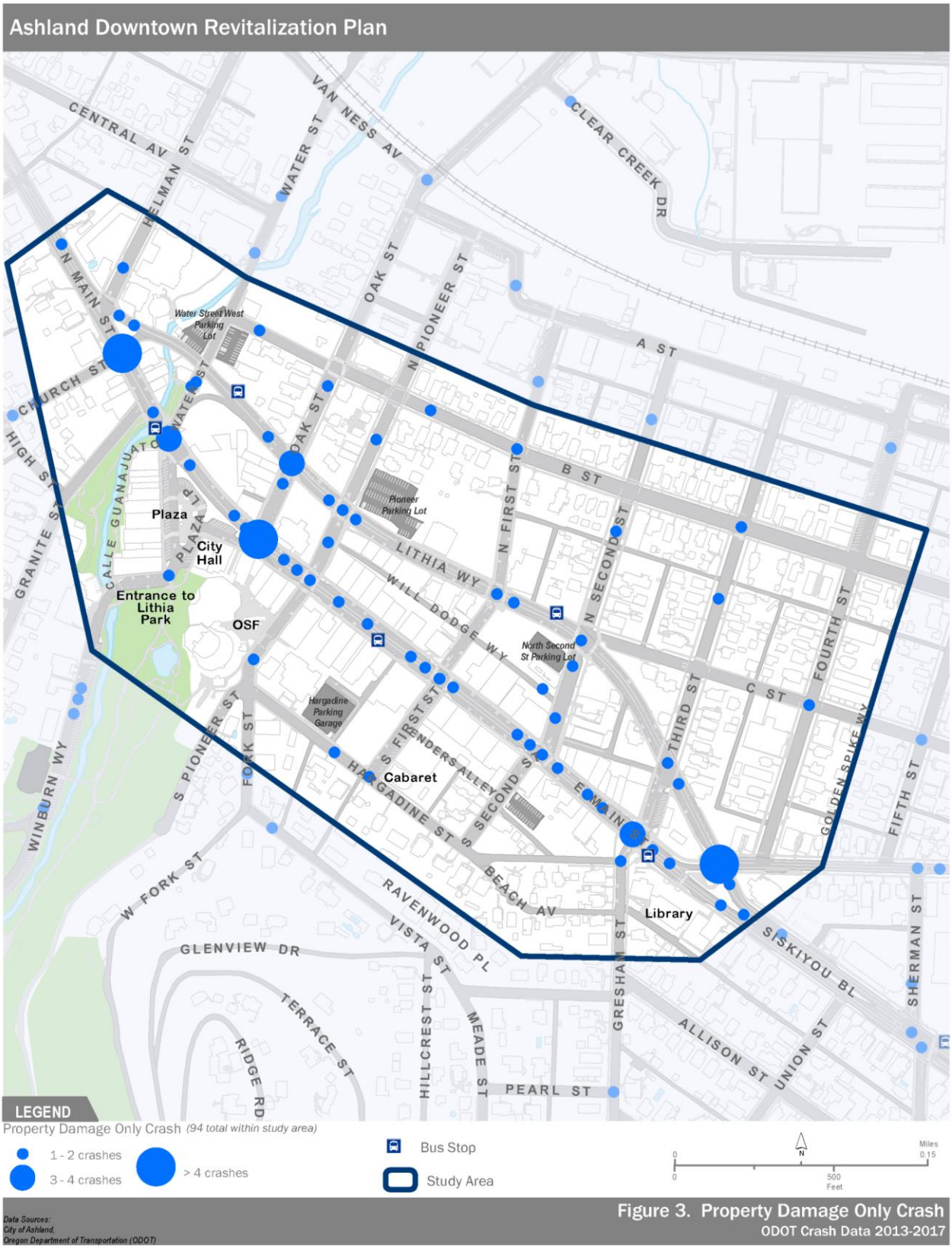


Figure 3. Property Damage Only Crash
ODOT Crash Data 2013-2017

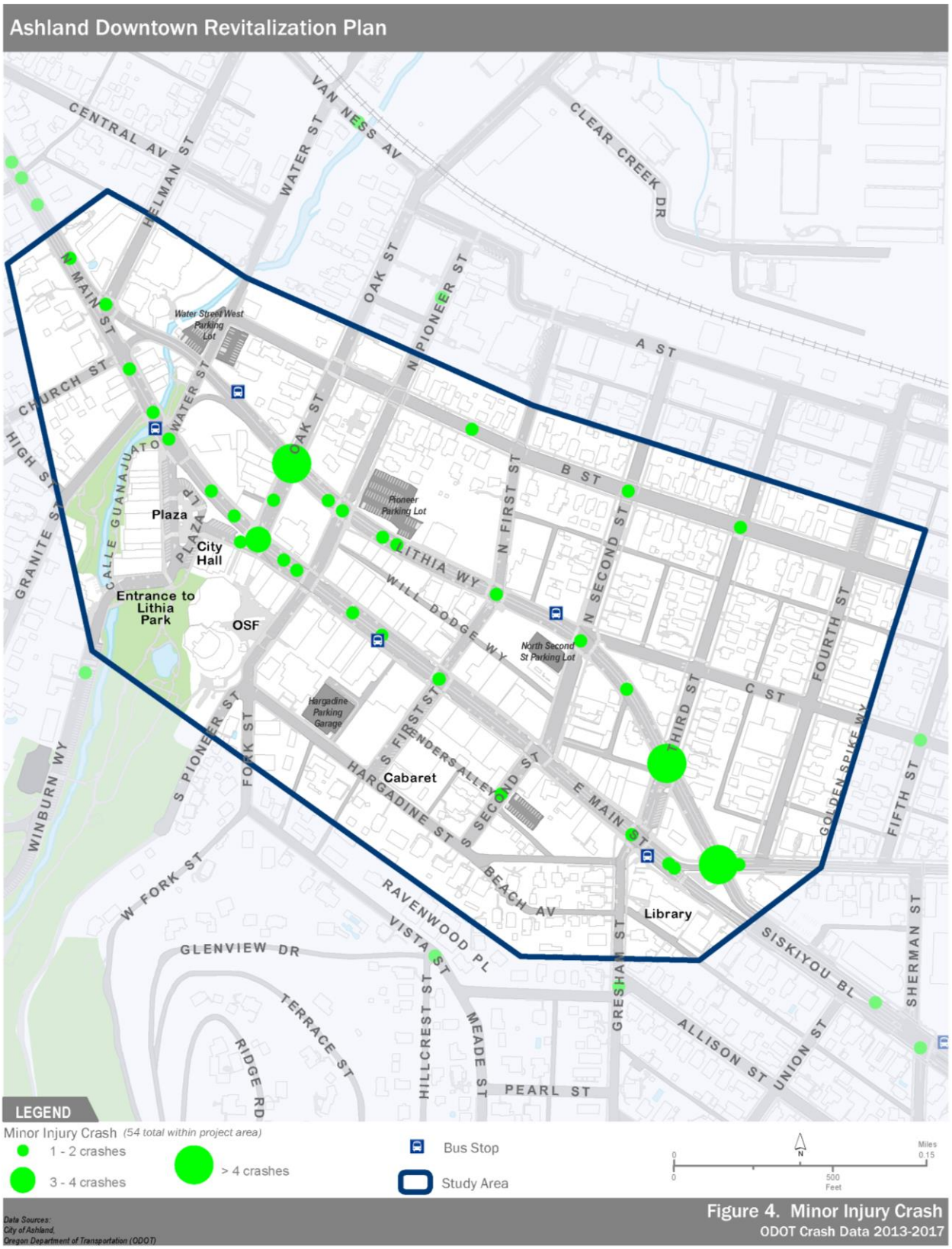
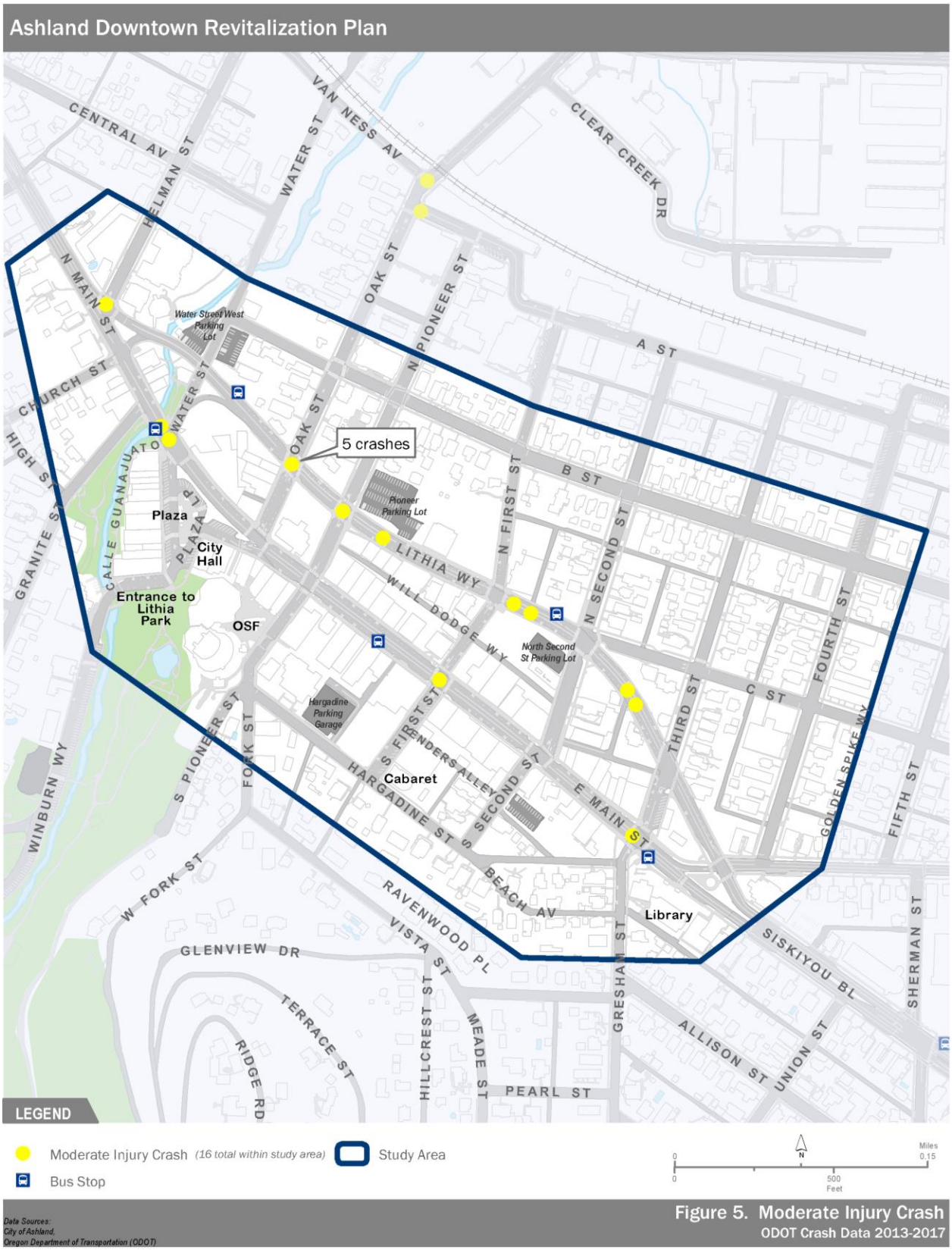


Figure 4. Minor Injury Crash
ODOT Crash Data 2013-2017



Data Sources:
City of Ashland,
Oregon Department of Transportation (ODOT)

Figure 5. Moderate Injury Crash
ODOT Crash Data 2013-2017

Figure 6. Pedestrian Involved Crash
ODOT Crash Data 2013-2017

Figure 7. Bicycle Involved Crash
ODOT Crash Data 2013-2017

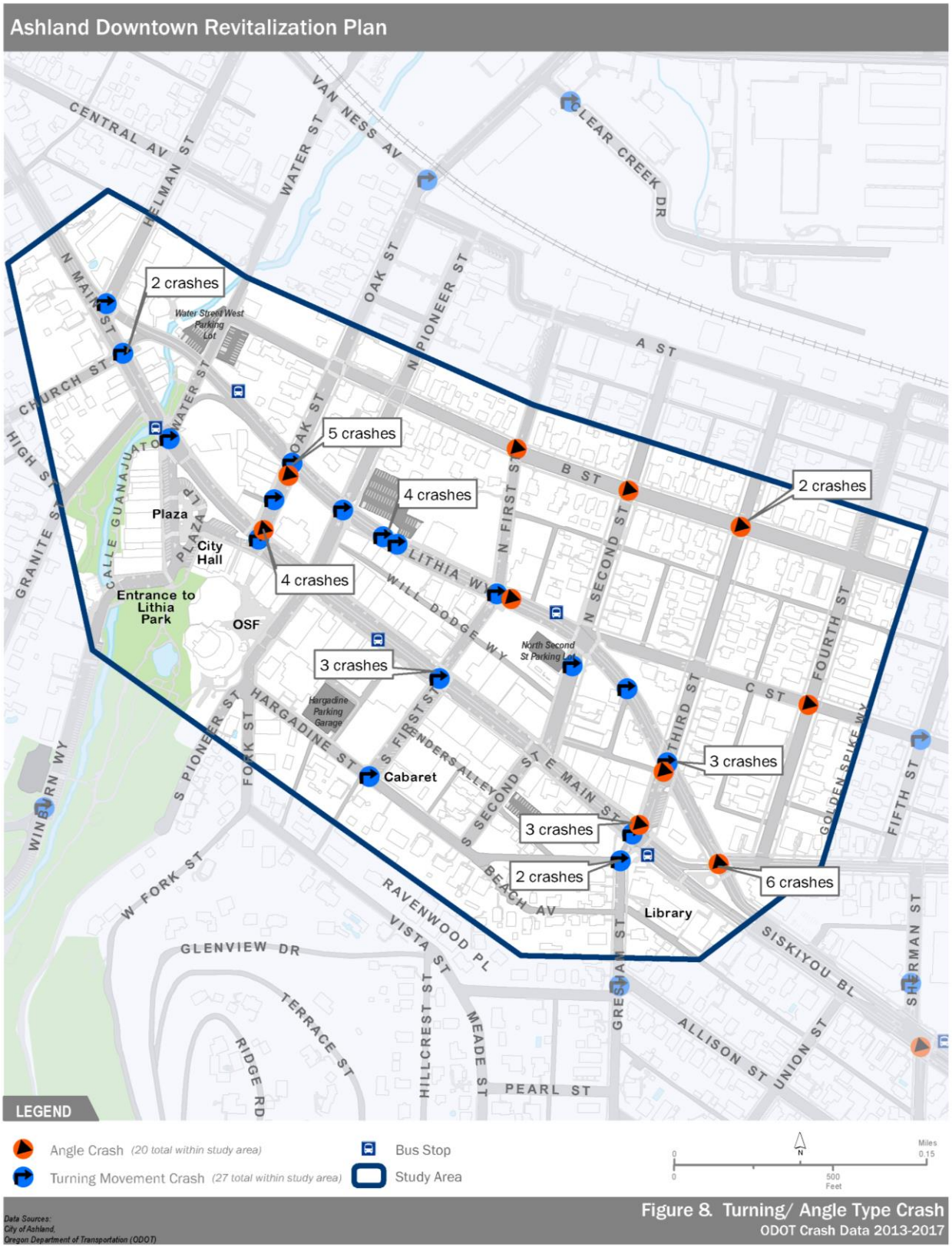


Figure 8. Turning/ Angle Type Crash
ODOT Crash Data 2013-2017

Figure 9. Rear-End Crash
ODOT Crash Data 2013-2017

2.2 Summary of Collisions on Main Street

There were 67 crashes on Main Street between 2013 and 2017, and most crashes occurred under dry surface conditions and during daylight hours. The posted speed limit is 20 mph on Main Street in the study area, but average speeds are in the 21-24 mph range for most of the day, reaching as high as 27 mph under free-flow conditions in the early morning.

About half of all crashes (33 of 67) were rear-end collisions caused by vehicles following too closely and failing to stop soon enough when intersections begin to back up or when vehicles stop to let a pedestrian across at a crosswalk. The high amounts of these two crash types and a low number of angle, turning and direct pedestrian crashes result in a low number of serious injury crashes. However, even with a low number of serious injury crashes, 15% of all crashes resulted in serious injury and 85% resulted in minor injury; 18% of all crashes in this location involved pedestrians/bicycles.

- **Intersection-related Crashes:** A large majority of the total crashes along Main Street were intersection-related.
    - 50% intersection related crashes
        - 22% at Oak Street
        - 20% at Water Street
        - 16% at First Street
        - 10% at Pioneer Street

2.3 Summary of Collisions on Lithia Way

There were 63 crashes on Lithia Way between 2013 and 2017, and most crashes occurred under dry surface conditions and during daylight hours. The posted speed limit is 20 mph on Lithia Way in the study area, but average speeds are in the 23-25 mph range for most of the day, reaching as high as 28 mph under free-flow conditions in the early morning.

Over a third of all crashes (25 of 63) were rear-end collisions caused by vehicles following too closely and failing to stop soon enough when intersections begin to back up or when vehicles stop to let a pedestrian across at a crosswalk. Angle and turning crashes account for over another third of the total number of crashes and are one of the main reasons that the injury rate is over half of the crashes, with 31% resulting in serious injury crashes and 69% resulting in minor injury crashes.

Lithia Way has more injury crashes than Main Street, with twice as many serious injury crashes. A contributing factor in the injury severity may be the overall

operating speed of the roadway. This is slightly higher than on Main Street, which makes sense as Lithia Way has more of an open feeling rather than the denser conditions experienced on Main Street.

- **Pedestrian and Bicycle Related Crashes:** The higher number of pedestrians and bike crashes (30% of all crashes) have over half of them being serious injuries. Almost half of the turning crashes are bicycle right-hook crashes where drivers turn in front of bicyclists in the bike lane.

- **Intersection-related Crashes:** Almost three-quarters of the intersection-related crashes on Lithia Way are located at three intersections: East Main at the Fire Station, Third, and Oak Streets.
    - 78% intersection related crashes:
        - 33% at Oak Street
        - 24% at East Main Street
        - 14% at Third Street

2.4 Summary of Collisions on B Street

There were seven crashes on B Street between 2013 and 2017, making it the local street with the highest number of crashes, other than Lithia Way and Main Street. About 40% were injury angle crashes where drivers failed to see an oncoming vehicle after stopping in three of the four cases; the fourth was caused by a driver disregarding the stop sign. The remainder of crashes were property-damage only and backing crashes, which all had a similar theme from backing out of alleys near Water, Pioneer, and First Streets. Except for the running the stop sign crash, all the crashes indicate potential visibility issues with parked cars, vegetation, or stop bar placement, which makes it hard to see oncoming vehicles. The crash trend has been stable over the analysis period.

Along B Street, there were seven total reported crashes between 2013 and 2017:

- 42% minor injury angle crashes
- 42% Backing crashes caused by lack of visibility from alleys
- 86% of total crashes have visibility issues (caused by parked cars or vegetation)
- 57% of crashes are intersection-related
    - 25% at First Street
    - 25% at Second Street
    - 50% at Third Street

2.5 Summary of Collisions on Second Street

Four crashes were recorded on B Street between 2013 and 2017. B Street was identified as the local street with the second highest number of crashes, other than Lithia Way and Main Street. All were property damage-only crashes meaning a vehicle might have hit a fence, tree, or damaged another vehicle. One was an injury crash resulting from failing to yield when leaving an alley near C Street. Half of the crashes resulted from parking movements when drivers failed to yield to oncoming vehicles when trying to park or move out of a parking space. Both the parking and the turning crash may indicate visibility issues with oncoming vehicles because of other parked vehicles and vegetation. The crash trend has been stable over the analysis period.

Along Second Street, there were four total reported crashes between 2013 and 2017:

- 75% were property damage only crashes
- 75% of crashes involved potential visibility issues
- 50% parking crashes

2.6 Crash Rate Screening

Roadway Segment Analysis

One way to determine roadway safety is to use crash rates. Crash rates are a measure of the number of crashes in relation to the amount of traffic volume served. They are useful in identifying and prioritizing problematic locations where safety improvements could make a big difference for the community. To do this, ODOT uses an indexing method (the Safety Priority Index System, or “SPIS”) to identify potential safety issues. This safety priority tool compares the number of crashes on Oregon’s entire road network and gives each road segment a score depending on number of crashes, how often crashes occur, and how severe crashes are. The higher the score the more safety improvements are needed. The project team reviewed the “top priority” list from 2013-2017 and found that there were no top safety priority sites in the study area.

Intersection Analysis

The intersections in the study area were also analyzed using the Highway Safety Manual (HSM) Part B method, which provides a way of identifying locations that warrant further study by using the “critical crash rate.” The critical crash rate is specific to each intersection and evaluates each intersection crash rate compared to the average crash rate of that site’s reference population. Intersections of concern have average crash rates that exceed the critical crash

rates, which means that they are in particular need of further investigation and potential improvements.

In downtown Ashland, there are two intersections that exceed the critical crash rate:

Lithia Way and Oak Street: Exceeds the critical crash rate. Of the 16 crashes at this intersection, the majority were rear-end (6) and pedestrian related (4) collisions. These collision types were mostly due to drivers following too closely, failing to avoid the vehicle in front of them, or not paying attention.

Lithia Way and East Main: Exceeds the critical crash rate. Of the 12 crashes at this intersection, the majority were angle (6) and rear-end (3) collisions. These collision types were mostly due to drivers disregarding the traffic signal or following too closely.

A third intersection could also warrant further study and action:

Main and Oak Street: The intersection of Main and Oak Street is just under the critical crash rate threshold, but one more crash or a change of 400 daily vehicles will push it over, so this location should probably also be considered for safety solutions.

2.7 Traffic Operations

Two measures are used to evaluate traffic operations: the "Volume to Capacity" ratio and "Level of Service." ODOT uses V/C ratio to evaluate roadways and identify needs, whereas the City of Ashland uses Level of Service to determine needs and problem areas in the road network.

- **Volume to capacity (V/C) Ratio** is a measure that reflects mobility and quality of travel of a facility. It compares roadway demand (number of vehicles) with roadway supply (how many vehicles a roadway can carry). For example, a V/C of 1.00 indicates that a roadway facility is operating at its capacity, and likely experiences congestion and delay.

- **Level of service (LOS)** is a qualitative rating (Level A through Level F) based on the average delay experienced by people driving through the intersection.

    - **Level A, B, and C** indicate conditions where traffic moves without significant delays over periods of peak hour travel demand, which typically is 7-9 a.m. and 4-6 p.m.

- **Level D and E** are progressively worse operating conditions.
- **Level F** represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.

Evaluating Traffic Operations in Downtown Ashland

The unsignalized intersections of Oak Street with Main Street and Lithia Way all exceed the volume to capacity target during peak hours. The Oak Street intersections exceed because of a high number of left-turning vehicles, which is understandable given the high volumes on Lithia Way and that left turns need to yield to all others. Except for Main & Granite Street, all the Main Street and Lithia Way unsignalized intersections would meet or exceed a future Level E standard if in the future Ashland gained ownership of this section of roadway from ODOT. Figure 10 shows intersections experiencing Level F delays, today and in the future.

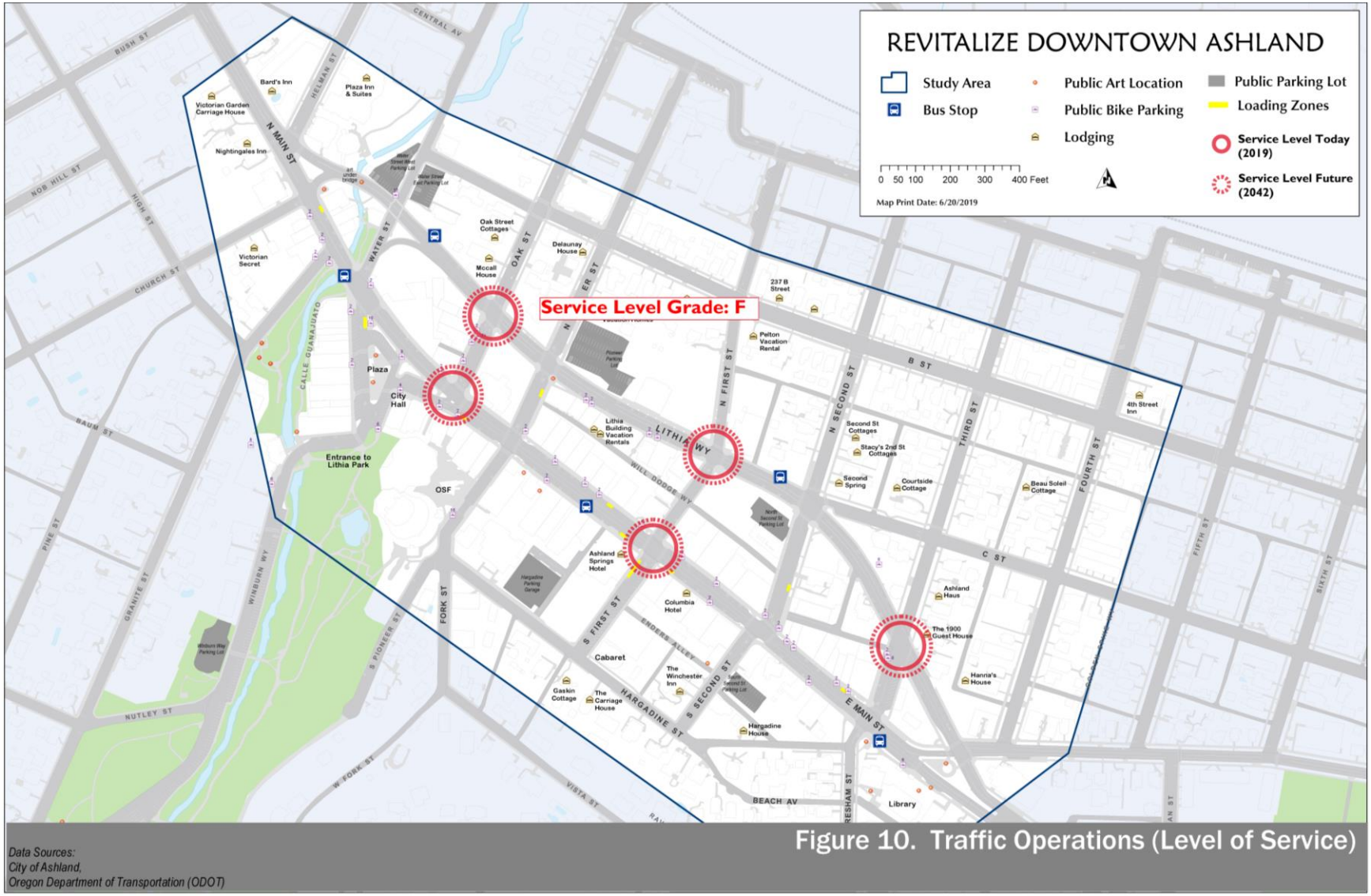


Figure 10. Traffic Operations (Level of Service)

Data Sources:
City of Ashland,
Oregon Department of Transportation (ODOT)

2.8 Queueing Delays

ODOT uses traffic analysis and modeling to understand the delays drivers face when queues form and cause back-ups. Queues can form because of drivers trying to make left hand turns at signalized and unsignalized locations; due to inadequate signal timing or signal capacity or an overabundance of vehicles in a particular area. At peak times such as morning and evening rush hour, queues of delayed vehicles can cause enough of a back up to impact preceding intersections. Studying the amount of delay that is typical can help roadway engineers to decide how best to design lanes, turning pockets, signal timing and other traffic controls to best accommodate expected traffic and reduce delays for everyone using the roadway.

Current Conditions

ODOT's traffic modeling for queues can be understood as the "worst case scenario" for peak traffic conditions. Understanding these queues help determine the appropriate length of turn pockets at intersections.

- **Main Street:** Queuing issues caused by traffic on Main Street are delay-based as vehicles have difficulty in finding gaps to turn left onto Main Street (for example, turning from Oak Street) or cross Main Street (which happens often at Water Street). These queues on Main Street are long enough in peak conditions to cause a back-up that extends to Lithia Way at the Church Street/couplet turnaround or past the Beaver Slide on Water Street.

Future Conditions (2042)

Modeling for traffic patterns in 2042 suggests queues would be generally the same or at least a couple vehicles longer (25-50') than in the existing conditions today.

- **Main Street:** Queuing issues on Main Street are delay-based as vehicles would still have difficulty in finding gaps to turn left or cross Main Street. These queues would be long enough in peak conditions to back out onto Lithia Way at the Church Street/couplet turnaround or past the Beaver Slide on Water Street.
- **Pioneer Street:** Queues at the Pioneer Street intersection could extend past the Oak Street intersection, which adds to the difficulty of exiting the plaza area especially if someone wants to head back north via Oak or through a series of lane changes to Pioneer.
- **Lithia Way:** Pioneer Street intersection remains the local bottleneck. Queues are projected to back through the Second Street intersection,

which then would back past East Main Street in peak conditions past the fire station.

- **Side Street Queues:** The longest side-street queues are at the northbound Oak and Third Street approaches. These high-delay locations could result in queues backing out onto Main Street (assuming that traffic did not divert to Pioneer or other couplet cross-streets).
- **B Street**: As more traffic is projected to divert to B Street, queues have increased especially at the Oak Street intersection where they could almost extend back to Pioneer Street.

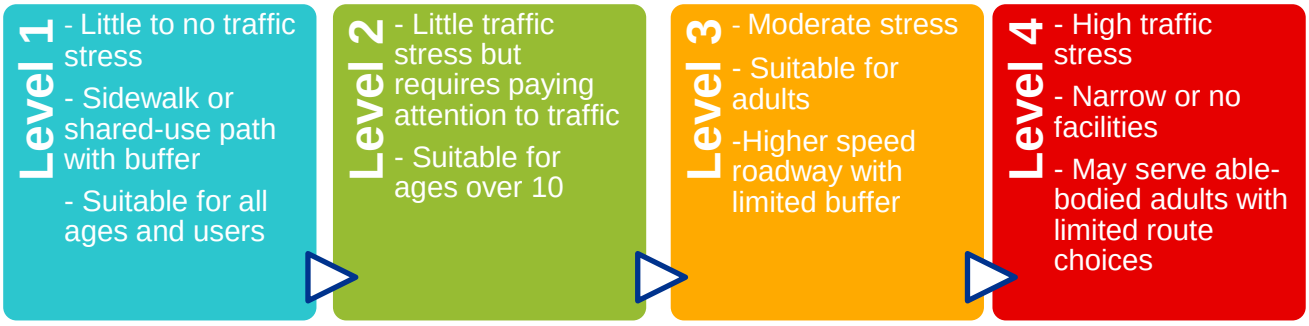
3. Traffic Stress on Pedestrians and Bicyclists

The Ashland Downtown Revitalization Plan aims to improve conditions in downtown Ashland for all people, regardless of how they get around. ODOT and the City use a measure known as “level of traffic stress” which is a metric based on the travel speed and distance from vehicle traffic that people experience when walking or biking downtown. Slower vehicle speeds and wider buffer distances from the road can improve the experience for people walking, rolling and biking in downtown Ashland.

3.1 Pedestrian Level of Traffic Stress

There are four levels of stress pedestrians may experience when walking or rolling, as defined by ODOT.

- Level 1 is the lowest stress street environment, where people of all ages and abilities are able to use the road comfortably. Level 1 is the target level of all streets near schools.
- Level 2 is considered a reasonable minimum target for pedestrian routes and is suitable for adults and children age 10 and over.
- Level 3 is considered a moderate stress level for pedestrians due to their close proximity to higher speed roadways with limited buffers.
- Level 4 is identified as a high traffic stress environment in which facilities are located along high-speed roadways and either do not exist or are challenging to use and access.



Low Stress: Over half of the study area is categorized as Level 1 or 2 which means that walking is relatively comfortable for the majority of the study area, and all types of people are able to walk and roll in these areas. The only street that has a completely low-stress level is Gresham Street (Level 1).

Moderate Stress: Most streets in the study area are a mix of Level 2 and 3. Moderate traffic stress for pedestrians is generally caused by poor quality curb ramps that make travel and especially crossings difficult for people with mobility impairments. For ramps, “poor quality” generally means they do not meet ADA

standards due to issues such as very steep slopes or no flat area to stop (for both able-bodied and wheelchair users). Ramps that appeared to be operable but had older markings were judged as fair. Ramps that were ranked as good needed flatter grades or plastic ramp inserts.

High Stress: There also is a scattering of Level 4 for too-narrow sidewalks or pinch points, missing buffers, or missing sidewalks. Level 4 applies when sidewalks are less than four feet wide at any point, or if long stretches sidewalk are at four feet wide. A four-foot sidewalk should only be used at limited short locations due to obstacles like retaining walls or street light bases.

Level of Pedestrian Stress, Today and Future

Over half of the study area (59% of all analyzed street segments) is expected to be low stress for pedestrians in the future (Level 1 or 2) – an approximate 2% increase from 2019 to 2042. Higher stress street segments (Level 3 and 4) are expected to make up roughly 40% of the study area, showing a slight improvement in stress level between 2019 and 2042 for both Level 3 and Level 4. Improvements that will further reduce the level of pedestrian stress experienced in downtown will be a key consideration and important step in making pedestrian mobility safer and more efficient.

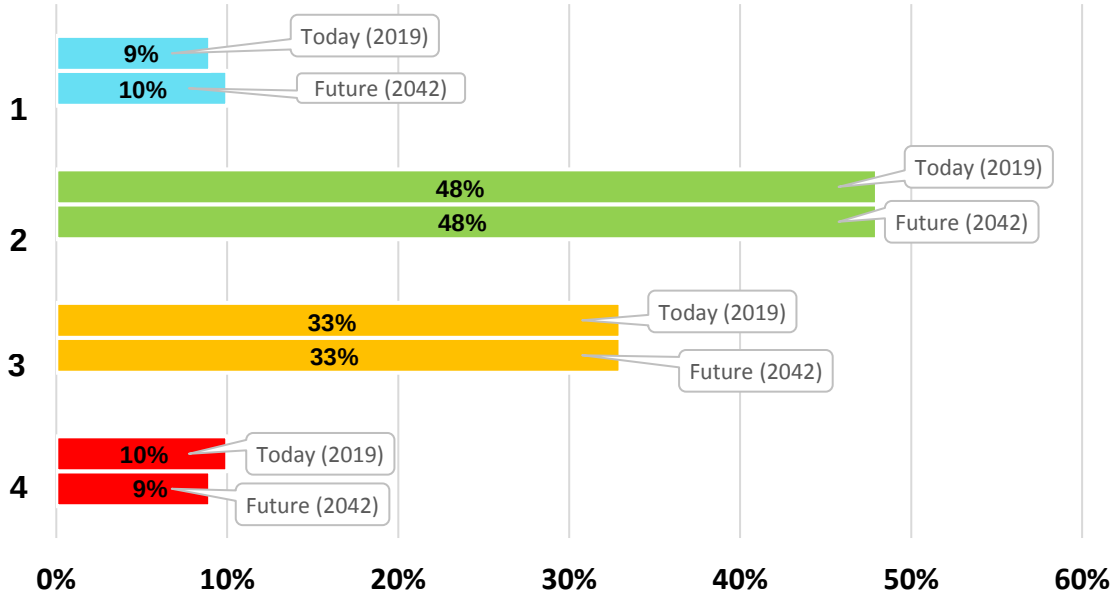


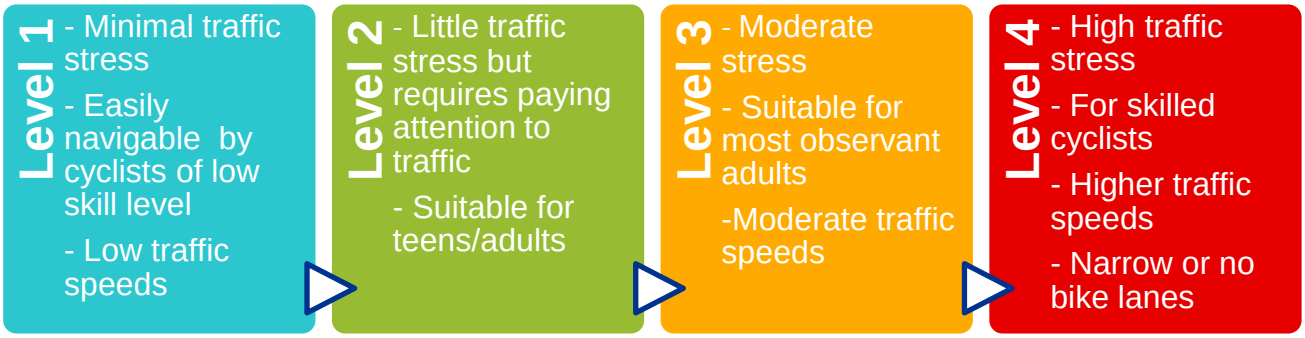
Figure 11 shows the overall pedestrian stress levels for the study area today.

Figure 11. 2019 Pedestrian Level of Traffic Stress

3.2 Bicycle Level of Traffic Stress

There are four levels of stress bicyclists may experience, as defined by ODOT. Bicycle Level of Traffic Stress ratings range from Level 1 (little traffic stress, suitable for all cyclists) to Level 4 (high stress and suitable for experienced and skilled cyclists).

- Level 1 is the lowest stress street environment, where minimal vehicle traffic and easy to navigate facilities mean cyclists of all skill levels can use the road comfortably.
- Level 2 is considered a reasonable minimum target for pedestrian routes and is suitable for adults and children age 10 and over.
- Level 3 is considered moderate stress and suitable for adult cyclists – those who are enthused and confidence riders, with speeds slightly higher and roadways slightly wider than level 2.
- Level 4 represents high stress environments that are made up of high speed, multi-lane roadways with large complex intersections. Level 4 is likely only suitable for fearless and skilled cyclists.



Most cyclists desire separation from motor vehicle traffic, especially as traffic speed and volume increases. The typical cyclist is sensitive to added traffic stress, and if a route has a poor segment or intersection, would-be bikers will often not make the trip at all or drive instead.

Most of the study area (84% of all analyzed segments) is at Level 1 or 2, which is all roadways except for Main Street, Lithia Way and Siskiyou Boulevard. This means that north-south travel is generally easy (other than slope impacts) but cautious riders who want to go east-west must go out-of-direction and travel around the fringes of the commercial area on B and C Streets. Hagardine Street is also a low-stress east-west route, but the steep grades can be challenging.

Level of Bicycle Stress, Today and Future

Future conditions were estimated based on the Main Street and Lithia Way infrastructure investment projects recommended in the City's Capital Improvements Plan; no other improvements were considered. The majority of the study area (87% of all analyzed street segments) is expected to be low stress for bicyclists (Level 1 or 2), with a 3% increase in number of Level 2 streets. The exceptions are Main Street, Lithia Way and Siskiyou Boulevard. High-stress streets (Level 4) are expected to decrease to 0% in the future, presenting a more comfortable environment for people riding bikes throughout the entire study area in 2042.

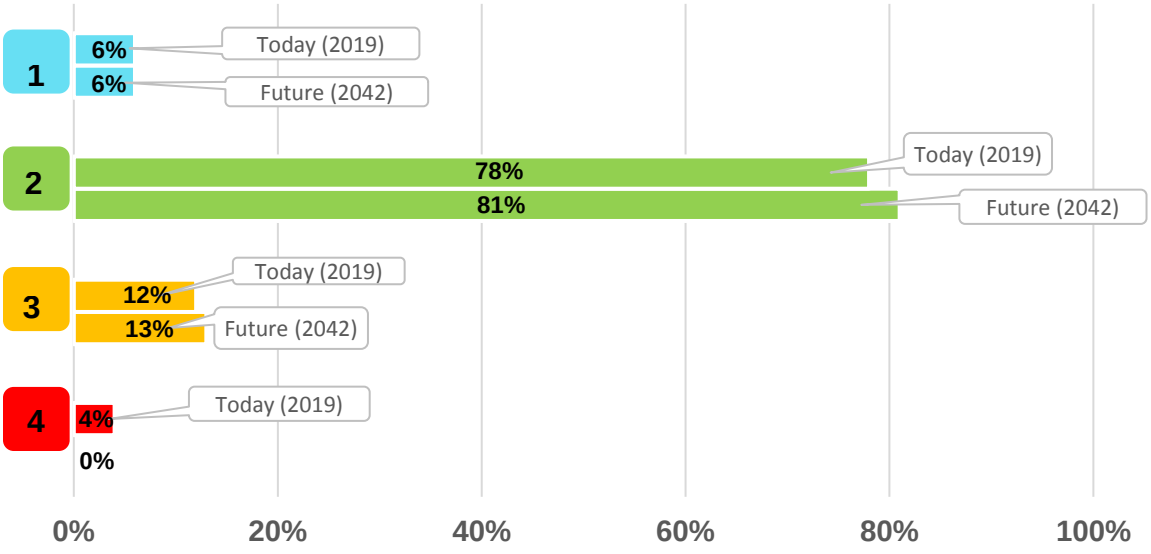
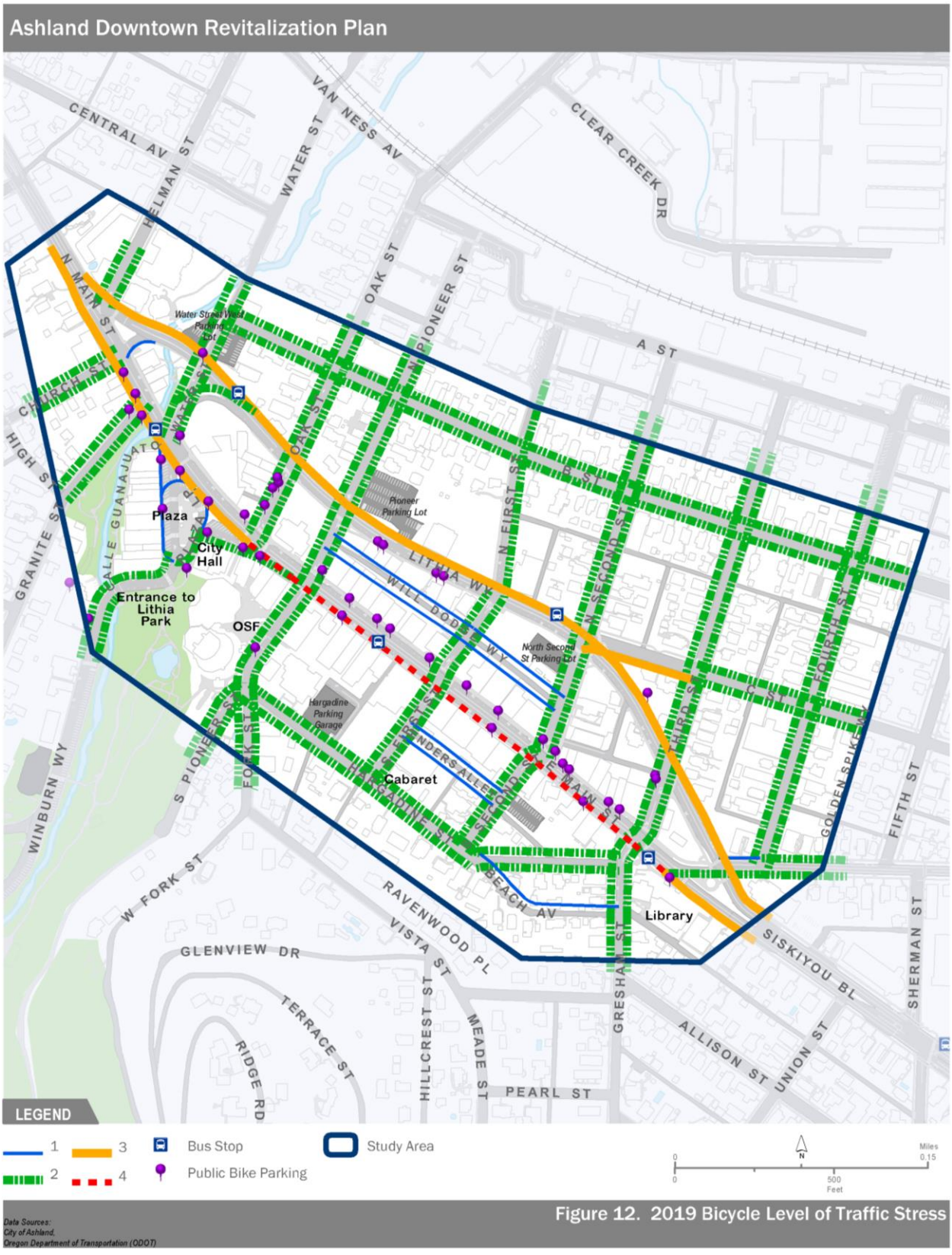


Figure 12 shows the overall bicycle service levels for the study area today.



Data Sources:
City of Ashland,
Oregon Department of Transportation (ODOT)

Figure 12. 2019 Bicycle Level of Traffic Stress

3.3 Streets that Serve Bikes, Pedestrians and Transit

Better urban conditions, such as wider sidewalks and bike facilities, slower speeds and lower traffic volumes, make for higher quality experience for pedestrians, bicyclists, and transit users. To understand current and future conditions for people walking, biking and taking transit in downtown, ODOT analyzed the Main Street/Lithia Way couplet using the Multimodal Level of Service (MMLOS) methodologies for pedestrian, bicycle and transit. Multimocal Level of Stress scores are also based on four components: traffic speed, traffic volume, number of lanes, and presence/quality of pedestrian and bicycle facilities; road segments are graded from best (Level A) to worst (Level F).

3.4 Quality of the Pedestrian and Bicycle Environment (Level of Service)

The quality of the pedestrian and bicycle environment in downtown Ashland was modeled for street segments in the study area; intersection evaluation is included in a separate section below. Approximately 10 locations have a level of service that falls below City standards (Level E or Level F) and will need further consideration for potential improvements. **Figure 13** shows street segments that do not meet City standards of good or fair quality for walking and/or biking.

Most sidewalks are in good or fair condition; which shouldn't pose any issues for any user. Significant cracking, uneven surfaces and the like warrant poor rating of Level E or Level F, which indicate sidewalks not meeting a standard of good or fair quality. If sidewalk segments looked like they would cause significant issues for a wheelchair user, then they were given a poor grade of E or F. For example, sections on Main Street around Helman Street assigned Pedestrian Level E have issues with narrow points between retaining walls and pole bases. Locations where there are three lanes of traffic also present unpleasant environments for pedestrians using the adjacent sidewalks.

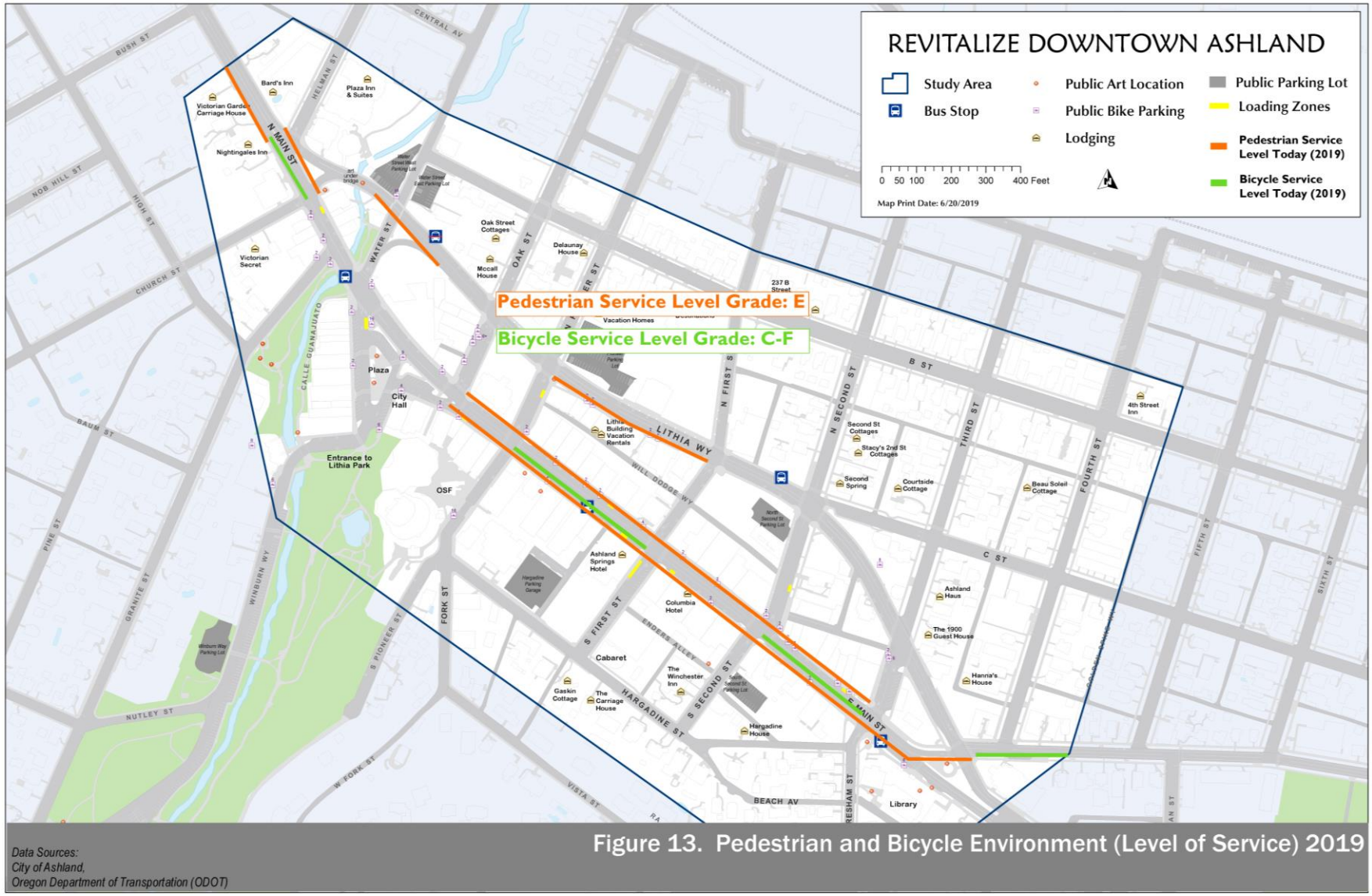


Figure 13. Pedestrian and Bicycle Environment (Level of Service) 2019

Data Sources:
City of Ashland,
Oregon Department of Transportation (ODOT)

Pedestrian Environment

The pedestrian level of service is generally at Level C on Main Street except for the of the segments from the western study area boundary to Helman Street, which are Level E because of a narrow sidewalk and the three-lane section from Oak to E Main Street. On Lithia Way, the level of service is also generally Level C other than the narrow sidewalk sections from Pioneer to First Street on the south side of the street and the Water Street overcrossing on the north side, which are Level E.

Bicycling Environment

The bicycle level of service is also generally at Level C on Main Street except in sections where driveways exist which drop the level of service to Level C-F. About 85% of users would classify this as Level C-F with about half falling into Level E-F range. Driveways add an extra level of potential conflicts with vehicles, which require more caution from bicyclists. Lithia Way provides new on street sharrows that create a shared lane for cyclists, but because it is shared, it does little to improve the bicycle level of service.

Intersections

Signalized intersections in the study area were analyzed for their impact on pedestrian and bicyclist safety (e.g. crossing distance, turning conflicts, provided facilities) and based similarly to the level of traffic stress methods. Generally, the level of service criteria can be interpreted as:

- **Level A or B**: Conditions should be generally acceptable for users
- **Level C or D**: Some issues exist that may make users uncomfortable
- **Level E or F**: Significant issues exist that will make most users feel uncomfortable. It is likely that this intersection will deter users to some degree.

None of the locations exceeded the Level D analysis threshold; however, there are some lurking issues at several the intersections.

- **Main Street & Pioneer Street and Second Street intersections**: The Level C & D pedestrian scores at the Main Street & Pioneer Street and Second Street intersections are because of overall poor condition curb ramps, which prevent a good quality crossing (both would be Level A if these were corrected).
- **Main Street:** The Level C & D bicycle scores on the Main Street locations are due to bicyclists sharing the lanes with vehicles and potential conflicts with right turning vehicles.

- **Lithia Way and Second and Pioneer Street intersections:** The Level C bicycle scores at the Lithia Way and Second and Pioneer Street intersections are mostly because of left and right turning conflicts with bicyclists.

Unsignalized Crosswalks

Pedestrian level of service analysis was also performed for the crosswalks at unsignalized intersections. **Figure 14** shows the unsignalized crossings with high pedestrian delay (amount of time a pedestrian must wait to cross) in the downtown couplet.

Pedestrians generally do not like to wait more than about 45 seconds to cross, and as wait times increase, pedestrians are more likely to take a shorter gap and dart into traffic. This creates safety issues for both pedestrian and drivers. A recent Oregon law passed in 2017 (ORS 811.028) requires a vehicle to stop and remain stopped for a pedestrian in the following locations:

- In the lane in which the driver's vehicle is traveling;
- In a lane adjacent to the lane in which the driver's vehicle is traveling;
- In the lane into which the driver's vehicle is turning;
- In a lane adjacent to the lane into which the driver's vehicle is turning, if the driver is making a turn at an intersection that does not have a signal; or
- Less than six feet from the lane into which the driver's vehicle is turning, if the driver is making a turn at an intersection that has a traffic control device under which a pedestrian may proceed

However, even with the recent pedestrian yielding law change, the low driver yielding rates are substantially unaffected at standard crossings without any enhancements or active features (such as extra signing, signals or beacons).

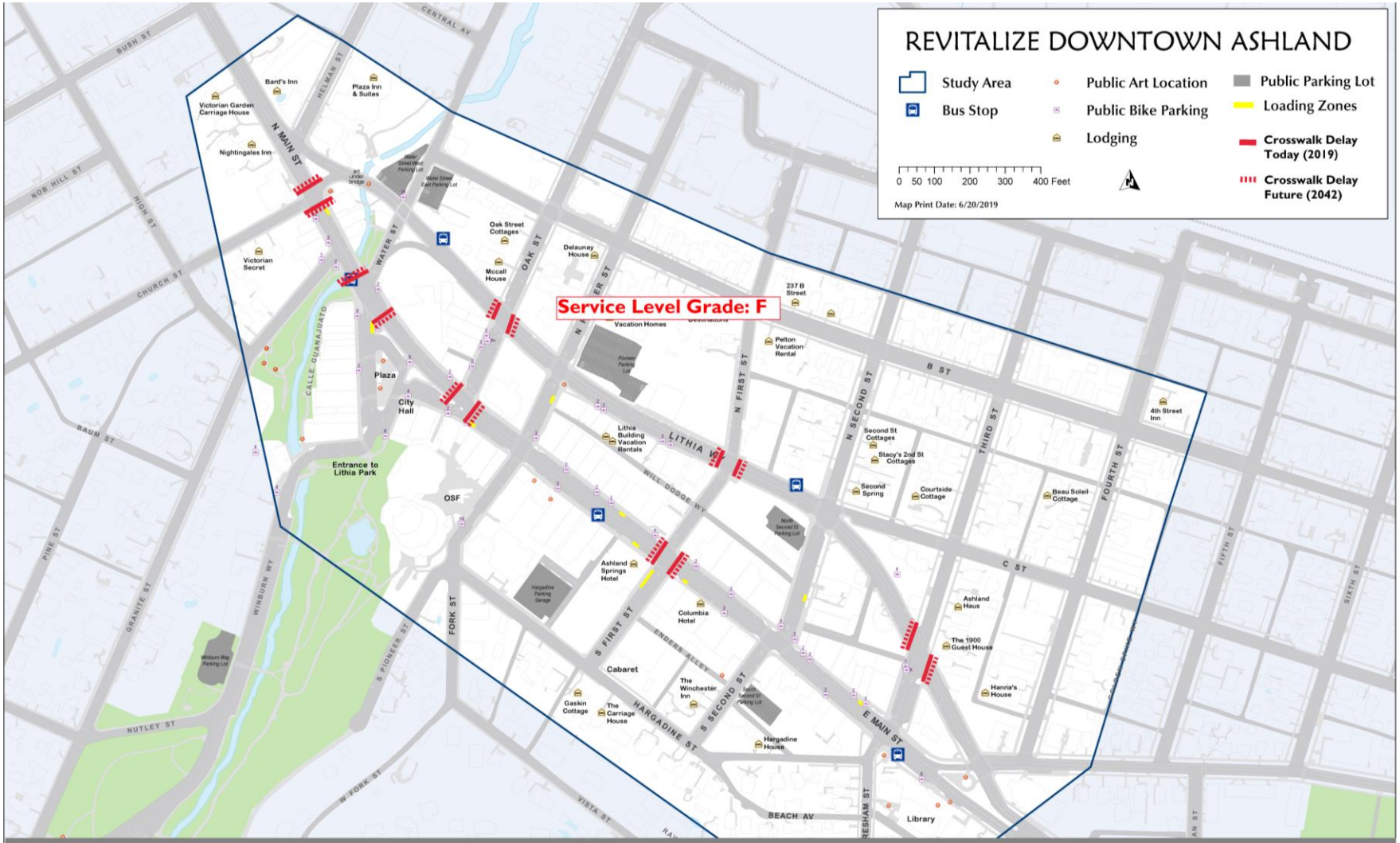


Figure 14. Crosswalk Delay (Level of Service) 2019 & 2042

Data Sources:
City of Ashland,
Oregon Department of Transportation (ODOT)

Transit Evaluation

The Rogue Valley Transportation District provides service on Main Street and Lithia Way through the study area via Ashland Route 10, which travels from the Front Street transit center in Medford to the Bi-Mart on Tolman Creek Road. Transit stops are provided on Main Street at the downtown plaza, near the Ashland Springs Hotel near First Street, and at the city library at Third Street. On Lithia Way, stops are at Second Street and across from the Beaver Slide west of Oak Street. Weekday service is from 5 AM to 9 PM with 20-minute intervals from 7 AM to 6 PM with 30-minute service for the off-peak periods. Saturday service is also offered from 7 AM to 7 PM but on a 30-minute frequency.

With 20-minute service, this allows a transit rider the scheduling flexibility of travel without waiting for excessive periods and the overall study area transit LOS C. For off-peak weekday and Saturdays, the level of service drops to Level D as the 30-minute frequency tends to drive rider's schedules when they have to leave their origin points or when they can arrive at destinations.

4. Summary of the Transportation System Needs

This section provides summaries of the existing and future conditions of the transportation system of downtown Ashland, and highlights known deficiencies that warrant further study and possible intervention. The sections below identify areas in need of safety improvements, driving and mobility improvements, areas where pedestrian infrastructure is needed or in need of repair, and locations where bicycle facilities are needed.

4.1 Safety

- **Lithia Way & Oak Street:** This intersection has the highest crash rate in the study area. Many of the crashes are direct pedestrian strikes or pedestrian related rear-end collisions (when a vehicle stops to let a pedestrian cross the street). High speeds and a lack of awareness of pedestrians contribute to crashes here.

- **Main Street between Oak & Pioneer Streets:** Significant amount of rear-end collisions especially when stopped for pedestrians and sideswipes from the added lane on Oak Street.

- **Lithia Way & East Main Street:** There are a high number of angle-crashes at this intersection, potentially caused by visibility issues.

  Lithia Way between First and Pioneer Streets: This section contains most of the bicycle-related crashes where drivers fail to see bicyclists in the bike lane when turning into the public parking lots and street approaches.

- **B Street:** Visibility issues along B Street create difficulty in seeing on-coming vehicles with nearby parked cars and/or vegetation.

- **Second Street:** Turning and parking crashes along Second Street may indicate a potential visibility issues with parked vehicles and/or vegetation.

4.2 Mobility Deficiencies

- **Main & Oak Street:** This intersection is over capacity, which means it suffers from congestion and delay, due to side-street capacity issues and drivers turning left from Oak.

- **Main & Pioneer Streets:** Congestion causes back-ups which block often block the Oak Street intersection because of the relatively short block spacing.

- **Lithia Way & Oak Street:** This intersection is substantially over capacity, suffering from congestion and delay (the highest delay of any location in the

study area), which impacts other streets in the area. Pedestrians are at risk in these situations because drivers make unexpected decisions that could cause collisions.

- **Lithia Way & Pioneer Street:** This intersection is a local bottleneck. Queues, the amount of time a driver has to wait at an intersection, could reach back to Second and Third Streets.

- **Lithia Way & Third Street:** This intersection is projected to be over capacity by 2042. Wait times on Lithia Way are projected to extend past East Main Street, and northbound Third Street back-ups could impact the Main Street intersection.

4.3 Pedestrian Deficiencies

- **Main Street and Lithia Way**: Pedestrian are required to wait a long time at unsignalized crosswalks, and forced to travel out-of-direction to the next signalized intersection, or risk crossing in a dangerous location.

- **Main Street**:
  - There are a number of narrow sections that indicate a poor level of service or higher stress level from the pedestrian's perspective at the following locations:
    - West study area boundary– Helman Street (south side): narrow pinch point and curb-tight sidewalk
    - Oak Street – East Main Street (south side)
    - Third Street – Oak Street (north side)
    - Church Street – Helman Street (north side): narrow pinch point
    - Helman Street – west study area boundary (north side); curb-tight sidewalk
  - There are a number of locations that have poor sidewalk and/or ramp conditions that could deter or hamper disabled users:
    - The sidewalk ramps crossing Church, Granite, Water, First, and Second Streets are in poor condition.
    - The north side sidewalk between Water Street and Oak Street is in poor condition.
- **Lithia Way**:
  - There are a number of narrow sections that indicate a poor level of service or higher stress level from the pedestrian's perspective at the following locations:
    - Pioneer Street – First Street (south side)
    - Oak Street - Beaver Slide (south side)
    - Water Street overcrossing (north side)

  - Sidewalk and ramps crossing Beaver Slide missing which prevents full use of this sidewalk section. ***There is a CIP project identified to add curb ramps and related sidewalk at this location.***
  - Five-leg intersection at Second Street puts pedestrians at risk due to frequent driver turning movements.

- **B Street:**
  - Water to Oak Street is partially missing sidewalk on south side and narrow poor condition sidewalk on the north side.
  - Crossing Pioneer and Second Streets on the south side and Oak and Second Streets on the north side have ramps in poor condition.

- **Helman Street:** West side sidewalk is narrow and in poor condition.

- **Church Street:**
  - Sidewalk from Lithia Way to Main Street is narrow.
  - West side sidewalk south of Main Street is narrow and ramps are in poor condition crossing Main Street.

- **Granite Street:** East side sidewalk is in poor condition.

- **Water Street:**
  - East side sidewalk from Main Street to Beaver Slide is very narrow.
  - The crossing of B Street on east side has ramps in poor condition.

- **Plaza (Main St):** Crossing Main Street has ramps in poor condition.

- **Oak Street: CIP project identified to upgrade curb ramps**

- **Pioneer Street:**
  - The crossings of Lithia Way, Main Street, and Hargardine Street on the west side have poor curb ramps.
  - West side sidewalk from Hargardine Street south is in poor condition.
  - East side sidewalk from the south to Hargardine Street has no sidewalk.
  - The crossing of Main Street on the east side has poor curb ramps.

- **Fork Street:** The west side sidewalk is narrow, and the east side sidewalk is in poor condition.

- **First Street:**
  - West side sidewalk from Will Dodge Way to Main street is narrow and in poor condition.

- The three-lane crossing of Main Street is relatively wide and creates a stressful pedestrian environment.
- West side sidewalk from Main Street to Hargardine Street is narrow.
- The crossing of B Street on the east side has poor curb ramps.

- **Second Street:**
  - West side sidewalk from Will Dodge Way to Main Street is in poor condition
  - Crossing of Will Dodge Way on west side and of B Street on the east side has poor curb ramps.

- **Third Street:** The crossings of B and C Streets on both sides have poor curb ramps.

- **Fourth Street:** The west side crossing of B Street and the east side crossing of C Street have poor curb ramps.

- **Beaver Slide:** There is a very narrow sidewalk on the west side with no sidewalk ramps. ***There is a CIP project identified to add curb ramps and a likely ramp/walkway between Lithia Way and Water Street, which should address this deficiency.***

- **C Street:** The sidewalk is missing from Second Street east on the south side. The sidewalk ramps that exist are in poor condition.

- **Will Dodge Way & Enders Alley –** These named alleys have no marked or available pedestrian space.

- **Hargardine Street:**
  - The south side sidewalk from Pioneer Street to First Street is in poor condition.
  - The crossing of Second Street on the south side, First Street and Pioneer Streets on the north side have poor curb ramps.
  - Sidewalk from Second Street to Gresham Street in both directions is missing.

- **Beach Avenue:** Sidewalk in both directions from Gresham Street to Hargardine Street is missing.

4.4 Bicycle Deficiencies

- **Main Street:** The lack of a bike lane on this roadway coupled with several driveway conflicts indicate a poor level of service from the bicyclist's perspective.
    - The three-lane section from Oak to East Main Street has the potential to deter all but the most confident riders. ***In 2019, a CIP project was completed to add sharrow markings Main Street along its length in the study area. This may somewhat improve conditions but will not completely address the deficiency in the three-lane section.***

- **Siskiyou Boulevard:** The provided bike lane is a foot too narrow for a four/five-lane roadway.

- **Lithia Way:** The provided bike lane from East Main Street to Oak Street is a foot too narrow and does not have a buffer to protect bicyclists from door effects from adjacent parked vehicles.
    - No bike lane is provided from Oak Street to Helman Street. ***There is a CIP project identified to add sharrow markings on Lithia Way from Oak Street to Helman Street. This may somewhat improve conditions but will not completely address the deficiency.***