
Subject **Technical Memorandum #3**
Revised January 8, 2019

Introduction and Purpose

Liberty Park is one of the City's oldest and most established neighborhoods, with a diverse mix of residents and businesses. It includes a mix of housing, commercial and retail businesses, educational and other institutions, and industrial uses, while serving as a gateway to the Downtown, other commercial areas, and the Bear Creek Greenway. At the same time, the neighborhood is surrounded by major roadways and it lacks a complete and reliable network of sidewalks and street crossings to provide adequate connections within and outside its boundaries.

In an effort to address ongoing needs, the Medford Urban Renewal Agency (MURA) and Medford City Council adopted an amendment to the current Medford Central City Center Revitalization Plan in March 2018 that increases available MURA funds for the Liberty Park neighborhood. Of the newly available \$19.9 million in financing, approximately \$2 million is allotted for downtown seismic retrofitting. This leaves more than \$17 million for projects within the Liberty Park neighborhood, bounded by Jackson Street, McAndrews, Biddle, and Court/Central. Money dedicated through MURA is subject to change at the discretion of MURA and the Medford City Council. The approximate amount of \$17 million is used for planning purposes in this document and other related planning efforts.

Since June 2018, the City of Medford has led a community process to develop a new plan for the Liberty Park Neighborhood. These efforts are building on the 2002 Liberty Park District Neighborhood Plan. Recommendations in this memo are based on the results of a community-led process that established a vision for the Liberty Park, identified desired locations for changes to zoning and land uses, proposed improvements in the public realm, and laid out a series of prioritized objectives.

The goals of the neighborhood plan are to:

- Make this a safe neighborhood for residents to walk, bicycle and socially interact through design of private development and public spaces. Enhance and promote law enforcement and social services that meet community needs and help minimize crime and the impacts of homelessness on the neighborhood.
- Create and maintain a happy, healthy, attractive and vibrant neighborhood for residents and business owners through a shared sense of responsibility, accountability, ownership and respect.
- Create, maintain and enhance places within the neighborhood that contain resources to enrich lives, including parks, gathering places and other educational and community facilities and services that enhance the neighborhood and improve the lives of people within it.
- Provide quality, affordable, attractive housing for people with a range of incomes, ages and needs through development and redevelopment of a full range of housing types and mixed residential and commercial development.
- Support creation and expansion of local businesses, including those that serve neighborhood residents and workers and provide products that meet every-day needs.

- Conserve natural resources, preserve the natural environment and provide access to nature, including through connections to the Bear Creek Greenway.
- Support the creation of family wage jobs and advanced educational opportunity to the residents of the neighborhood.
- Connect this neighborhood into the downtown economy and to other parts of the City through improvement and maintenance of an efficient, effective transportation system that supports all types of travel, including walking, bicycling, driving and transit.

The purpose of this memorandum is to summarize the vision concepts for the Liberty Park Neighborhood as obtained through public outreach efforts to date. These efforts are described briefly in the “Outreach Summary” section below. This memorandum also begins to evaluate the types of implementation measures that would be needed to enact these concepts.

Outreach Summary

The City of Medford has conducted the following outreach efforts that inform this outreach summary:

- Project Visioning Website
- Visioning Survey
- Open House
- Neighborhood Advisory Committee (NAC) meetings.

Summary of PMT Visioning Discussion: The project management team provided the following input on visioning for the Liberty Park neighborhood based in large part on feedback from the NAC:

- Identify specific potential redevelopment sites based on NAC and community feedback and recommendations from the team.
- Retain the zoning pattern in the area; there does not appear to be a need for significant zone changes but it is important to look at ways to encourage certain types of development or redevelopment.
- Consider targeted changes to zoning in the SFR-10 areas. The underlying General Land Use Plan (GLUP) for those areas is medium residential so an MFR-15 zoning designation would be consistent with the GLUP. Because the City’s residential zones do not allow for retail or commercial uses other than home occupations, some development code amendments will be needed to allow for those uses in residential areas in the neighborhood as suggested by the NAC.
- Address non-conforming uses in the area such as four-plexes and other multi-family residential uses sprinkled through the SFR-10 area.
- Discuss potential up-zoning of the SFR-10 area with property owners as part of this project.

- Address concerns and conditions related to hotels in the area. In some cases, those hotels are providing needed housing to low income residents. At the same time, residents are concerned about illegal activity associated with them. Opportunities to retain the supply of affordable housing the hotels represent while also addressing neighborhood concerns should be considered.
- Consider use of an overlay zone as a tool to adjust or revise zoning provisions in the area.
- Explore use of a multi-modal mixed use area (MMA) designation as a potential tool. Describe what it does, when it is typically used, and how and why it might be applicable to this area.
- Consider opportunities for urban design and redevelopment to help revitalize the area. For example, a connection to the Bear Creek Greenway could serve as a future redevelopment corridor.
- Describe potential transportation improvements in the area, including very rough cost ranges for them (i.e., whether they are low cost to very high cost). The Task 4 Neighborhood Vision Plan will provide more detailed cost estimates for high priority improvements.

Land Use

Opportunities for Redevelopment

Figure 1 and Figure 2 show two different lenses into redevelopment potential of the Liberty Park neighborhood. Figure 1 shows properties colored by improvement value per square foot - the darker colors are those with a greater amount of improvement value (i.e. investment) on a per square foot basis, meaning that properties with darker colors are less likely to redevelop. Figure 2 shows the improvement value as a ratio of the property’s land value. The accuracy of these maps depends upon the accuracy of the underlying taxlot data, but in general these maps illustrate the following:

- Most of the residential areas show up as less likely to redevelop. These are generally small lots with modest homes on them – there is not much underutilized residential land in the neighborhood. Renovation and repair of these homes is more likely than full-scale redevelopment.
- Several of the larger commercial parcels on N Riverside and N Central have a fairly low level of improvement value per square foot. This makes sense because of the amount of parking surrounding these structures. If parking requirements allow, some of this space could be utilized by new commercial developments.
- Industrially-zoned parcels on the western edge of the neighborhood show up as having a low improvement value for their size – this is typical of industrial land, which tends to have a low value on a per-square-foot basis. However, as mentioned earlier, this area is home to important employment uses and jobs for the City of Medford, and changes that displace these uses are not recommended.

To the extent that redevelopment does occur within the Liberty Park area, walkable, locally-serving retail has been a desired aspect of the neighborhood visioning process. Some examples of this type of development are shown in the following images.

Figure 1. Redevelopment Potential – Improvement Value per Square Foot

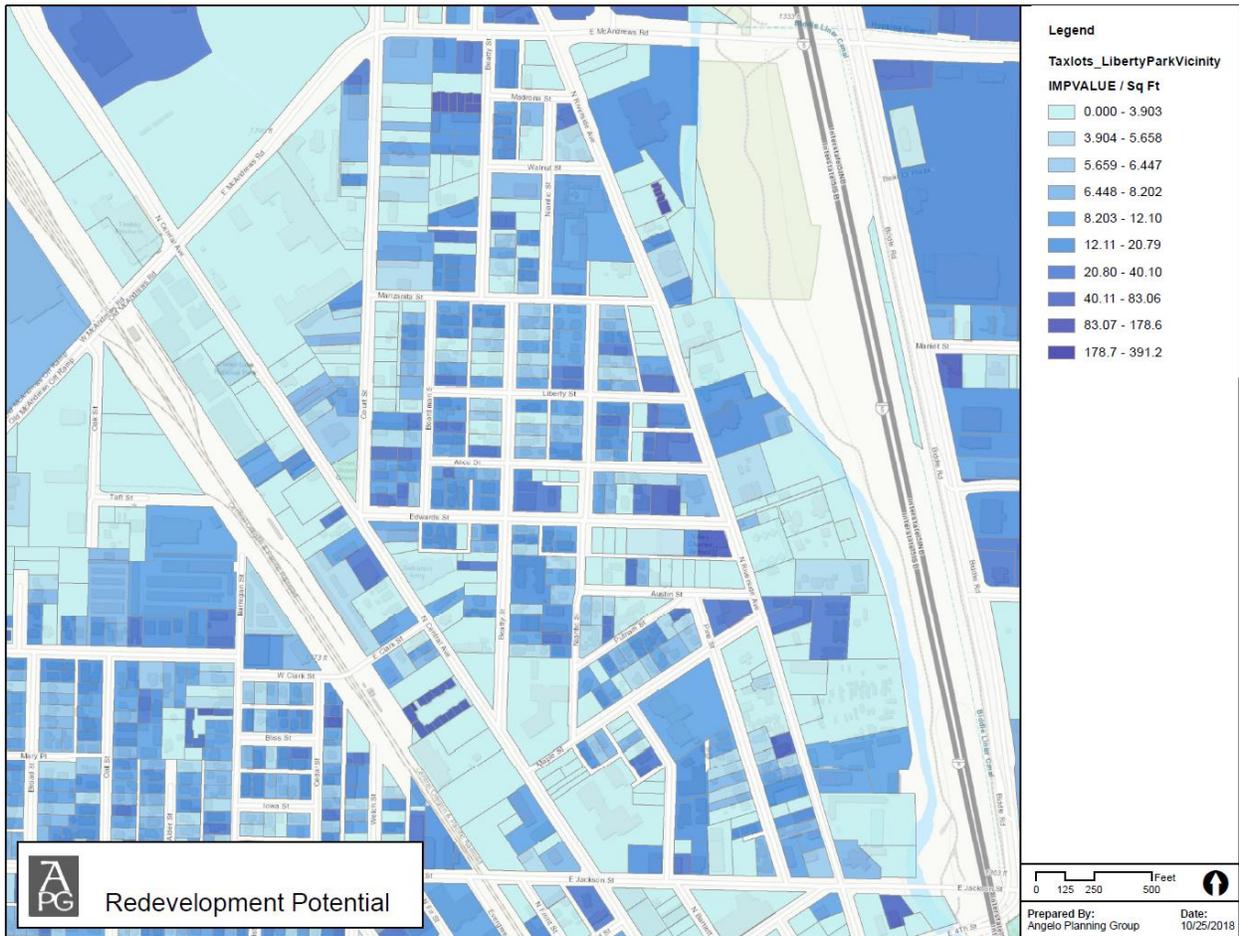


Figure 2. Redevelopment Potential – Improvement Value to Land Value Ratio

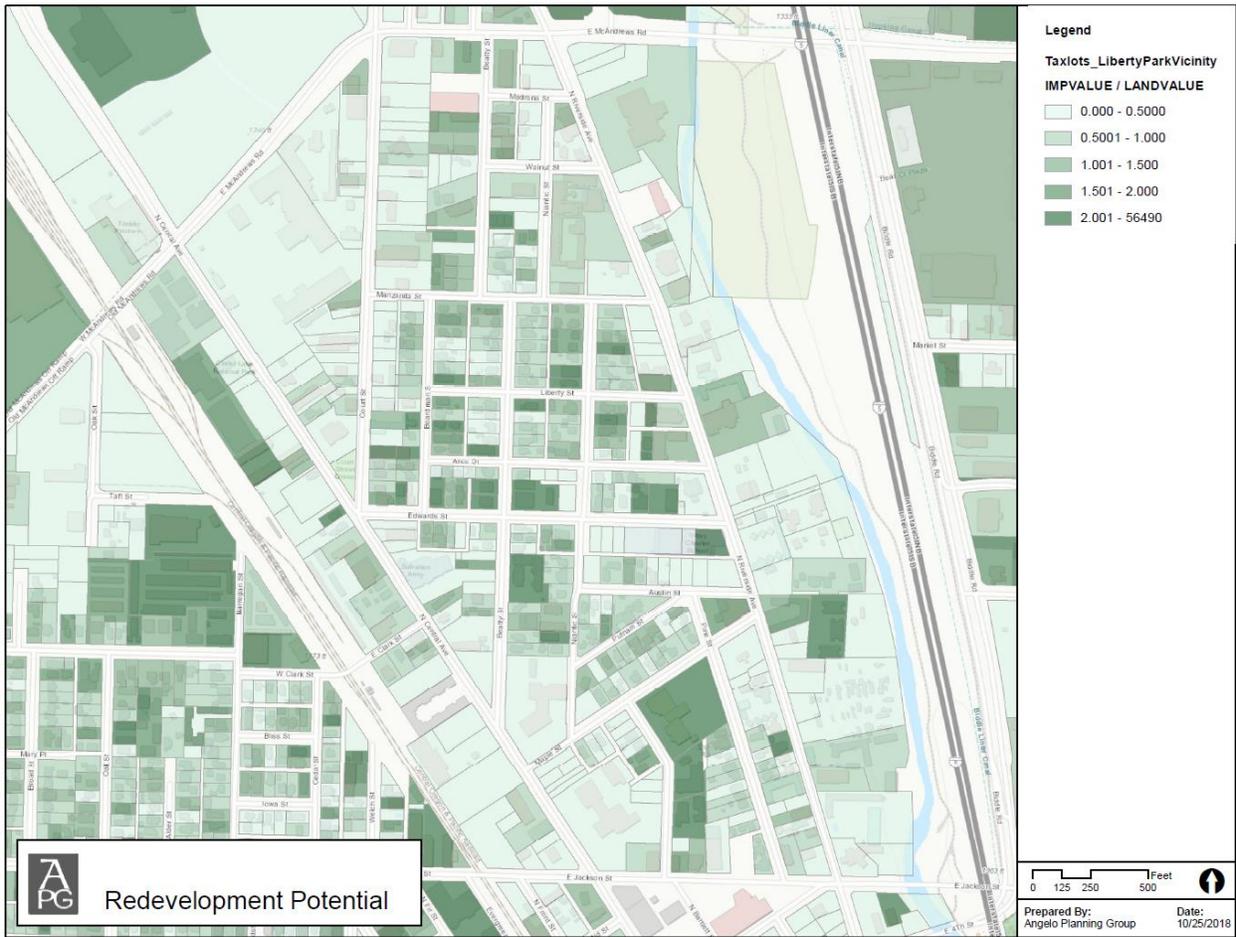


Figure 3. Full block of storefront commercial, 406 E Main St, Medford



Figure 4. Small-scale restaurant at 1789 W Stewart



Figure 5. Corner coffee shop with wide sidewalks at 229 W Main.



Figure 6. Commercial/Office Development at 834 E Main



Figure 7. Cafe within a former single family residence, Medford OR



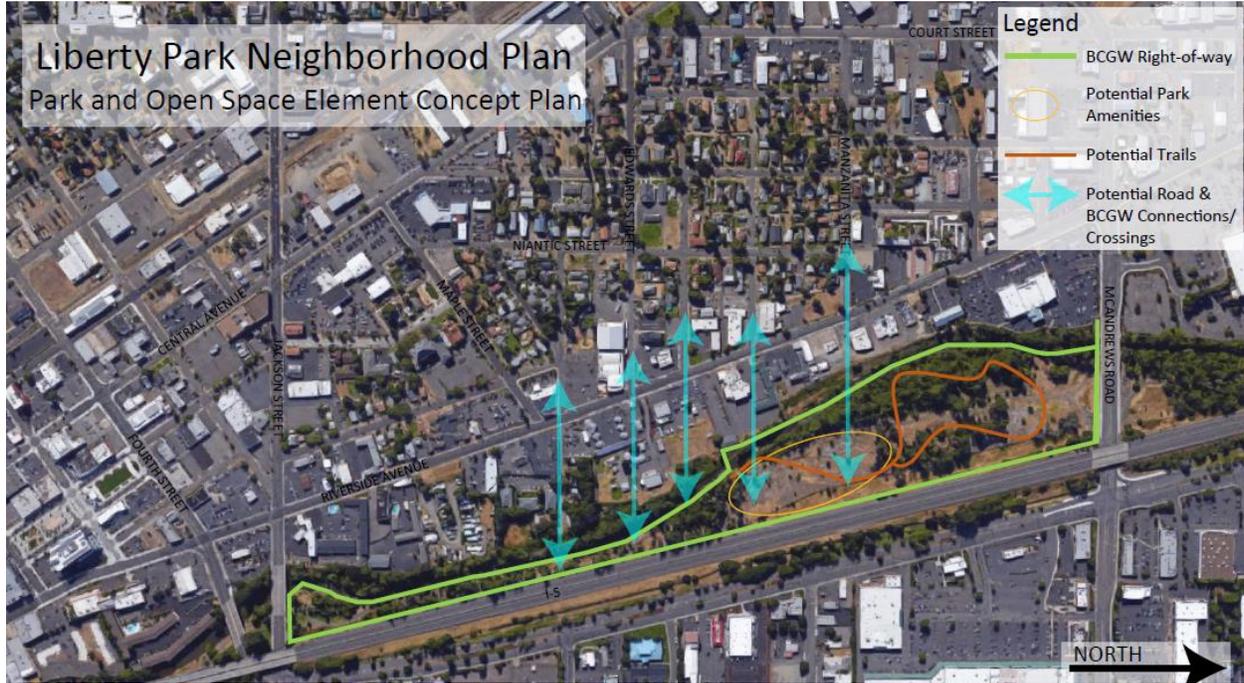
Figure 8. Food Carts in Medford, OR



Figure 9 shows a high-level summary of a number of land-use opportunities identified to date in the Liberty Park Neighborhood Plan process. These opportunities include:

- Potential infill sites, shown in purple. These parcels have little or no improvements on them and may be suitable for infill development. They are within Community Commercial or Heavy Commercial zones.
- Areas of SFR-10 Zoning, shown as a dashed yellow outline, which contain nonconforming uses of higher density than currently allowed in the code. Through one or more regulatory means, this designation could be altered to allow for modest development/redevelopment of higher density residential uses within the existing SFR-10 zone.
- Connections to Bear Creek Greenway. Either along existing roadways or through new connections, the Liberty Park Neighborhood could be better connected to the Bear Creek Greenway. These pedestrian and bicycle improvements could support targeted development along a particular corridor.
- Many hotels are located along major roads of the study area. These have been areas of concern voiced by project participants due to illegal activity, but some of these uses also provide needed housing for low income residents and present an opportunity to activate parts of the neighborhood with overnight guests seeking a meal or other amenities. Elimination of this source of low-income housing could exacerbate homelessness issues if it were not replaced in some other form.

Figure 10. Bear Creek Greenway Concept from Medford Parks and Recreation



Regulatory Changes

There are several ways to implement the ideas brought up by the project team, the NAC and other community members. This section discusses regulatory changes that might be used on their own or in combination with one another.

Re-Zoning

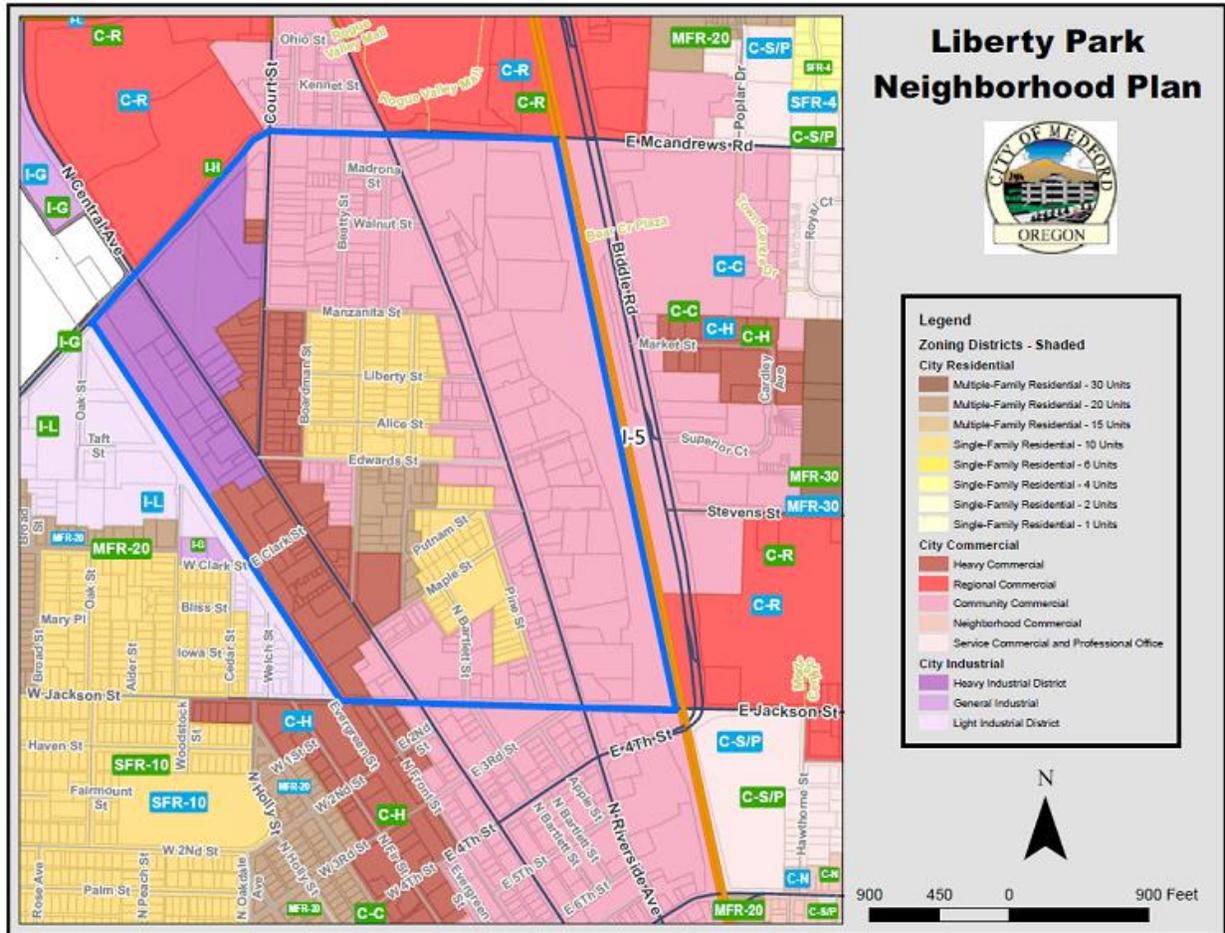
The current zoning of the Liberty Park neighborhood is shown in Figure 11. Zoning designations in the neighborhood include the following:

- **Residential Zones.** Residential zoning in the Liberty Park neighborhood includes Single-Family Residential – 10 Dwelling Units per Gross Acre (SFR-10) and Multiple-Family Residential – 20 Dwelling Units per Gross Acre (MFR-20). There are several non-conforming uses within the SFR-10 areas of the Liberty Park neighborhood, including 3-5plexes and multifamily developments. The General Land Use Plan (GLUP) designation for these areas is a combination of Urban Medium Density Residential (UM) and Urban High Density Residential (UH), which are more similar to MFR-15 and MFR-20. The existing SFR-10 areas could be rezoned to MFR-15 to address non-conforming uses and allow for a more efficient and intensive pattern of development, and or a wider range of housing types and redevelopment opportunities. Another option would be to create an overlay district that permits 3-5-plexes within the existing zoning district.
- **Commercial Zones.** These include Community Commercial (C-C), which makes up the majority of the neighborhood, and Heavy Commercial (C-H) along N. Central Drive and Court Street. It may be appropriate to change zoning designations in selected portions of these commercial areas to encourage the types of development envisioned in the Liberty Park Neighborhood Plan. There

are several residential uses along Boardman Street within the Heavy Commercial areas, which is permitted under the zoning code.

- **General Industrial (I-G).** This area is home to important employment uses and jobs for the City of Medford, and changes to zoning destination for this area is generally not recommended.

Figure 11. Zoning Map of the Liberty Park Neighborhood



Create an Overlay Zone for the Liberty Park Neighborhood

An overlay zone could be used to apply special regulations to the Liberty Park area, in addition to or instead of making changes to underlying base zones. A "Liberty Park Overlay Zone" could:

- Establish site development or architectural design guidelines or standards that add to or supersede those of the base zones to create a more pedestrian-friendly environment
- Restrict certain uses that would otherwise be allowed, or allow uses that would otherwise be prohibited.
- Require development or redevelopment in certain areas to provide better pedestrian access to neighborhood amenities, such as the Bear Creek Greenway.

Mixed Use Multimodal Area (MMA) Designation

The MMA designation was established as a way for Oregon cities to identify areas that are appropriate for compact, walkable, mixed-use development; and where it is possible for some state traffic restrictions to be lifted to help achieve these goals. Lifting these restrictions is primarily achieved by allowing for use of alternative mobility standards for state facilities in order to avoid the need for expensive mitigation projects which would otherwise be required to accommodate the type and level of development or redevelopment proposed for land within the MMA. Designation and application of a MMA requires cities to adopt a number of different design and development standards to attempt to ensure a future pattern of mixed use development within the MMA boundaries, consistent with the intent of a MMA. These requirements include:

- An adopted boundary for the MMA that is entirely within the Urban Growth Boundary (UGB)
- The MMA boundary must be within ¼ mile from any ramp terminal intersection of existing or planned interchanges, or from an adopted Interchange Area Management Plan area.
- Regulations that allow for a concentration and variety of uses, including:
 - A mix of medium to high-density residential development (allowing for densities of 12 units per acre or higher);
 - Offices or office buildings;
 - Retail stores and services;
 - Restaurants;
 - Civic uses and public open space.
- Design requirements including buildings oriented toward streets and reduced/no minimum parking
- Allowance of multi-story buildings within a core commercial area.
- Less required parking than in other areas. This would represent a shift in comparison to current development patterns. Reducing minimum requirements would likely benefit many property owners from a redevelopment cost perspective and would not preclude private property owners from providing more parking than required except to the extent that maximum parking requirements are established in the future.
- Assumptions for a balance of land use and mobility goals. The City (and residents, workers and visitors) would accept a higher degree of congestion in this area as a trade-off for the ability to meet the land use goals and vision described here. It should be noted that a certain amount of congestion can be healthy and beneficial for a city or neighborhood. For example, driving more slowly through an area can help drivers see and access local businesses and can increase retail sales and real estate values. Similarly, “pedestrian congestion” improves local business opportunities and sales.
- Limitations or prohibitions on low-intensity or low-density land uses such as drive-throughs. Depending on where the MMA boundary is located, this could make some existing businesses or land uses non-conforming. Depending on how this requirement is implemented, it also would potentially limit the ability of some existing low-intensity uses (light industrial uses) to expand in the future. At the same time, industrial uses are allowed within an MMA as long as they are not the predominant use.

In addition to these impacts, provisions associated with the proximity of the MMA boundary to a state highway interchange are important. If an MMA is located within one-quarter mile of an interchange, the Oregon Department of Transportation (ODOT) must concur with the designation. This can represent another layer of complexity for establishing the MMA.

For the Liberty Park neighborhood, the MMA designation may or may not be the right tool for the following reasons:

- MMAs are created for situations where transportation requirements related to congestion are the primary hurdle to meeting land use goals, allowing communities to waive these requirements. Congestion is not an inhibitor of the kinds of development desired for this area, so other zoning tools may be more appropriate. At the same time, preliminary traffic analysis results show that intersections of OR 62 & OR 99 and Riverside Avenue and Stewart Avenue will not meet transportation mobility standards in the future. However, these areas are outside of the Liberty Park Neighborhood Plan area.
- Because the current project area boundary appears to be further than ¼ mile from the OR 62/99 interchange, the MMA boundary would likely need to extend beyond the current project planning area to meet the locational requirements of an MMA.
- Average lot sizes in the Liberty Park neighborhood for single-family homes are roughly 6,500 square feet, or 6.6 units per acre. There are a number of duplexes and some multifamily units in the area that increase the overall density, but the requirement of 12 dwelling units per acre would be a significant change from the area's current urban form. However, this level of density would be consistent with the City's General Land Use Plan (GLUP) designations in many areas. The Urban Medium Density (UM) and UH GLUP designations within the central part of Liberty Park allow for multi-family development of 15, 20, and 30 units per acre. Additionally, commercial zones allow for apartments to be constructed at 30 units per acre or greater, with or without mixed-uses.
- Additionally, many of the businesses in the area are auto-oriented and include large parking lots and/or drive-throughs, which are prohibited by the MMA. These uses would become nonconforming and would be subject to the nonconforming standards limiting future expansion.

Outreach and NAC Feedback

On December 4th and 5th, 2018, the City hosted a public open house and held NAC Meeting #3 to review the land use and transportation recommendations described in this memo. The following is a summary of feedback received on the land use recommendations which were not already addressed in the memo:

- Court and McAndrews (southeast corner) great site for redevelopment.
- Need increased code enforcement of the greenway, then expansion.
- Need “Missing Middle” housing, townhouses, new houses or apartments in general.
- Need a home repair program to help with neighborhood equity.
- Tree removal/trimming service to help with old trees causing problems.
- Add nodal development considerations.
- A Community Center is needed.
- Identify examples of neighborhoods with similar revitalization stories, such as Eugene, OR (Whitaker neighborhood), Greenville, SC, Bend, OR, and Oakland, CA .
- Use Liberty Park as a model for other neighborhoods in City

These ideas will be further assessed and incorporated in the draft Tech Memo #4 (Liberty Park Vision).

Transportation Needs and Opportunities Assessment

The project team determined high-level transportation needs in the neighborhood based on public feedback received to-date, as well as information from Medford’s Draft 2018 TSP Update (currently in the process of being adopted by the City).

In the Liberty Park neighborhood, Riverside Avenue/OR 99 provides primary north connectivity while Court Street and Central Avenue provide primary south connectivity. Other north-south routes include Beatty Street and Niantic Street. Jackson Street and McAndrews Road are the primary east-west routes, and Manzanita Street and Edwards Street serve as secondary east-west routes through the neighborhood. Due to the presence of Bear Creek and Interstate 5 on the eastern edge of the neighborhood, and the railroad on the western edge of the neighborhood, east-west connectivity is fairly limited. Preliminary outreach has also highlighted gaps in north-south connectivity between downtown Medford and Liberty Park. Needs are summarized below:

1. **Safe, Accessible Facilities for Transportation Users:** The transportation network in Liberty Park lacks a complete network of facilities that are accessible to people walking, bicycling, driving and using public transit. The sidewalk network is incomplete in the neighborhood, and very limited bicycle facilities currently exist. As documented in the Medford 2018 TSP update, the main arterial streets (Riverside Ave, Court St, and Central Ave) rate “high” for Pedestrian and Bicycle Levels of Traffic Stress. Neighborhood residents have expressed concerns about the ability to use these facilities safely.
2. **Oregon Route 99:** OR-99 along Riverside Avenue and Court Street/Central Avenue has high traffic volumes and high speeds, making it an unpleasant corridor to walk in, bike along, or cross. The three existing travel lanes are approximately 13 feet wide.
3. **Limited Crossing Facilities:** There are very limited marked crossing facilities in Liberty Park, particularly across OR-99 and Jackson Street, as well as Manzanita and Edwards Street, which make it more difficult to cross busy streets.
4. **Downtown Connectivity Gap:** There is a connectivity gap between downtown Medford amenities and Liberty Park in terms of convenient, accessible walking and biking facilities for people of all ages and abilities. Developing more continuity between Liberty Park and downtown is a community priority. Presently, there is no crossing facility on E Jackson Street between Riverside Avenue and Central Avenue, a gap of more than 1,000 feet (east to west) and 60 feet wide at many of the crossing points.
5. **Bear Creek Greenway Connectivity:** Between McAndrews Road and Jackson Street there is no defined connection from Liberty Park to the Bear Creek Greenway, an important off-street shared-use facility that provides connections to nature.

There are seven proposed transportation improvement projects identified in the 2018-2038 TSP within the Liberty Park Neighborhood area. Projects in the 2018 TSP Update are proposed as a Tier 1 or Tier 2 project meaning funded and unfunded through the year 2038, respectively. All projects proposed within

the Liberty Park neighborhood are proposed as a Tier 2 — *currently unfunded*— transportation improvement. These TSP projects, which are not presented in a specific order of priority, include:

1. **462** Edwards Street, Court Street/Central Avenue to Riverside Avenue - Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks
2. **163** McAndrews Road & Riverside Avenue - Intersection improvements such as re-striping westbound approach to one through, a shared through/right, and a right-turn lane, signal modifications, and second westbound right-turn lane when needed
3. **B3** Beatty Street, Manzanita Street, Niantic Street, Maple Street, Bartlett Street from McAndrews Road to Jackson Street - Sign and Stripe Neighborhood Bikeway
4. **B13** Jackson Street, Central Avenue to East of Pearl Street - Reconfigure to Provide Bike Facilities
5. **B16** Court Street, Rossanley Drive to Edwards Street - Reconfigure to Provide Bike Facilities
6. **B17** Central Avenue, McAndrews Road to Jackson Street - Reconfigure to Provide Bike Facilities
7. **B155** Riverside Avenue, Highway 62 to Barnett Road – Reconfigure to Provide Bike Facilities

Building on these TSP projects, the project team identified a number of multimodal projects based on needs identified by the Liberty Park community, city staff, and consultant team experience. These projects have not been evaluated or prioritized; projects will be evaluated and prioritized at a later phase of the project and presented in Technical Memorandum #4: Preferred Vision.

Appendix A provides a description of many of the proposed infrastructure treatments described in the following sections.

Pedestrian Network and Crossing Needs

Desired modifications to the existing pedestrian network and corresponding pedestrian capital improvements are highlighted in Figure 12 below. The figure represents community desires. All locations will have to have an engineering study completed, in accordance with the MUTCD, prior to installation of markings or enhancements. All projects contemplated for the neighborhood would likely be eligible for the Oregon Safe Routes to School Program infrastructure grants.

A number of marked crossings are proposed within the neighborhood, with “enhanced” crossings on difficult-to-cross arterial streets. Enhanced crossings could have flashing beacons, curb bulb outs, or other treatments to increase driver compliance and safety. Enhanced crossings are recommended at key intersections; drivers tend to ignore crosswalks and other crossing enhancements if they occur too frequently in a given corridor. **The exact location and type of crossing treatment will be subject to further evaluation before inclusion in the Liberty Park Neighborhood Plan.**

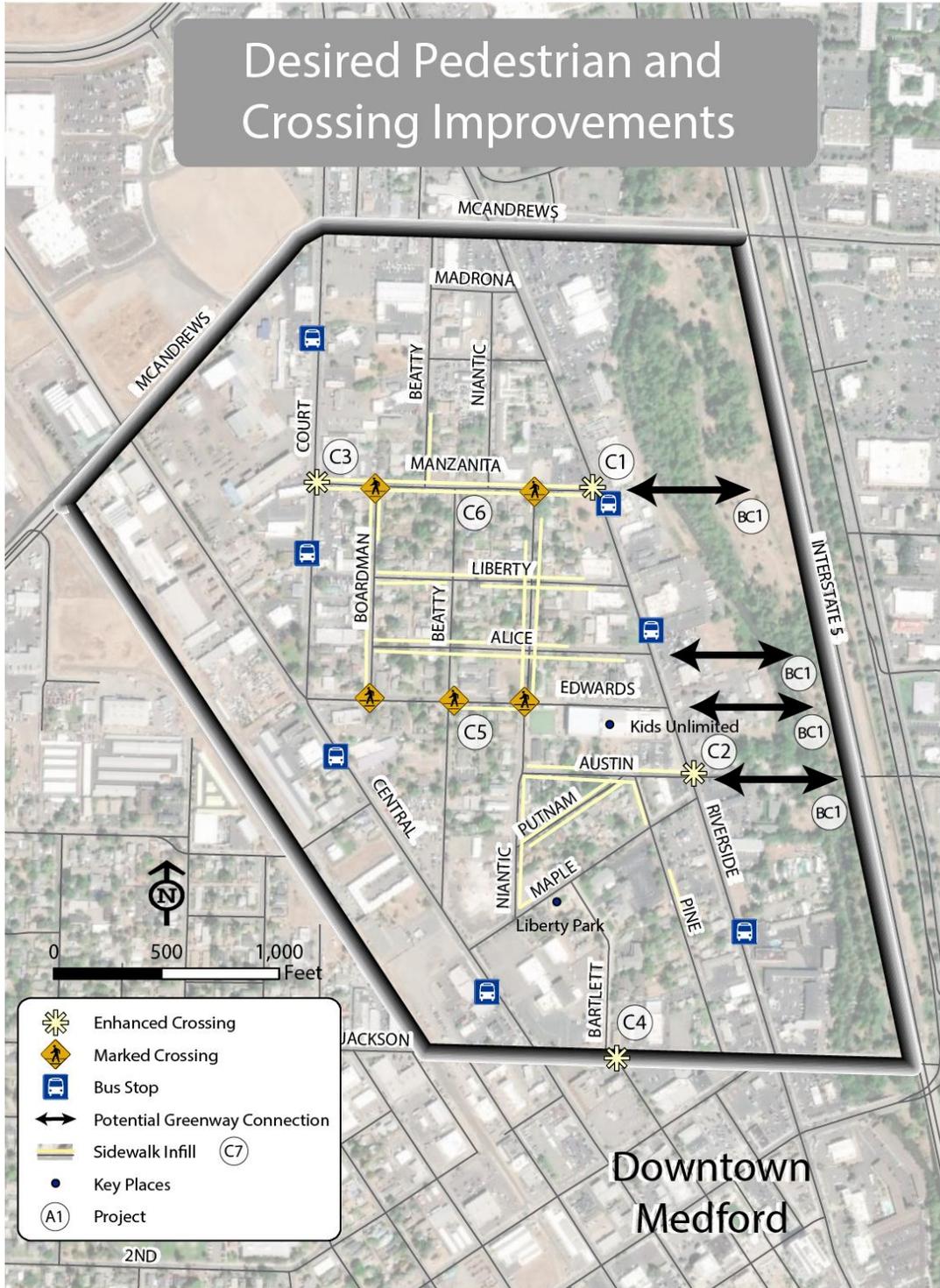
Some bus stops in the corridor could be relocated slightly to be closer to the proposed enhanced crossings at Manzanita/Court and Riverside/Central.

There is approximately 9,000 linear feet of sidewalk missing from the neighborhood, as shown in Figure 12.

Public feedback also indicated interest in using the alleyways present in the neighborhood for pedestrian or bicycling infrastructure. No alley Neighborhood Bikeway improvements are proposed due to the varying condition and uses of alleys in the neighborhood (e.g., some are paved, many are not, and

property owners have encroached on alleys in some instances). However, certain alleys may be identified as key for pedestrian or bicycling connections through additional outreach or NAC input.

Figure 12. Desired Pedestrian Network and Crossing Needs



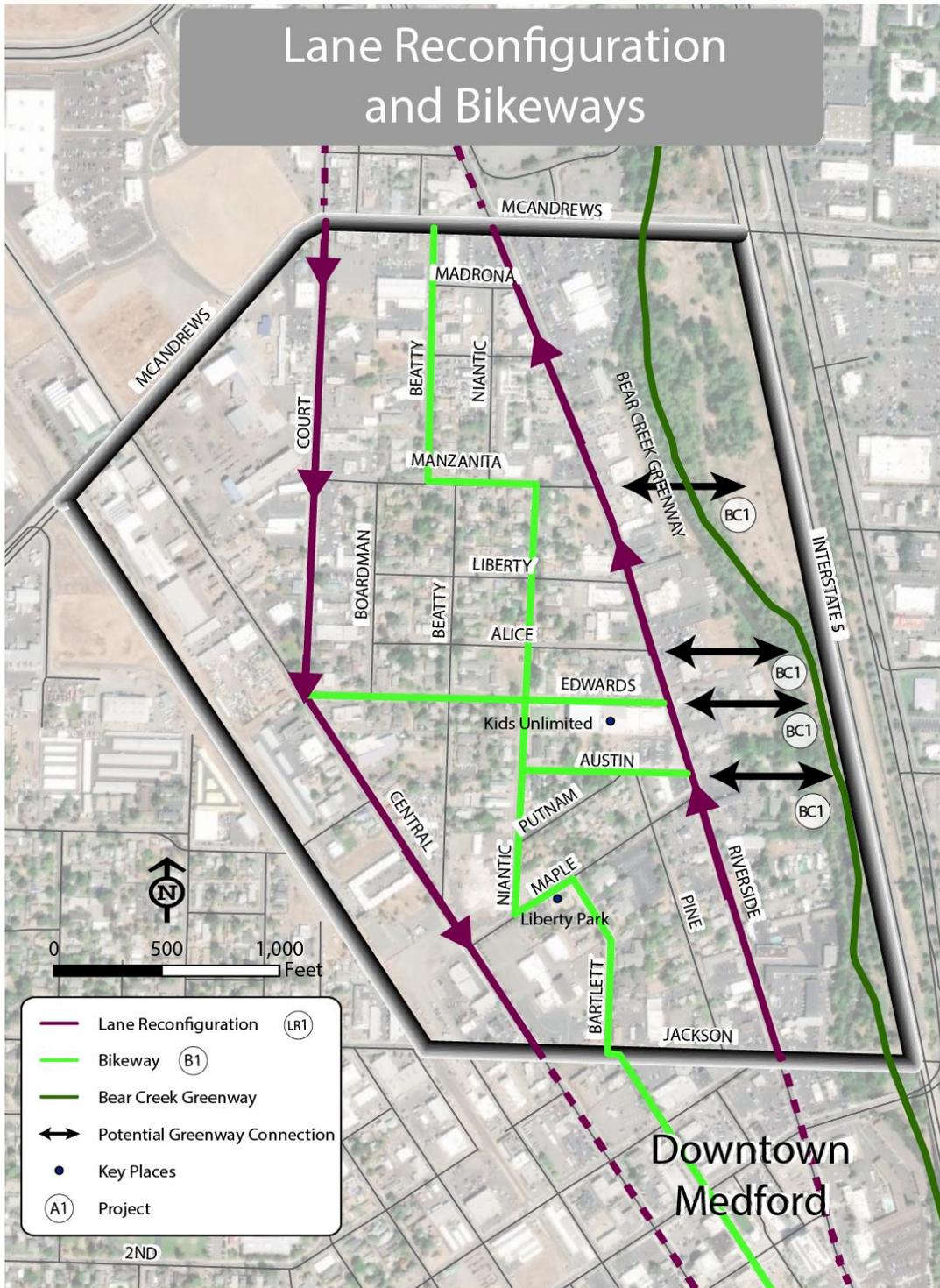
Bicycle Network

Figure 13 shows proposed Neighborhood Bikeway improvements for the Liberty Park neighborhood. The proposed routing on Edwards Street is consistent with the Medford TSP Update. Court/Central and Riverside would have bike facilities as part of a proposed lane reconfiguration (discussed in the next section). Neighborhood Bikeway treatments could include:

- Wayfinding signage
- Sharrows to indicate presence of cyclists to drivers and to help guide cyclists on the preferred route
- Traffic calming treatments

Public feedback also indicated interest in using the alleyways present in the neighborhood for pedestrian or bicycling infrastructure. No alley Neighborhood Bikeway improvements are proposed due to the varying condition and uses of alleys in the neighborhood (e.g., some are paved, many are not, and property owners have encroached on alleys in some instances). However, certain alleys may be identified as key for pedestrian or bicycling connections through additional outreach or NAC input.

Figure 13. Neighborhood Bikeways and Lane Reconfiguration



Connections to the Bear Creek Greenway

Currently, the Liberty Park neighborhood does not have easy access to the Bear Creek Greenway, an important local and regional recreation facility. The project team has proposed considering a new connection to the Greenway, with options shown on Figure 13. Ideally, the connection would be accomplished approximately midway between Jackson and McAndrews Streets to enhance connectivity to the Greenway (there is presently access to the Greenway at its intersections with both McAndrews and Jackson). An enhanced crossing is also desired at the chosen location to improve the crossing at Riverside.

There are no public rights-of-way east of Riverside. However, a small parcel of land is owned by the County directly east of Austin Street, potentially facilitating a connection at this location. A bridge would be required over Bear Creek to reach the Greenway at all locations shown in Figure 13. If a crossing project is carried forward, the project team will create a cost estimate in Technical Memorandum #4.

OR 99 (Central Ave/Court Street and Riverside Avenue) Lane Reconfiguration

A key community desire that emerged from outreach is to look at reconfiguring OR 99, which operates as a couplet (Central/Court southbound, Riverside northbound) and effectively bounds the neighborhood to the east and west. The current street configuration is three through lanes in each direction of the couplet, with posted speeds of 30 MPH; anecdotal evidence suggests many drivers speed on both these roadways. The streets are also difficult to cross for pedestrians, except at existing traffic signals, and do not have dedicated bicycle facilities (however, there are sharrows marked on Court/Central). The streets are designed to move car traffic efficiently through the corridor, at the expense of creating an inviting pedestrian environment that is desired by the neighborhood.

The project team evaluated traffic impacts for different lane reconfiguration options, including: 1) a baseline, “no change” scenario which preserves the existing lane configuration; 2) a two-way reconfiguration with a center turn lane; and 3) a two-lane reconfiguration (two through lanes on each roadway instead of three). The analysis showed that both the two-way and two-lane options would create traffic issues at several key intersections. However, the baseline, “no change” scenario also showed potential future traffic issues at some intersections. Any future changes to the roadway will need to be coordinated with the Oregon Department of Transportation (ODOT) and the City of Medford to develop mitigation for these traffic impacts.

The two-way option, which would turn Court/Central and Riverside into two-way instead of one-way streets, would be prohibitively expensive and difficult to implement based on the preliminary analysis. As a result, this option is not considered further in this memorandum.

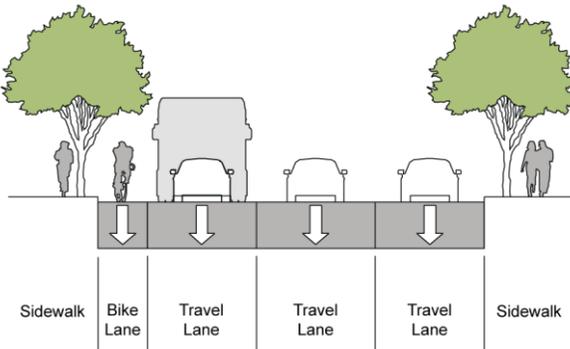
Based on the traffic analysis results, and needs identified by the neighborhood, the project team prepared four different reconfiguration options for Court/Central and Riverside for review by the NAC and the public, described below. These options were created with the OR 99 corridor within the Liberty Park neighborhood in mind, but it is assumed that bicycle and pedestrian facilities could be continued further north and south in the corridor.

After the NAC and public have reviewed the options, the project team will develop a preferred long-term vision for OR 99 and present it in Technical Memorandum #4.

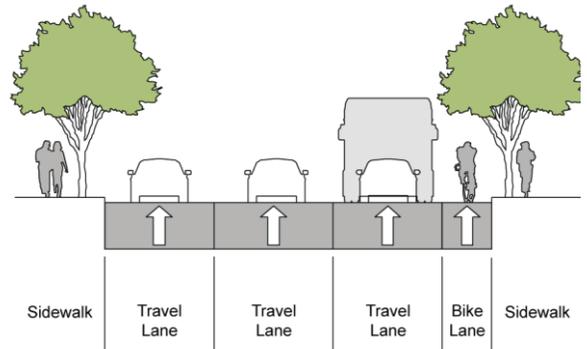
Option 1 – Three Travel Lanes with Reduced Width and Bike Lane

Retain existing three travel lanes in each direction, but narrow lane width to accommodate a bicycle lane.

Court/Central



Riverside



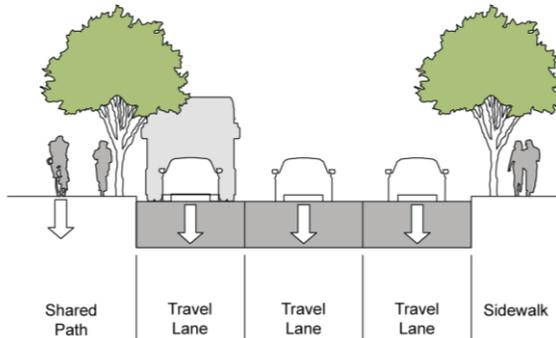
Considerations:

- Would not reduce number of travel lanes; the existing three lanes contributes to an “auto-oriented” corridor, contrary to neighborhood desires. Would also continue to make crossings uncomfortable and challenging for pedestrians, except at signalized intersections.
- Bike lane would likely be used by confident cyclists, but not by children or those who are uncomfortable riding next to vehicle traffic. Buses in the corridor would stop in the bike lane, creating a conflict.
- Lowest-cost option and is unlikely to negatively affect vehicle operations at intersections in the corridor.

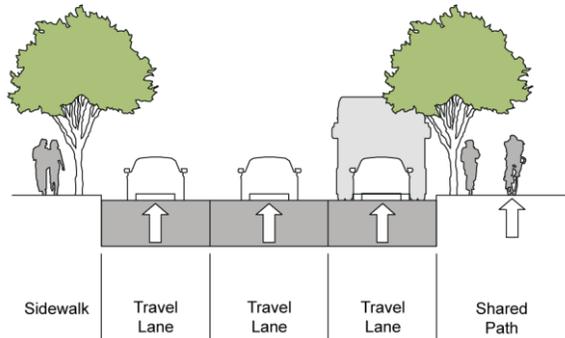
Option 2 – Three Travel Lanes with Reduced Width and Shared Use Path

Retain existing three travel lanes in each direction, narrow lanes to accommodate a shared path in each direction.

Court/Central



Riverside



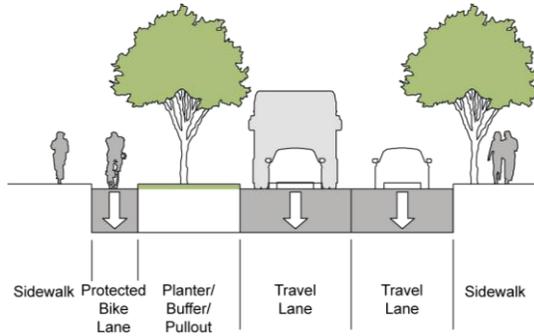
Considerations:

- Would not reduce number of travel lanes; the existing three lanes contributes to an “auto-oriented” corridor, contrary to neighborhood desires. Would also continue to make crossings uncomfortable and challenging for pedestrians except, at signalized intersections.
- Shared path would be a more comfortable facility for users of all ages and abilities.
- This option would include minimal buffering between the shared path and travel lanes.
- Shared path users from the Liberty Park neighborhood would be required to cross the both Court/Central and Riverside to reach the shared path; left-side shared paths would address this issue, but they are likely infeasible. Left-side bikeways can be confusing to drivers and cyclists alike, and if the facility is carried further south or north, it would need to continue to be on the left side of the roadway or a crossing would need to be facilitated.
- The shared path is likely to be used as a two-way facility by cyclists. Drivers turning onto or out of driveways in the corridor may not expect cyclists to be coming the opposite direction of traffic, creating a potential safety hazard.
- This option would be more costly than Option 1. There are a large number of driveways in both corridors. Driveway consolidation would be desired to improve the function/safety of the shared path. Existing utility poles may need to be relocated.

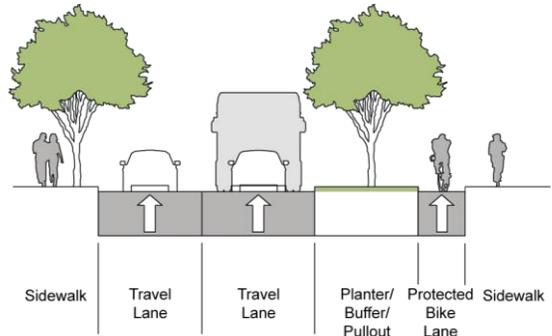
Option 3 – Two Travel Lanes with Buffered Bike Lane

Reduce to two travel lanes in each direction, construct protected bike lane with a landscaping buffer between the travel lanes and bike lane/sidewalk.

Court/Central



Riverside



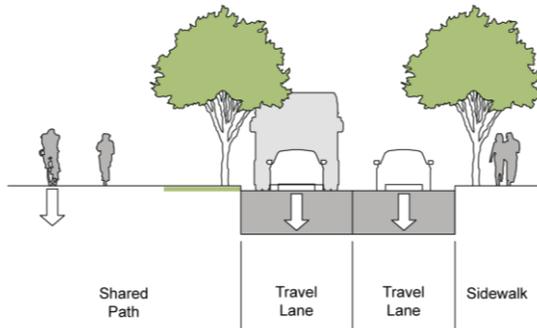
Considerations:

- Would reduce travel lanes to two in each direction; landscaping could help visually narrow the corridor further to slow traffic.
- Protected bike lane would be more comfortable and safe for cyclists. Similar to Option 2, cyclists from the Liberty Park neighborhood would be required to cross the street to access the facility.
- Protected bike lane and landscape buffer would improve the pedestrian environment.
- The landscaping buffer could be converted to a bus-only pullout at bus stop locations to allow the bus to exit traffic. The bus would not conflict with cyclists.
- There are a large number of driveways in both corridors. Driveway consolidation would be desired to improve the function/safety of the protected bike lane. Existing utility poles may need to be relocated.
- This option could require substantial roadway reconstruction, including installation of new curb, pavement, and landscaping within the existing roadbed. However, many communities have created buffers with large potted plants, traffic delineators, or through simple roadway paint which would reduce costs.

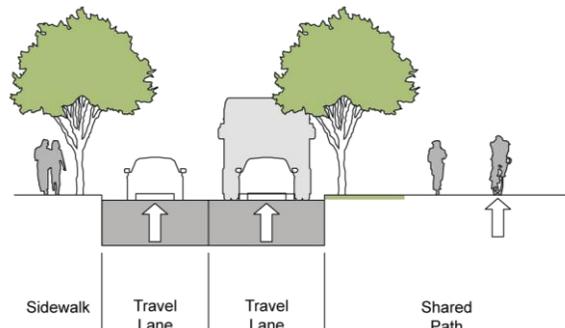
Option 4 – Two Travel Lanes with Buffered Shared Use Path

Reduce to two travel lanes in each direction, construct shared path buffered from travel lanes by landscaping.

Court/Central



Riverside



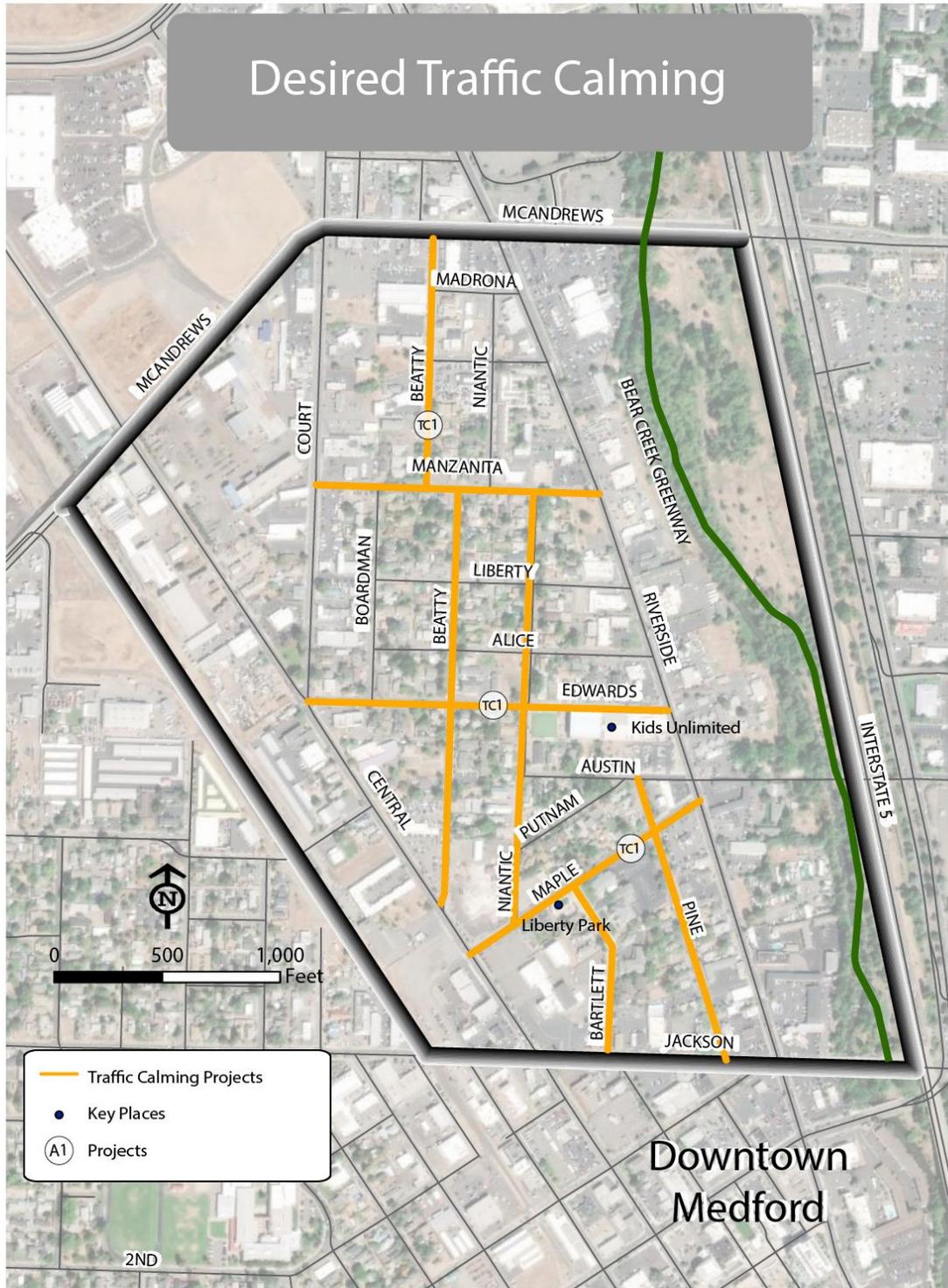
Considerations:

- Would reduce travel lanes to two in each direction; landscaping could help visually narrow the corridor further to slow traffic.
- Shared path and landscape buffer would likely improve the pedestrian and cyclist comfort over other options.
- Similar to Option 2 and 3, cyclists and pedestrians from the Liberty Park neighborhood would be required to cross the street to access the shared path facility.
- The landscaping buffer could be converted to a bus-only pullout at bus stop locations to allow the bus to exit traffic. The bus would not conflict with cyclists.
- There are a large number of driveways in both corridors. Driveway consolidation would be desired to improve the function/safety of the shared path. Existing utility poles may need to be relocated.
- The shared path is likely to be used as a two-way facility by cyclists. Drivers turning onto or out of driveways in the corridor may not expect cyclists to be coming the opposite direction of traffic, creating a potential safety hazard.
- This option would require substantial roadway reconstruction, including installation of new curb, pavement, and landscaping within the existing roadbed. Cost could be mitigated by alternative buffer treatments as described for Option 3.

Traffic Calming

Figure 14 shows streets identified by the NAC and the public that could benefit from traffic calming measures. Many streets were noted as potential locations for traffic calming treatments. These streets were identified as having either speeding traffic, substantial traffic volumes, or other concerns that could warrant treatments to slow traffic. Neighborhood Bikeway and pedestrian crossing improvements often function as traffic calming as well.

Figure 14. Desired Traffic Calming Locations



Project Summary Table

Preliminary cost estimates are presented in the summary table for each project according to the following scale. “Order-of-magnitude” cost estimates will be created for the refined list of projects in Technical Memorandum #4.

\$ - <\$10,000

\$\$ - \$10,000 to \$100,000

\$\$\$ - \$100,000 to \$1,000,000

\$\$\$\$ - >\$1,000,000

The recommendations noted below are preliminary recommendations from the consultant team on whether a given project should be moved forward for further study and potential inclusion in the Liberty Park Neighborhood Plan. In all cases, the projects need further evaluation before being included in the Plan.

#	Project	Description	Cost Range	Consultant Team Recommendation	Notes
C1	Riverside Avenue at Manzanita Street	Implement an enhanced crossing treatment (e.g. high-visibility crosswalk and Leading Pedestrian Interval) across Riverside Avenue at the intersection of Manzanita Street	\$	Yes	Curb ramps may require replacement/construction, increasing costs.
C2	Riverside Avenue at Austin Street	Implement an enhanced crossing treatment (e.g. Rectangular Rapid Flashing Beacon or Pedestrian Hybrid Beacon) across Riverside Avenue at the intersection of Austin Street	\$\$\$	Yes	Key crossing for connection to Bear Creek Greenway (see below). Cost may be more substantial if curb ramps require replacement/ construction.

#	Project	Description	Cost Range	Consultant Team Recommendation	Notes
C3	Court Street at Manzanita Street	Implement an enhanced crossing treatment (e.g. Rectangular Rapid Flashing Beacon or Pedestrian Hybrid Beacon) at the intersection of Court Street and Manzanita Street	\$\$\$	Needs further study	Curb ramps may require replacement/construction, increasing costs.
C4	Jackson Street at Bartlett Street	Implement an enhanced crossing treatment (e.g. Rectangular Rapid Flashing Beacon or Pedestrian Hybrid Beacon) across E Jackson Street at the intersection of N Bartlett Street.	\$\$	Needs further study	Curb ramps may require replacement/construction, increasing costs.
C5	Edwards Street Corridor	Implement a marked crossing and signage on Edwards Street at the intersection of Boardman, Beatty, and/or Niantic Street	\$	Yes	Curb ramps may require replacement/construction, increasing costs.
C6	Manzanita Street Corridor	Implement a marked crossing and signage on Manzanita Street at the intersection of Boardman Street, Beatty Street, and/or Niantic Street.	\$	Yes	Curb ramps may require replacement/construction, increasing costs.
C7	Sidewalk infill (see figure)	Sidewalk infill where missing. Approximately 9,000 linear feet (1.7 miles) of sidewalk is missing	~\$750,000 per mile of new sidewalk	Yes	Sidewalk improvements can be made incrementally. For Memo #4, sidewalk infill projects can be

#	Project	Description	Cost Range	Consultant Team Recommendation	Notes
					prioritized and costed individually.
B1	Bikeway Improvements	Neighborhood-wide bikeway improvements identified in Figure 13. Treatments could include signage, pavement markings, and traffic calming treatments (see TC1 below).	\$\$	Yes	Final preferred bikeway network should be coordinated with traffic calming improvements. This cost considers just signage and pavement markings.
BC1	Connection to Bear Creek Greenway	Construction of pedestrian/cyclist connection from Riverside east to the Greenway. This project would require a bridge required to cross creek.	\$\$\$	Yes	Any location chosen will require purchase of right-of-way or easements to facilitate a path from Riverside to the Greenway.
TC1	Neighborhood-wide traffic calming	Varying costs depending on type of treatments chosen. Streets designated for traffic calming should be coordinated with the bikeway network to the extent possible.	\$ - \$\$	Yes.	Need to review traffic calming locations with stakeholders before recommending discrete projects
LR1 Option 1	Retain 3 lanes on OR 99, add bike lane	Retain current road configuration, but narrow lanes to accommodate a bike lane.	\$\$	Project team will make recommendation after	

#	Project	Description	Cost Range	Consultant Team Recommendation	Notes
LR1 Option 2	Retain 3 lanes on OR 99, add shared path	Retain current road configuration, add a shared path to accommodate cyclists and pedestrians	\$\$\$\$	stakeholder review of options.	Substantial constraints include utility poles, many driveways in both corridors
LR1 Option 3	Two travel lanes, protected bike lane	Reduce to two travel lanes each direction, add landscaping buffer and protected bike lane	\$\$\$\$		
LR1 Option 4	Two travel lanes, shared path	Reduce to two travel lanes each direction, add landscaping buffer and shared path	\$\$\$\$		Substantial constraints include utility poles, many driveways in both corridors

Outreach and NAC Feedback

On December 4th and 5th, 2018, the City hosted a public open house and held NAC Meeting #3 to review the transportation projects in Tech Memo #3. The following is a summary of feedback received:

- Enhanced Crossings: the NAC expressed preferences for the following crossing locations:
 - Riverside at Austin
 - Court/Central:
 - Enhance existing crossings at Edwards
 - Potential crossing at Beatty
 - Crossing at Clark to facilitate pedestrian access across the railroad tracks west of the neighborhood
 - Jackson/Bartlett
 - Consider moving bus stops to more closely align with crossings
- Sidewalks: The City indicates that all sidewalk gaps on both sides of the road should be filled within the neighborhood.
- Bike infrastructure: public and NAC feedback indicates that the proposed bikeway in Technical Memorandum #3 through the neighborhood is the right routing. However, bike lanes are the preferred treatment on Edwards and Manzanita. Jacobs will explore an alleyway project in addition to the other improvements proposed.
 - Bike/ped alleyway pilot project (Jacobs will explore possible candidate alleys)
 - Bike lanes on Edwards, Manzanita
 - Neighborhood bikeway as proposed in TM3 is good
- Traffic Calming: the NAC expressed concern about the volume of traffic and speeding traffic on all streets identified in Technical Memo #3. The NAC also suggested:
 - Consider speed limit reductions on OR 99
 - Consider speed limit reductions, if possible, on neighborhood streets to 20 MPH
 - Jacobs to propose further traffic calming treatments based on NAC feedback
- Greenway Access: Austin is likely the most feasible connection point of those proposed and should be explored further.
- The NAC expressed a preference for Option 3 (two travel lanes + buffered bike lane) Lane Reconfiguration.

This feedback, and that of agency partners like ODOT, will be incorporated into the transportation projects contained in the Preferred Vision in Technical Memo #4.

Appendix A: Descriptions of Transportation Treatments

Neighborhood Greenway/Bikeway: Bicycle and pedestrian priority residential streets with low volumes of motor vehicle traffic and low speeds.



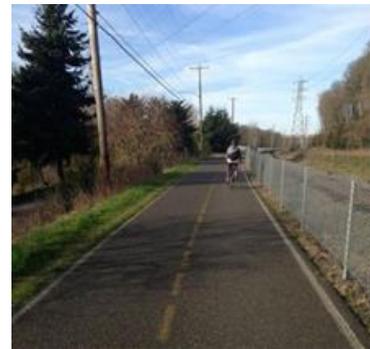
Bike Lane: Bicycle-only travel lanes that are demarcated from automobile lanes using paint and/or striping.



Buffered/Protected Bike Lane: A bicycle lane that is similar to a conventional bike lane but designed so that it provides a more protected and comfortable space for cyclists. Sometimes buffered from traffic by landscaping, other features.



Shared Path: A separated pathway that supports multiple recreation and transportation opportunities, such as walking, bicycling, inline skating, people in wheelchairs, and other mobility devices.



Enhanced Crossing: Pedestrian-only crossings that provide more protection to vulnerable non-motorized road users while crossing the street.

- **Leading Pedestrian Interval (LPI):** A pedestrian signal that gives pedestrians a head-start crossing the street before the traffic signal turns green for drivers.
- **High Visibility Crosswalk:** Reflective street or roadway markings that emphasize pedestrian crossing locations.
- **Raised Pedestrian Crossing:** Crosswalks that raise the level of the roadway even with the sidewalk, providing a level pedestrian path and requiring drivers to slow down.
- **Bulb-Out/Curb Extensions:** An extension of the curb or sidewalk into the street, shortening the crossing distance for pedestrians and reducing driver speed.
- **Crossing Island (Pedestrian Refuge):** A protected area in the middle of a crosswalk, often in a median, allowing pedestrians to stop while crossing the street.



- **Rapid Rectangular Flashing Beacon (RRFB):** A crossing treatment that includes signs that have a pedestrian-activated “strobe-light” flashing pattern to notify drivers that a pedestrian or bicyclist is attempting to cross the street.



- **Pedestrian Hybrid Beacon:** A pedestrian activated signal that is unlit when not in use. Once activated, it begins with a yellow light alerting drivers to slow down, and then displays a solid red light requiring drivers to stop while a pedestrian crosses the street. The beacon flashes red to signal that drivers may proceed once pedestrians have crossed the street.



Rapid Rectangular Flashing Beacon (RRFB): A crossing treatment that includes signs that have a pedestrian-activated “strobe-light” flashing pattern to notify drivers that a pedestrian or bicyclist is attempting to cross the street. RRFB’s are often used at midblock crossings, on streets with higher traffic volumes.



Traffic Calming: The use of physical measures that reduce negative effects of motor vehicle use and improve conditions for non-motorized users.

- **Chicanes:** A series of alternating curves or lane shifts in a roadway, intended to reduce motor-vehicle speeds.
- **Reduced Curb Radii:** A street corner that is reconstructed with a smaller radius to reduce vehicle turning speeds.



Source: Scott Wainright, fhwa.gov

