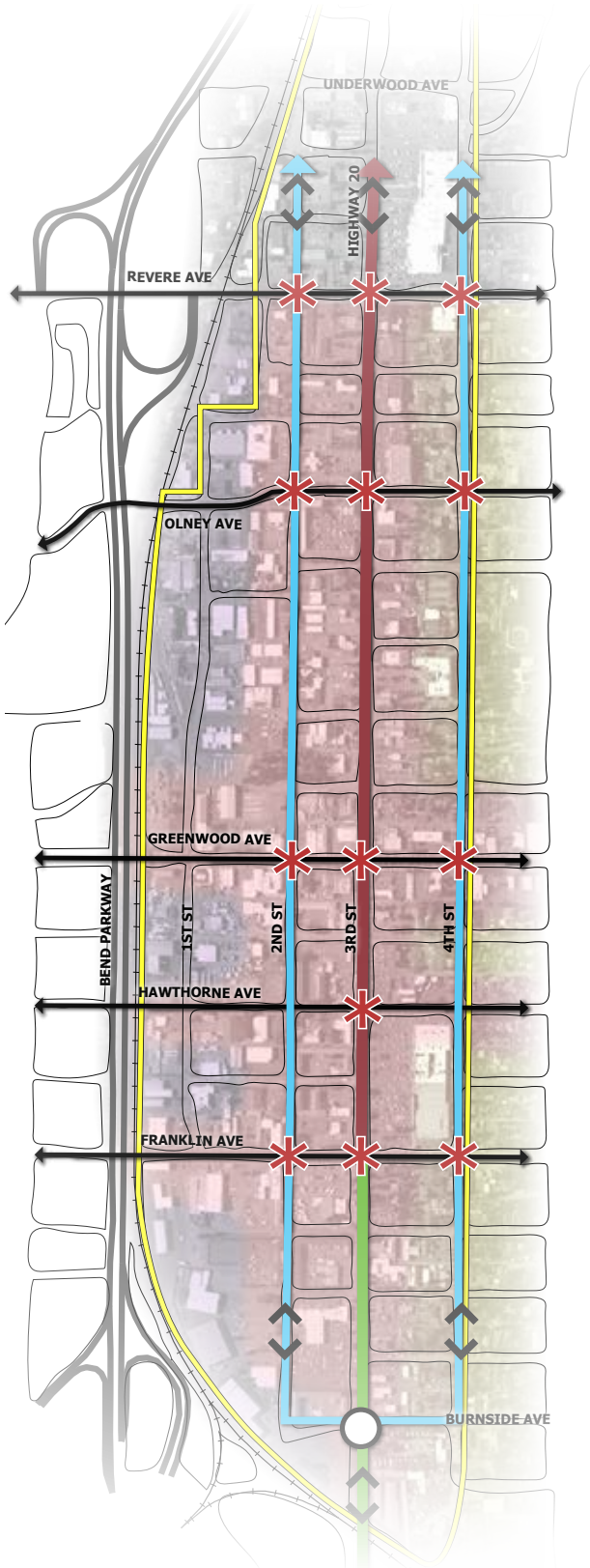




BEND CENTRAL DISTRICT

Multimodal Mixed Use Area Plan



July 2014



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PROJECT OVERVIEW

Introduction

THE CITY OF BEND was awarded a grant from the Oregon Transportation and Growth Management (TGM) Program to develop a plan for the Bend Central District Multi-Modal Mixed Use Area (MMA). An MMA designation may be applied by local governments to downtowns, town centers, main streets, or other areas where the local government determines that there is:

- Potential for high-quality connectivity to and within the area by modes of transportation other than the automobile;
- A denser level of development of a variety of commercial and residential uses than in surrounding areas;
- A desire to encourage these characteristics through development standards; and
- An understanding that increased automobile congestion within and around the MMA is acceptable as a condition of the mixed use area.

The intent of an MMA designation is to help revitalize and facilitate future redevelopment in the area to create a vibrant district. An MMA plan also considers ways to improve the transportation system to support growth, with a focus on identifying necessary enhancements for people traveling in the area by bike, bus, car, foot, or freight truck.

This project builds on work previously completed for the Bend Central Area Plan (CAP) and focuses specifically on an area between the Bend Parkway and 4th Street and between approximately Revere and Burnside Streets. The MMA Plan to be prepared as part of this effort will look at

ways to improve connections for people traveling in the area by foot, bike, bus, car, or freight truck. It also will look at ways to develop the area in the future to include a combination of housing, businesses, shops and other uses to create a distinct and vibrant district. For example, some community members have suggested that a portion of the area could become a new arts or cultural district for the City in the future. The project will define a potential MMA boundary and will include amendments to the Bend General Plan (comprehensive plan), Transportation System Plan (TSP), and Development Code to allow future land use changes and redevelopment in the MMA. While a primary purpose of this project is to lay the groundwork for establishing an MMA, applying an MMA in this area is not a foregone conclusion.

Project Goals and Objectives

The goals and objectives for the Bend Central District MMA have guided development, design, and evaluation of the MMA transportation and land use concepts and continue to inform recommendations about whether and how to implement future plans for the MMA. Two types of goals and objectives were established for the project. Project goals and objectives focus on establishing the MMA and ensuring a comprehensive and meaningful public involvement process. The study area goals and objectives focus on the design of transportation system that serves all users, creating a mix of land uses and supportive urban design concepts and development of a parking strategy and management plan for the area. A detailed list of all goals and objectives can be found in Technical Memorandum #3.



The goals and objectives also were used to develop a set of criteria for evaluating different transportation network alternatives for the MMA. That process is described in further detail later in this document.

Study area boundary map and description

Figure 1 shows the location of the Bend Central District (BCD). The BCD is adjacent to Bend's existing downtown core. It is roughly 206 acres in size, bounded by the Bend Parkway (OR 97) to the west, NE Revere Avenue to the north, NE 4th Street to the east, and the rail line to the south. This area is similar to the "3rd Street Corridor" described in the Bend Central Area Plan, but it does not include areas to the north of NE Revere Avenue or south across the railroad tracks. While it is centered on the 3rd Street Corridor, it should be considered a larger planning district that encompasses more than just the area along 3rd Street.

The BCD currently is zoned predominantly for commercial and industrial land uses. These zoning designations support 3rd Street's former role as US Highway 97, before the Parkway was built. However, these zoning designations may not allow the development flexibility needed to support the recommendations and vision in the Central Area Plan and the BCD project. This project will consider new zoning designations that will more fully support the goals and objectives identified for the BCD.

More information about existing conditions including comprehensive plan designations, zoning, and land uses can be found in Technical Memorandum #1.

Public outreach and Plan development process

The MMA planning process has been conducted through a collaborative effort among City of Bend and Oregon Department of Transportation (ODOT) staff, a consulting team, Project Team (PT), a Technical Advisory committee (TAC), the City's Planning Commission, City Council and other community members. City and ODOT staff worked with the consulting team to evaluate conditions in the study area and formulate land use and transportation recommendations. Two advisory committees - the PT and TAC - review and advise on key findings and recommendations. Other community members have also provided input on these options and recommendations via the project website, public workshops and other public forums. Staff and the

consultant team have taken this feedback into account as they further refined project recommendations. Ultimately, the City's Planning Commission and City Council will review recommendations by staff and decide if and how to implement them.

At the outset of the project, the City of Bend established a public involvement program for the Bend Central District MMA project to ensure that the public, local businesses, residents and other stakeholders are educated about MMAs and have multiple opportunities to participate in the project's decision-making process. Public involvement events to date include the following:

- Project Team and Technical Advisory Committee meetings
- Three community workshops
- Articles in local papers
- Meeting flyers posted in a variety of public gathering places and local businesses in advance of each public workshop
- Meeting announcements via e-mails, select postcard mailings and notice in the Bend Bulletin
- Translation, special accommodations, and graphics were available upon request at all meetings (provided through City or partner agencies).
- Eight stakeholder interviews

Key components of the MMA Plan

This memorandum presents the recommendations for the MMA Plan, including the MMA boundary, land use and transportation elements, and implementation steps. To support and advance the MMA, the Plan proposes enhancements to multimodal conditions in the Bend Central District as follows:

- Near term pedestrian and bicycle projects
- Proposed transportation network, including conceptual street designs, intersection controls, and pedestrian, bicycle and transit strategies that could be implemented in the MMA
- Enhanced east-west bicycle and pedestrian connectivity
- Parking requirements and management
- Transportation demand management strategies
- Policy and code amendments to implement the Plan
- Other implementation strategies, including recommendations for further monitoring of state highway conditions as needed to address potential significant safety or mobility issues.

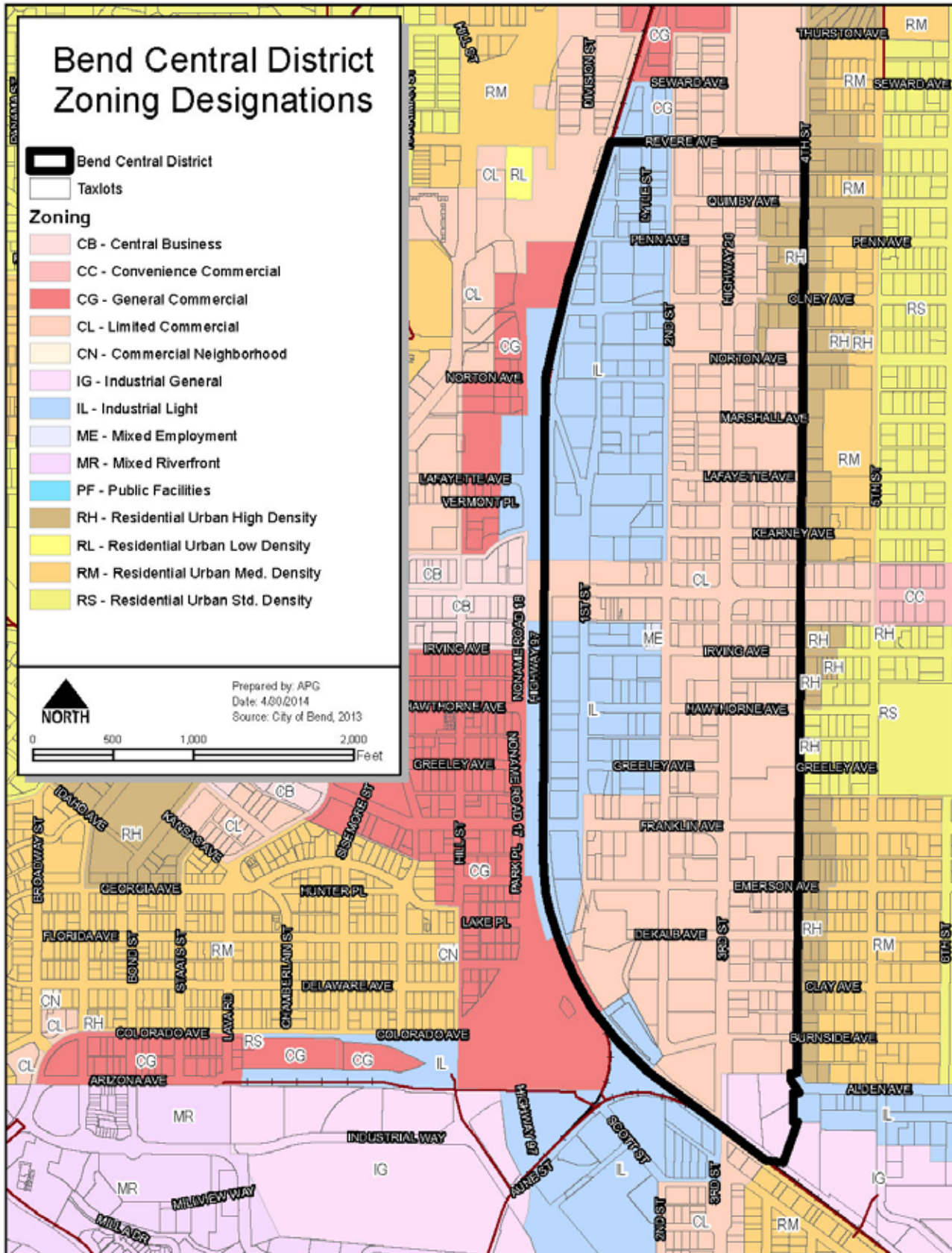


Figure 1 - Bend Central District and Zoning Designations

Table 1 - MMA Land Use and Other Requirements

<input type="checkbox"/>	An MMA must meet each requirement in this column
<input type="checkbox"/>	MMA Boundary (10)(b)(A)
<input type="checkbox"/>	MMA entirely within a UGB (10)(b)(B)
<input type="checkbox"/>	Adopted plans & regulations that allow specified uses and require certain development standards: (10)(b)(C)
<input type="checkbox"/>	An MMA must meet each requirement in this column
<input type="checkbox"/>	Allow a concentration of a variety of uses, including: (8)(b)(A)
<input type="checkbox"/>	An MMA must meet each requirement in this column
<input type="checkbox"/>	Allow medium to high density residential development at 12 units per acre or more (8)(b)(A)(i)
<input type="checkbox"/>	Allow offices or office buildings (8)(b)(A)(ii)
<input type="checkbox"/>	Allow retail stores and services (8)(b)(A)(iii)
<input type="checkbox"/>	Allow restaurants (8)(b)(A)(iv)
<input type="checkbox"/>	Allow public open space or private open space open to the public (8)(b)(A)(v)
<input type="checkbox"/>	Allow civic or cultural uses (8)(b)(B)
<input type="checkbox"/>	Allow core commercial area with multi-story buildings (8)(b)(C)
<input type="checkbox"/>	Require buildings and building entrances to be oriented to streets (8)(b)(D)
<input type="checkbox"/>	Require street connections & crossings to access center (8)(b)(E)
<input type="checkbox"/>	Require pedestrian-centric network of streets & ways within center (8)(b)(F)
<input type="checkbox"/>	Require one or more transit stops in areas with transit service (8)(b)(G)
<input type="checkbox"/>	Limit or prohibit low-intensity uses e.g. drive through services (8)(b)(H)
<input type="checkbox"/>	Do not require off-street parking, or require less parking than other areas (10)(b)(D)
<input type="checkbox"/>	Located at least ¼ mile from an interchange, adopted in an IAMP, or with concurrence (10)(b)(E)
<input type="checkbox"/>	An MMA must meet at least one requirement in this column
<input type="checkbox"/>	Located at least ¼ mile from a ramp terminal intersection (10)(b)(E)(i)
<input type="checkbox"/>	Located within the area of, and consistent with an adopted IAMP (10)(b)(E)(ii)
<input type="checkbox"/>	Written concurrence with the MMA provided by the mainline facility provider (10)(b)(E)(iii)

MMA BOUNDARY RECOMMENDATION

MMA Intent and Requirements

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. 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. Table 1 summarizes those requirements.

Given those requirements, application of an MMA would have a number of different implications for existing and future land uses.

- Allow for a wide range of retail, commercial, office and other uses. This is generally consistent with the vision established in the CAP and consistent with the types of uses allowed throughout the existing CL (Limited Commercial) zone. Meeting this requirement would broaden the set of uses currently allowed in areas zoned as Light Industrial but generally would provide enhanced opportunities for existing and future property owners in those areas. For example, industrial users could establish associated retail uses and light industrial uses could continue to be allowed, including uses such as software development, computer sales and repair, bicycle and manufacture sales, beverage and food production and others.
- Provide for medium to high density housing and allow for residential development at a density of 12 housing units per acre or higher. This also is consistent with the CAP recommendations, which assumed housing development at substantially higher densities. Along the eastern edge of the BCD, this would represent a shift in density but would be consistent with the density currently allowed in the area zoned for high density residential between Norton and Quimby Avenues.
- Require less parking than in other areas. This would represent a shift in comparison to current development patterns but likely would be necessary to achieve the development projections assumed in the CAP. Reducing minimum requirements would likely benefit many property owners from a redevelopment cost perspective and would not preclude private property owners from providing more than parking than required. Unless the City establishes relatively aggressive maximum off-street parking require-

ments or requires construction of parking structures, requiring less parking in the MMA by itself would not be expected to adversely impact existing property owners.

- Assume 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.
- Limit or prohibit 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, the CAP envisions a shift away from those types of uses to some degree.

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. At the same time, ODOT staff notes that this may not be a significant issue and they currently do not see any major barriers to establishing an MMA in relatively close proximity to existing interchanges in the area (at Revere and Colorado Avenues). This may be particularly true in the vicinity of the Colorado interchange where development within the MMA may have a minimal influence on operations the interchange. This and other issues are reflected in the discussion of MMA boundary alternatives in the following section of this memo.

Proposed MMA Boundary

Three alternative MMA boundaries were identified and evaluated in order to determine a preliminary preferred

boundary. Ultimately, the preliminary preferred boundary was identified as a combination of the three alternatives, with further refinements based on feedback from the Project Team, Technical Advisory Committee and a public workshop.

The boundary for this Preliminary Preferred Alternative follows the study area boundary on its southern end. On the northern end, the MMA encompasses the bulk of the study area, with the exception of an area in the northwest corner that is currently zoned for light industrial use. See Figure 2 for a boundary map. This alternative is recommended for the following reasons:

- Generally consistent with the goal of establishing 3rd Street as a vibrant mixed-use corridor and creating opportunities for a mix of commercial and residential uses between the Parkway and 4th Street
- Requires ODOT concurrence but reduces the area within one-quarter mile of the northern interchange to some degree. As noted previously in this memo, preliminary feedback from ODOT is that the concurrence issue is not expected to be a significant barrier to establishing an MMA within one-quarter mile of the Bend Parkway interchanges.
- Allows for flexibility in meeting mobility standards for the entire length of 3rd Street between Revere Avenue and the southern end of the study area.
- Maximizes redevelopment potential within the area, particularly along 3rd Street, by encompassing the majority of the Central District study area.
- May result in fewer non-conforming uses and/or impacts to existing low intensity land uses in the northwest corner of the Central District; results in fewer impacts on light industrial users in that area and responsive to concerns from property owners in that area.

More information about the boundary alternatives and the evaluation and refinement process can be found in Technical Memorandum #4 and in the summary of the public workshop conducted on January 9. Those documents are available from the City of Bend.

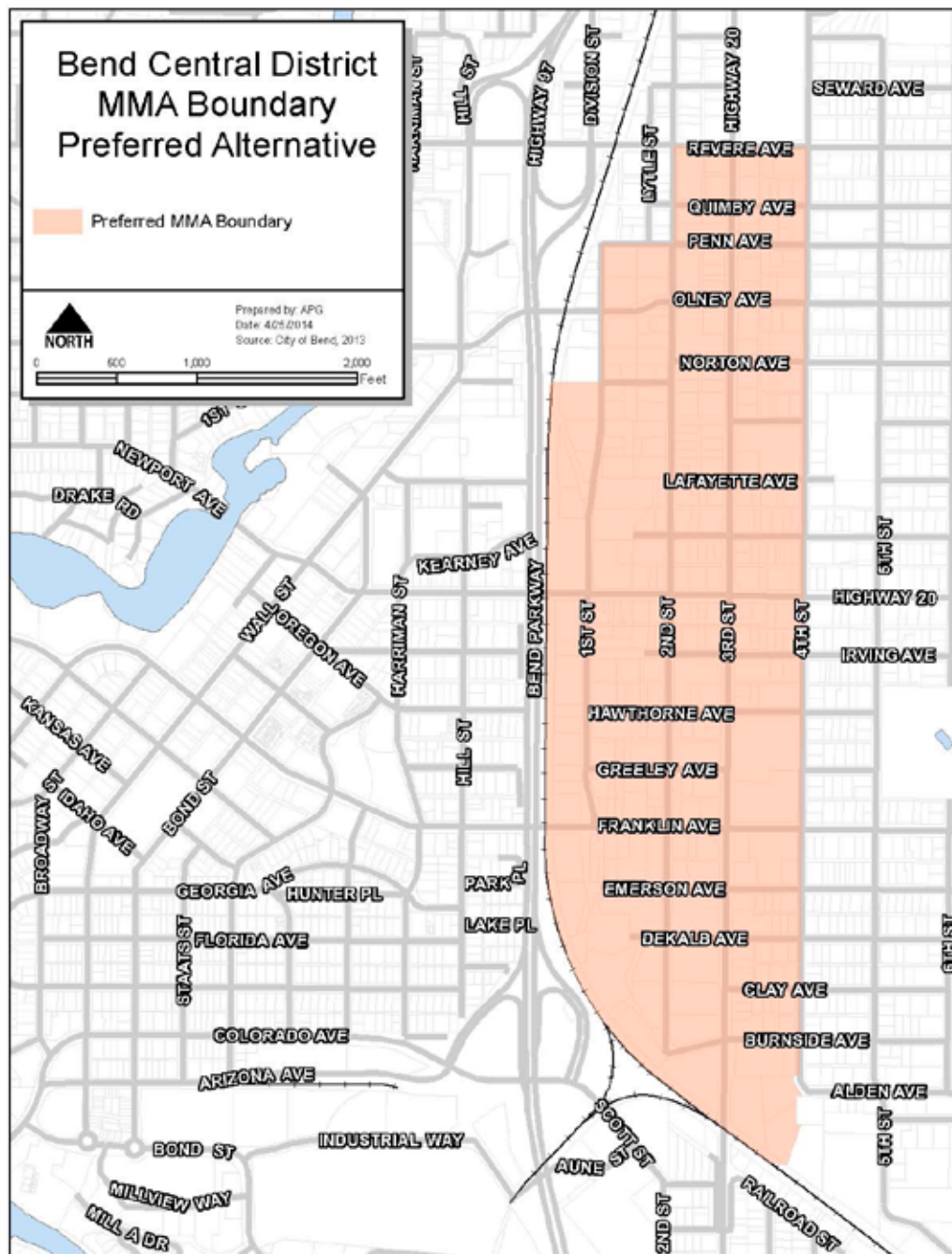


Figure 2 - Preliminary Preferred MMA Boundary

MMA LAND USE RECOMMENDATIONS

Future land use and urban design assumptions

As established in the Study Area goals and objectives developed for this project, future land use in the Bend MMA is expected to include a mix of shopping, dining, employment and living opportunities that will support higher levels of pedestrian activity. The MMA Plan assumes a variety of residential uses (meeting required densities for the MMA designation) and commercial/other development types that are linked by a comprehensive network of bicycle and pedestrian facilities as part of a well-connection transportation network. The Plan also assumes a transition in building heights and densities between the MMA boundary and adjacent residential neighborhood east of 4th Street.

More specifically, the land use vision for the MMA assumes the following:

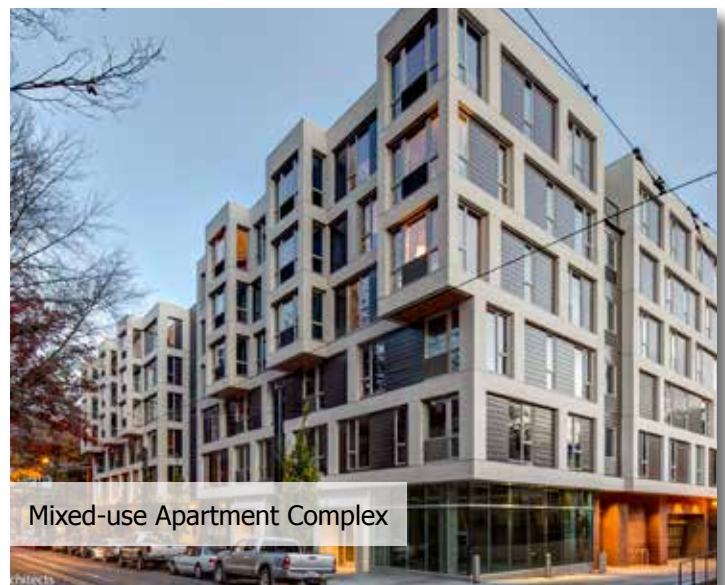
- **Along 1st Street** a combination of light industrial, residential, commercial and other uses will be located. Similar to the 2nd Street corridor, this area could lend itself to a significant amount of redevelopment including buildings ranging from 1 to 6-8 stories.
- **2nd Street** will host a mix of office, residential, and small-scale retail uses. This area could lend itself to a sig-



nificant amount of redevelopment and is likely to be where the bulk of higher density residential uses are located, with retail uses on the ground floor in some cases. Commercial or office uses may locate here as well if there is enough traffic to support the commercial uses and if the market sees office uses as compatible with the residential. These uses could support lodging establishments along 3rd Street. Buildings will range from three to six stories and possibly taller in some locations. Some parking will be underground structured, or tuck-under.



- **3rd Street** will likely continue to include larger-scale commercial uses, particularly in the short to medium-term. In the longer term, uses are expected to transition to a mix of commercial, retail and residential, particularly in the southern portion of the area and in closer proximity to direct connections to Downtown (e.g., from somewhere north of Hawthorne to somewhere south of Franklin). Buildings along 3rd Street are likely to vary from one to four or six stories with taller buildings located in redeveloped areas, primarily in the southern portion of the District.
- **On 4th Street**, land uses will be primarily residential with some office and smaller scale, ground-floor retail uses to serve the neighborhood to the east. Housing will include a mix of multi- and single-family housing. Development here will be limited to three stories to transition between taller 3rd Street development and existing resi-





dences east of 4th Street. By emphasizing residential uses, street traffic will be lighter as most commercial movements will stay on 2nd and 3rd Streets.

- **Along east/west streets**, land uses would be primarily commercial or office uses along the busier sections of Greenwood and Franklin, potentially with ground floor retail uses and upper floor housing or office uses in some future developments. On other east/west streets, there would be a mix of residential, small-scale retail and some commercial or possibly office when adjacent to one of the north/south streets.

Figure 3 illustrates these overall land use assumptions, providing general guidance on land uses, transportation networks, key activity nodes, green space, and built character, including the following:

- **Multi-modal Streets.** All major streets in the MMA – 2nd, 3rd, 4th, Olney, Greenwood, and Franklin – will be enhanced with improved pedestrian, bicycle, and transit connections within and throughout the District. Enhanced facilities will include a mix of wider sidewalks, more landscaping, added bicycle lanes, safer bicycle and pedestrian crossings, and use of natural stormwater filtration facilities, where feasible. The MMA designation is intended to improve the ability of people to live, work, and shop in the BCD by foot, bicycle and transit, while still allowing drivers, including freight vehicles to travel to and through the area.
- **District Nodes.** Redevelopment and activity nodes along 2nd and/or 3rd Streets at Olney, Greenwood, and Franklin are expected to host businesses, shops, restaurants, and living quarters. Safer street crossings, public open space,

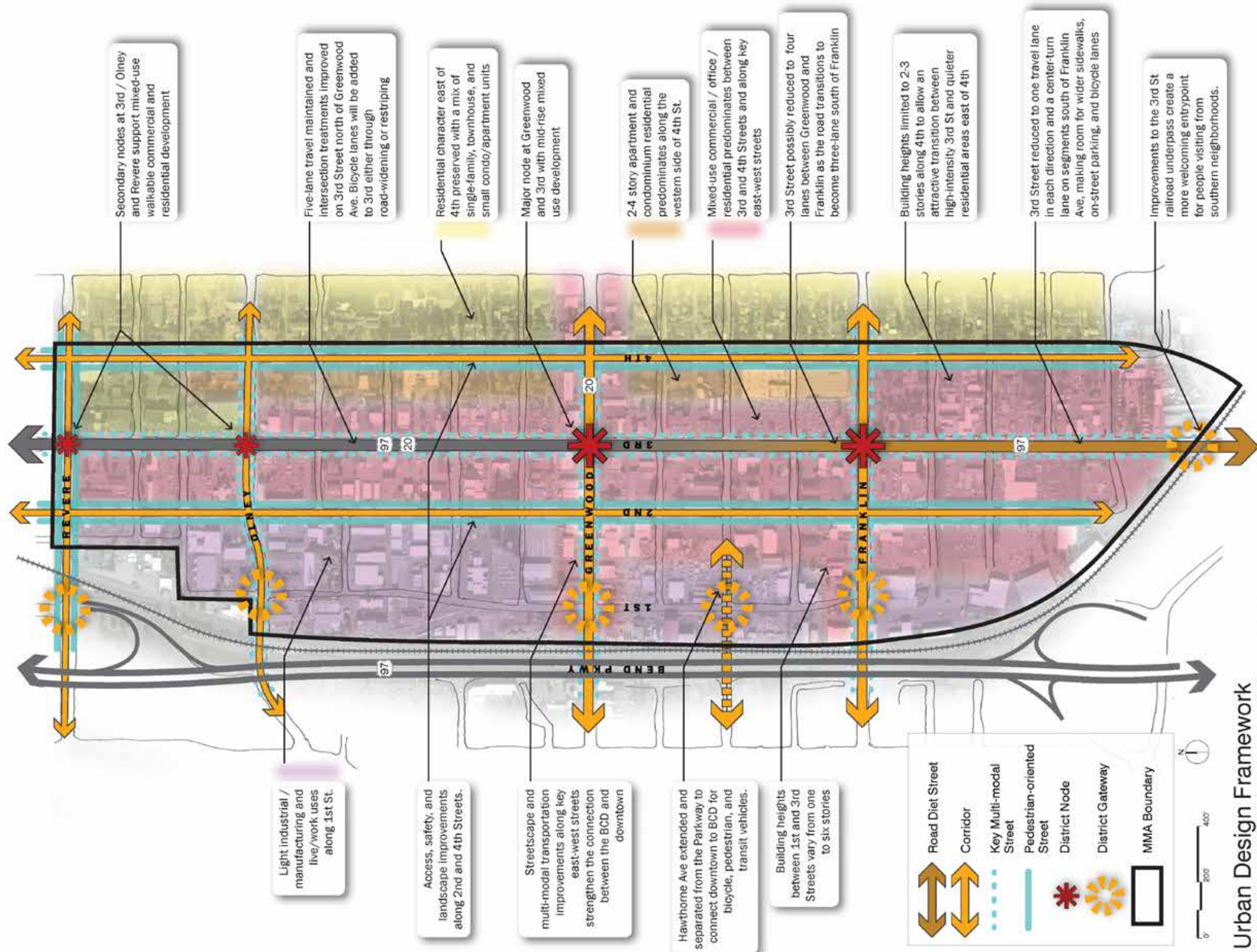
wide sidewalks, outdoor retail and dining, and other amenities will boost the attractiveness of these areas. These nodes will be the heart of 18-hour-a-day activity in the District.

- **District Gateways.** The Bend Parkway and railroad tracks make it particularly difficult to travel between the BCD and downtown, the riverfront, the Old Mill District, and other areas to the south and west. Key streets will continue to pass underneath the Parkway and tracks, but welcoming gateway features at these locations can improve wayfinding and announce to people their arrival in the Bend Central District. Gateways can take the form of well-designed streetscapes, artwork, vibrant businesses fronting the street, open space, or any other amenity that defines the unique character of the district. In addition, improvements to bicycle and pedestrian facilities associated with these under-crossings are recommended.

Future projects in the MMA should be vetted against the vision outlined in the framework, which reflects many of the aspirations of the public and stakeholders for the District. It will likely require decades of public and private investment to realize this vision.

Figure 4 on page 10 depicts an overall vision for building massing and open spaces in the BCD. It provides a sense of scale envisioned for the area. The drawing is conceptual in nature and building locations and sizes are expected to vary on individual properties.

Figure 5 illustrates potential changes to the character of 3rd Street where it has transitioned from five to three



Urban Design Framework
BEND CENTRAL DISTRICT MMA PROJECT
1 APRIL 2014

Figure 3 - Urban Design Framework Map



Figure 4 - Bend Central District Massing and Open Space Visualization



Figure 5 - Bend Cental District Street-Level Visualization

lanes somewhere south of Greenwood Street. By reducing 3rd Street from five to three lanes, it is possible to add on-street parking, bicycle lanes, and wider sidewalks with plantings, lighting, and stormwater facilities. This will help create a more inviting and vibrant commercial corridor with opportunities for shops and restaurants and a variety of housing options for people of all ages and income levels. Buildings would be located at or close to the property line, with entrances oriented to the street. Parking is relocated behind or beside active building spaces. High levels of window coverage would provide views into and out of

businesses and awnings and benches create welcoming informal gathering and resting spots.

Figure 6 depicts the proposed character of development in the area around the intersection of 2nd and Greenwood Streets, as well as a conceptual design for those roadways and their intersection. The character of development is consistent with the land use and urban design vision described in this Plan. The roadway and intersection design reflect elements described in further detail in subsequent sections of the Plan.



Figure 6 - Development Character at 2nd and Greenwood Visualization

CITY PLAN AND CODE RECOMMENDATIONS

This Plan will be implemented in part by allowing for and encouraging different types of development and redevelopment in the MMA area through changes to the City's Development Code, General Plan and Transportation System Plan. Proposed amendments to those documents are summarized below and on the following pages.

Recommended Development Code Amendments

In order to implement the land use vision for the MMA as described in the sections above, new and/or amended zoning regulations will need to be applied within the MMA boundary. Based on conversations with city staff, the preferred implementation approach is creation of a new "special planned district" for the MMA that will serve as an overlay on top of the underlying zones. The new district will establish uses suitable for an MMA designation and contain development/design standards that will implement the goals and objectives of the MMA. Some modest changes to the existing underlying base zones also will be proposed. Underlying zoning will be as follows:

- Existing ME zoning will remain
- Existing RH zoning will remain
- Existing CL zoning will remain
- Existing IL zoning will be rezoned to ME

See Exhibit A for a map of the proposed revised zoning designations and plan district overlay.

Recommended language for a new special planned district (named the BC-MMA) has been drafted and key elements are summarized below. For the full draft of the BC-MMA, see [Appendix X](#).

Purpose statement. The BC-MMA Overlay is intended to implement the Bend MMA Plan goals and objectives for the creative redevelopment of the MMA area. This includes providing for a wide range of uses and a variety of residential types; ensuring quality development and design that is pedestrian and transit friendly; allowing for some manufacturing uses; and reduced parking standards. The purpose statement also describes four subdistricts that are established to recognize and support the distinctly different characteristics of areas within the BC-MMA.

Permitted uses. This section lists uses that may be permitted outright or conditionally in the BC-MMA by subdistrict. In some cases, uses are permitted outright but with limitations that control size in order to promote compatibility with surrounding uses and/or be consistent with the intended character of the subdistrict. This section also allows existing uses and structures to continue as permitted uses even if application of the new language would otherwise make them non-conforming.

Development standards. This section establishes basic development standards such as building heights and setbacks that vary by subdistrict. Building heights range from 30 to 65 feet, with a height bonus available for developments that provide underground or rooftop parking. In some cases, building stepbacks are required. In all subdistricts, a front setback of at least five feet is required to serve as a pedestrian easement.

Design standards. Generally speaking, the existing design guidelines from Chapter 2.2.800 will be applied in the BC-MMA. Those design guidelines regulate street-facing elevations and promote pedestrian scaled design; require building articulation, well-designed corners and weather protection; and emphasize buildings that connect to their surroundings and use quality materials.

Parking. The parking section establishes off-street parking requirements by use that are generally lower than those required in other parts of Bend consistent with state requirements that an MMA require less parking than other areas within

a given community. It also allows for greater parking reductions/credits for on-street parking, mixed use developments and developments that provide a public open space or amenity on site.

Street standards. This section establishes that special street cross sections have been developed for streets inside the BC-MMA. The cross sections will be referenced here but not incorporated into the code.

Low impact stormwater management. This section encourages the use of low impact stormwater management techniques such as pervious pavement, rooftop gardens/eco roofs, rain gardens and bioswales, and reduced parking footprints.

Landscaping. Generally, the existing landscaping standards of Chapter 3.2 apply in the BC-MMA except the required percentage has been reduced from 15 to 10 percent of the total site area. In addition, roof top gardens/eco roofs and landscaping in the right-of-way may be counted towards the total landscaping requirement.

Recommended General Plan Amendments

Bend General Plan language will need to be updated to provide policy support for the adoption of the new BC-MMA Overlay. Changes are proposed for General Plan Chapters 5 (Housing and Residential Lands), 6 (The Economy and Lands for Economic Growth), and 7 (Transportation Systems). Recommended language for inclusion in Chapter 6 describes the origins of the BC-MMA District in the earlier Central Area Plan and gives a general description of the characteristics of an MMA. New policies supporting mixed use development in the BCD are proposed for inclusion in the Mixed Use Development policy section. In addition, a new policy supporting higher residential densities along key streets in the BC-MMA is proposed for inclusion in Chapter 5. A description of the MMA is also included in Chapter 7 and a number of proposed policies support the development of the multi-modal streets and gateways envisioned for the BC-MMA. New transportation policies also articulate the city's commitment to developing a parking strategy and management plan for the area. For the full text of recommended Plan amendments, see [Appendix X](#).

Recommended Transportation System Plan (TSP) Amendments

In order to ensure consistency between the TSP and recommendations in the Bend MMA Plan, amendments to TSP policies and appendices may be needed. The following list presents a preliminary overview of potential amendments for discussion. More detailed amendment language may be provided in a subsequent, updated memo.

- 6.2 Transportation Demand Management (p. 96) -- Consider adding language here emphasizing the importance of TDM in supporting the objectives of an MMA.
- 6.3 Pedestrian and Bicycle System (p. 97) -- Amend to reference improvement recommendations from the MMA Plan.
- 6.5.1.1 Roadway Classifications / Expressways (p. 111) -- Amend to reference MMA Plan's disconnection of Hawthorne Avenue from Bend Parkway.
- 6.5.1.4 Minor Arterials (p. 124) -- Amend discussion of Revere Avenue to remove "need to complete to five-lane width." Possibly amend Table 11 to include 2nd Street (Revere to Burnside) and 4th Street (extend classification south to Burnside) as Minor Arterials, pending further discussion with City.
- 6.5.2.9 Railroad Grade Crossings (p. 142) -- Amend discussion of Hawthorne undercrossing to reference analysis done in MMA Plan.
- Appendix A.2 Table -- Amend to reflect two-lane cross-sections for 2nd Street and 4th Street.
- Appendix A.3 -- Amend to reflect new intersection improvement projects included in the MMA Plan.
- Appendix A.4 -- Amend to reflect new street improvement projects included in the MMA Plan.
- Appendix A.7 -- Amend to reflect changes to roadway classification system and bicycle pedestrian system maps.

TRANSPORTATION RECOMMENDATIONS

A variety of improvements to the transportation system within the MMA are recommended to help support and achieve the land use and urban design vision for the MMA, to create a transportation system that effectively serves all modes of transport and to meet state requirements for an MMA. The proposed transportation network was developed through the evaluation of several alternative transportation network options that were previously identified and studied during the CAP process, as well as a new “Hybrid” option evaluated during the MMA planning process.

Summary of Recommendations

The recommended transportation network for the MMA includes the features described below and illustrated in Figure 7 on page 15.

- North of Greenwood Avenue, 3rd Street will continue to include five lanes (two travel lanes in each direction and a center turn lane, possibly with a median in some locations). It also will include bicycle lanes which will require restriping and/or possible modest right-of-way acquisition.
- South of Franklin Avenue, 3rd Street will continue to include three lanes (one travel lane in each direction and a center turn lane, possibly with a median in some locations). It also will include bicycle lanes, improved pedestrian facilities and possibly on-street parking in some locations.
- 3rd Street will likely transition from five lanes to three lanes somewhere between Greenwood and Franklin.
- Long-term improvements to 2nd and 4th Streets will include bike lanes and on-street parking, plus a seven-foot sidewalk. In the shorter term, interim improvements that can be accommodated within the roadway may be phased in and may not include all of these elements.
- On-street parking would not have to be contiguous on both sides of the street on 2nd and 4th Streets but could be interrupted by planting areas or other features in some locations where wider sidewalks or planting areas are desirable and appropriate and/or where less right-of-way is available.
- Intersections throughout the study area and particularly at crossings of major north/south and east/west streets will be improved to better facilitate bicycle and pedestrian movements and crossings. Intersection configurations will be based in part on the results of traffic analysis to be conducted during the next step of the project.

- 2nd Street will continue directly north to Revere in the existing right-of-way but likely won't continue north from there.
- Traffic movement between 3rd Street and 2nd and 4th Streets will be via basic street grid connections throughout the study area.
- There will be opportunities to travel between 3rd and 4th Streets north of Revere (e.g., at Underwood) but large connections similar to those envisioned in the Expanded Grid network alternative, are not assumed.
- Assumed travel speeds on 2nd and 4th will be 25 mph; travel speeds on 3rd will be 35 mph.
- The Hawthorne connection to Downtown will accommodate bikes, pedestrians and transit. Cars also likely will be accommodated but will be discouraged to some degree via roadway design and lower travel speeds. This likely would result in removal of the existing connection to the Bend Parkway in this location.
- For modeling purposes, traffic controls at intersections with assumed improvements will generally be signals but would not preclude use of roundabouts at selected locations in the future if the City were to determine that is appropriate.
- A roundabout on 3rd Street at the southern end of the study area is assumed.

This proposed system is recommended over other options studied in the MMA process based on an evaluation using criteria derived from the project goals and objectives developed at the outset of this process. The evaluation process included review and recommendation by City staff, the consulting team, the PT and TAC and other members of the public, including a public workshop. Results of the evaluation are summarized in the table below. Descriptions of the other transportation network options and more detailed information about the evaluation process are described in Technical Memorandum #8.

Transportation Option 5: Hybrid

BEND CENTRAL DISTRICT MMA PROJECT

MARCH 20, 2014

Land Use in the BCD

- Light industrial, manufacturing, and live/work uses along 1st Street.
 - Mixed use commercial/office/residential predominates between 3rd and 4th and along key east-west streets.
 - 2-4 Story apartment and condominium residential predominates along the western side of 4th street.
 - Residential character east of 4th is preserved with a mix of single-family, townhouse, and small condo/apartment units.
- BUILDING HEIGHTS**
Building heights between 1st and 3rd vary from one to six stories.
Building heights limited to 2-3 stories along 4th to provide an attractive transition between high-intensity 3rd St. and quieter residential areas east of 4th.

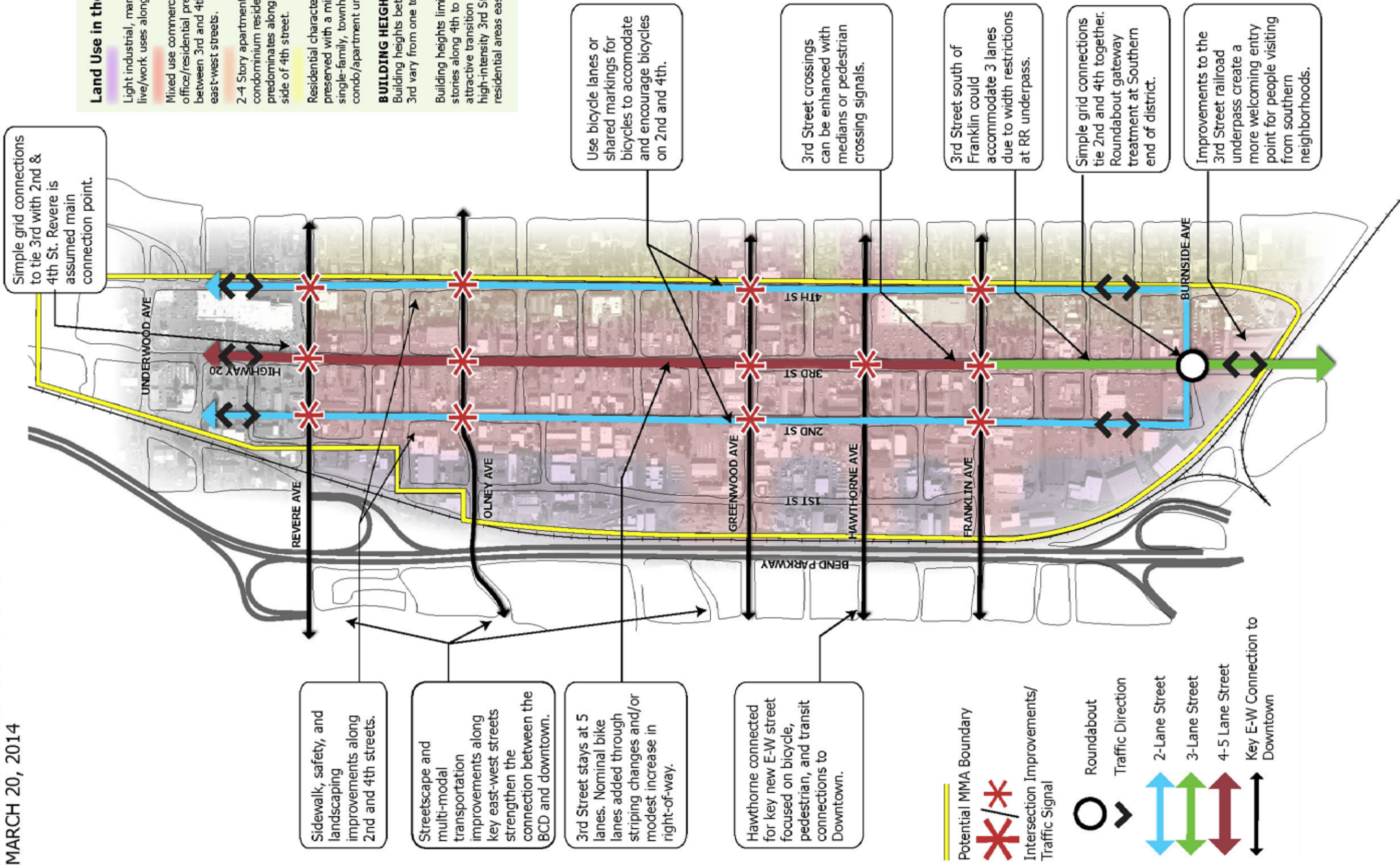
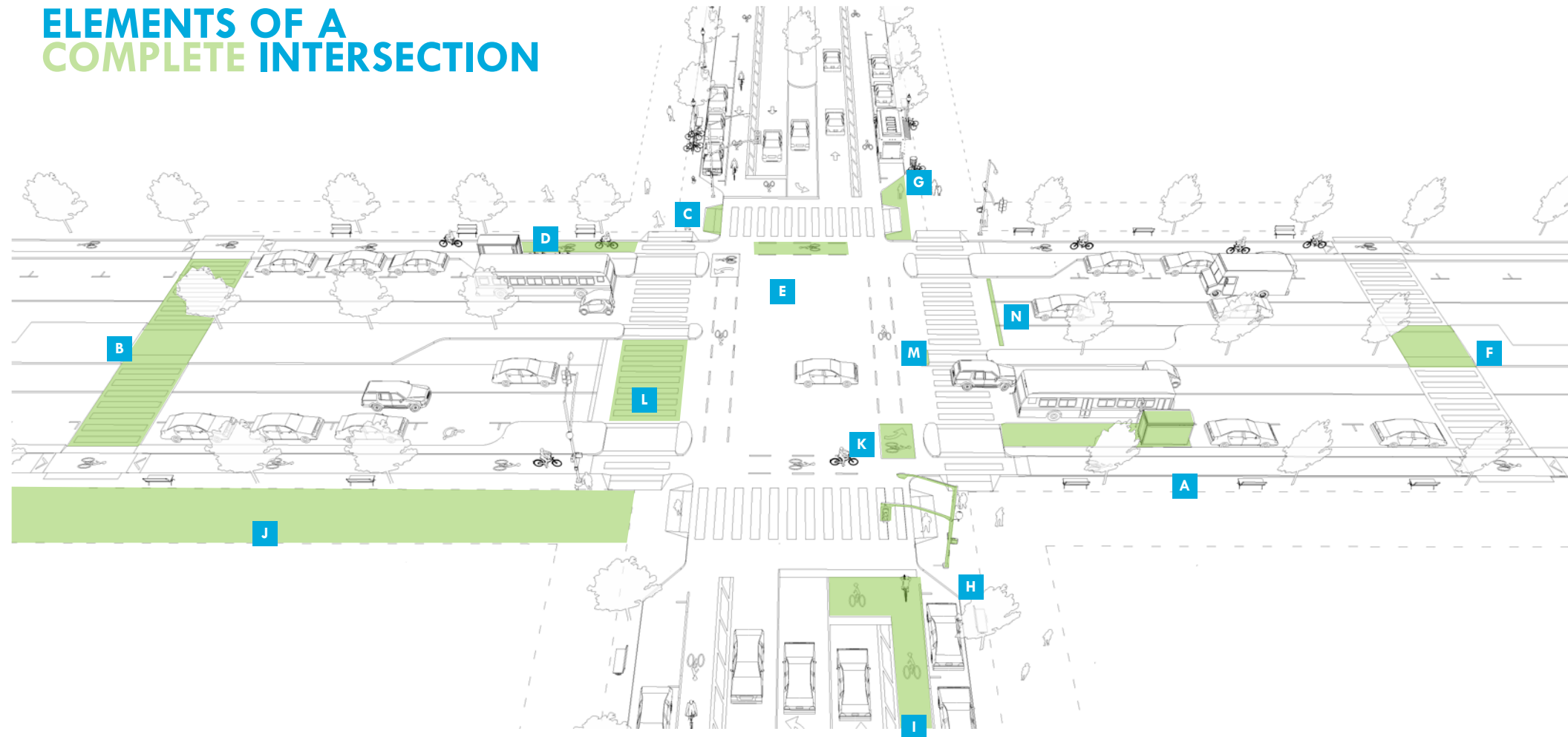


Figure 7 - Preferred Transportation Alternative

ELEMENTS OF A COMPLETE INTERSECTION



- A Far-side stops/Bus bulbouts**
Far-side stops minimize operational delay and allow buses to move out of the intersection, so that turn movements behind them can continue to occur. Bus bulbouts move passenger shelters or queuing areas away from the pedestrian zone and reduce pedestrian crossing distances.
- B Mid-block crossing**
Mid-block crossings provide direct walking routes and reduce the effective length of the block.
- C Accessible curb ramps**
Curb ramps safely and seamlessly connect mobility impaired individuals between the sidewalk and street. Curb ramps are tactile to ensure legibility for site-impaired users.
- D Bike-transit integration**
Bicycle and transit facilities are designed to reduce conflicts between bikes, transit vehicles, and pedestrians.
- E Intersection bicycle crossing**
Intersection markings indicate the safe, direct, and visible path of bicyclists traveling through an intersection or driveway conflict zone.
- F Pedestrian refuge islands**
Refuge islands reduce crossing distances, improve pedestrian visibility, and facilitate crossings across longer crosswalks.
- G Curb extensions**
Curb extensions continue the sidewalk into the parking lane at intersections or mid-block locations to improve visibility of pedestrians waiting to cross, reduce crossing distances, and provide additional space for placemaking features.
- H Signalization**
Traffic signals control vehicle and pedestrian movement at intersections or mid-block crossings.
- I Colored bike boxes**
Designated priority queuing areas for bicycles that help clear an intersection quickly and help reduce right-hook collisions.
- J Sidewalks**
Spacious, clearly defined, and continuous sidewalks are requisites for Complete Streets and transit-oriented neighborhoods.
- K Two-stage turn queue boxes**
Turn facility allowing cyclists to safely and comfortably exit cycle tracks or bike lanes to negotiate difficult lane merges.
- L Crosswalks**
Highly visible and defined crosswalk facilities ensure safe and comfortable crossings.
- M Median nose**
Median noses provide additional protection for crossing pedestrians and slow left turn movements.
- N Advanced stop bars**
Stop bars increase automobile stopping distances from crosswalks, thereby improving crossing comfort.

Figure 8 - Complete Street Illustration

Source: Nelson\Nygaard

Table 2 - Evaluation Criteria Matrix for Transportation Network Options

Objective/Criteria	Alt 1: 2 nd /3 rd St. Couplet		Alt 2: Expanded Grid		Alt 3: 2 nd /4 th St. Couplet		Alt 4: 3 rd St. Streetscape Improvement		Alt 5: Hybrid	
	N/S	E/W	N/S	E/W	N/S	E/W	N/S	E/W	N/S	E/W
Overall performance (<i>overall MMLoS</i>)										
• Vehicle	H	H	H	H	M	M	H	M+	H	H-
• Pedestrian	L	M	M	M	L	M	M	L+	M	M+
• Bicycle	M	M	M+	M+	M	M	M	L	M	M
Additional Criteria	Alt 1		Alt 2		Alt 3		Alt 4		Alt 5	
Mobility/congestion balance (<i>intersection LOS</i>)	H		H		H		H		H	
High quality connectivity – all modes (<i>number of new or enhanced internal connections</i>)	M+		H		M+		M		M+	
Safe, comfortable pedestrian crossings of 3 rd St. (<i>number of proposed crossings, expected intersection vehicle LOS</i>)	M		H		M		M-		M-	
Safe, comfortable pedestrian crossings of other streets (<i>number of proposed crossings, expected intersection vehicle LOS</i>)	M		H		M		H		H	
Pedestrian-supportive land uses (<i>relationship between pedestrian improvements, land use</i>)	L		H		L		M		M+	
Supportive of land use mix										
Cost effective, financially feasible (<i>rough comparison of relative costs to implement</i>)	L		M		L		L		M+	
Use of existing right-of-way (<i>relative need for new ROW acquisition</i>)	L		H		L		L		H	
Enhance east/west travel (<i>MMLoS comparison for east/west streets</i>)	M-		H-		M-		L		M-	

Transportation Analysis

The consultant team worked with City and ODOT staff to conduct a multi-step analysis of the proposed preferred transportation network, including the following:

- Forecasted 2030 traffic volumes based on the project’s land use assumptions and basic transportation network conditions using the regional traffic model, in coordination with ODOT staff.
- Performed a Multimodal Level of Service (MMLoS) analysis to assess conditions and performance for bicyclists, pedestrians and vehicle drivers, using a more detailed sub-area model for the MMA and surrounding area.
- Evaluated intersection operations and conducted a “queuing analysis” using additional traffic analysis tools (Synchro).
- Conducted sensitivity analyses to study the impact of minor modifications to the preferred network.

More detailed information about the methodology for this analysis is found in a separate memorandum available from the City of Bend (Technical Memorandum #9). Following is a summary of the results of the analysis.

Multimodal Level of Service (MMLoS) Analysis Results for Pedestrians and Bicycles

Results of the pedestrian MMLoS analysis are shown in Figure 9. 2nd and 4th Streets perform well for pedestrians, providing LOS A on nearly all streets between Revere Avenue and Burnside Avenue. This is generally due to the wide pedestrian zone in the assumed cross-section and relatively low motor vehicle volumes. 3rd Street performs at LOS C for the five-lane section north of Greenwood Avenue, where traffic volumes and right-of-way demands are the highest. Pedestrian LOS is better south of Greenwood Avenue.

Bicycle performance, shown in Figure 10, varies along 2nd and 4th Street, but is mostly LOS C. Traffic volumes and speeds adjacent to the bike lane, as well as the proximity of on-street parking (creating risk of “dooring”), contribute to a bicycling environment with moderate stress levels. On 3rd Street north of Franklin, with its narrow bike lanes and higher traffic volumes and speeds, the street performs poorly, generally between D and F. South of Franklin performance for bicycles is LOS A reflecting proposed improvements in that area.

West of the MMA area, the new Hawthorne Avenue under-crossing provides a low-stress connection for people riding

bikes between Downtown Bend and the Central District. The Hawthorne connection operates at LOS A for pedestrians and cyclists, while other connections range from LOS B to E for cyclists.

Intersection Operations and Queuing Analyses

Impacts on vehicle traffic were evaluated both using the MMLOS analysis, as well as separate intersection operations and queuing analyses. Table 3 on page 19 shows the results of the analysis for key intersections in comparison to baseline analysis from the city’s Metropolitan Transportation Plan (MTP). The MTP results assume the currently adopted future land use with no network improvements in the Central District. In general, intersections perform better under the preferred network than under baseline conditions, which assume slightly less intense land use in the Central District, but do not have the enhancements of this project’s preferred network. The difference is particularly significant along 3rd Street, where all study intersections failed to meet targets under the baseline, but only one (3rd Street/Greenwood Avenue) fails to meet targets under the preferred network and land use. This improvement in operations demonstrates the traffic benefits of the network enhancements, particularly on the parallel streets of 2nd and 4th Streets.

The analysis indicates that three of the nine study intersections analyzed in the study area are expected to operate worse than mobility targets in the p.m. peak hour in 2030. The US 97 Northbound/Colorado Avenue Intersection is an unsignalized intersection that is expected to experience high levels of delay for the stop-controlled left-turn movement. The 3rd Street and 8th Street signalized intersections along Greenwood currently do not meet mobility targets, and will continue to not meet mobility targets with growing demand through 2030 if no other changes are made to the transportation network. Figure 11 illustrates intersection performance and relative traffic volumes within the MMA.

A queuing analysis also was conducted for the Bend Parkway ramps in the vicinity of the MMA (at Revere and Colorado Avenues). In general, traffic associated with land use in the MMA would be lower than would be indicated by the regional model because the updated MMA land use assumptions are less intensive than those assumed in previous land use projections. However, the new analysis also assumes disconnection of the Hawthorne off-ramp to accommodate the proposed Hawthorne crossing, consistent with the City’s TSP. As a result, the analysis shows

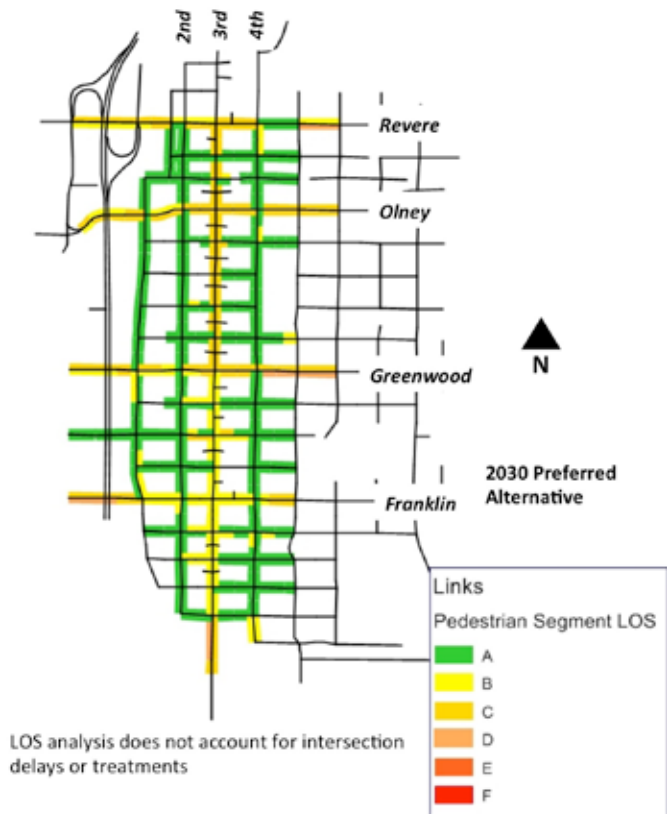


Figure 9 - Pedestrian MMLOS Results, Preferred Network (2030 PM)

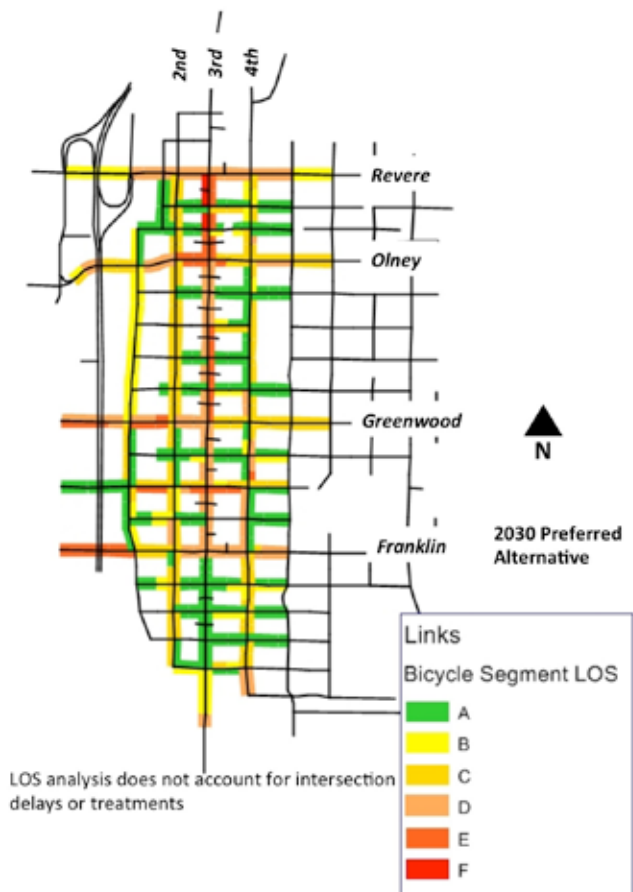


Figure 10 - Bicycle MMLOS Results, Preferred Network (2030 PM)

Table 3 - 2030 PM Peak Hour Intersection Operations

<i>Intersection</i>	<i>Mobility Target</i>	<i>V/C Ratio</i>	<i>Delay</i>	<i>LOS</i>	<i>V/C Ratio</i>	<i>Delay</i>
		Preferred MMA Network			Baseline	
US 97 Southbound/Revere Avenue	0.85*	0.74	13.4	B	0.83	20.6
US 97 Northbound/Revere Avenue	0.85*	0.83	23.9	C	0.92	27.8
US 97 Southbound/Colorado Avenue	0.85*	0.64	9.0	A	0.74	26.0
US 97 Northbound/Colorado Avenue	0.85*	1.13	58.6	F	> 1.0	> 80.0
3rd Street/Revere Avenue	0.90	0.85	42.2	D	1.22	> 80.0
3rd Street/Olney Avenue	0.90	0.80	39.5	D	1.15	> 80.0
3rd Street/Greenwood Avenue	0.90	1.05	108.0	F	1.42	> 80.0
3rd Street/Franklin Avenue	1.00	0.92	52.9	D	1.11	81.1
8th Street/Greenwood Avenue	0.85	1.05	87.5	F	-	-

Bold and Red indicates intersection does not meet its mobility target
V/C ratio: volume-to-capacity ratio; LOS = level of service; delay measured in seconds per vehicle
*Mobility target may be increased to 0.90 if it is determined that ramp queuing will not extend into the deceleration area

increased demand at the southbound off-ramp at Revere Avenue, with a net increase of about 30 vehicles using this off-ramp in the p.m. peak hour. However, further analysis indicates that this off-ramp would have very little spillback. The queuing issues are primarily at US97 Northbound/Revere and US97 Northbound/Colorado ramps only.

More information about the details of this analysis and potential measures to address these impacts are found in a separate memorandum available from the City. Approaches for monitoring impacts to these facilities also are described in a subsequent section of this document.

Sensitivity Analyses

Analysis of the preferred network relied on specific assumptions about elements such as street cross-sections, intersection configurations, and signed speed limits. City staff also expressed interest in an assessment of how certain changes to these assumptions might affect MMLOS, traffic operations, and/or traffic patterns. This section presents analysis for two scenarios:

- **Reduced speeds on 2nd and 4th Streets.** Understanding that reduced motor vehicle speeds could improve bicycle LOS on these two streets, the network was analyzed with speed on these streets reduced from 25 mph to 20 mph.
- **Franklin Avenue Road Diet.** Franklin Avenue currently features a five-lane cross-section that starts at 1st Street and ends between 4th and 5th Streets, narrowing to a two-lane cross-section on either end. The City requested



Figure 11 - Motor Vehicle LOS Results, Franklin Avenue Road Diet (2030 PM Model Volumes)

an assessment of the impact of reducing Franklin to a three-lane cross-section through this area.

The sensitivity analysis shows that reducing speeds on 2nd and 4th Streets would have the following impacts:

- Bicyclists would see a significant improvement in level of service due to both slower speeds and less traffic, particularly on 2nd Street.
- Pedestrians would see no measurable difference in level of service.
- Traffic patterns for vehicles would change, with some amount of traffic shifting over to 3rd Street. These traffic volume shifts would likely have an impact on intersection operations, particularly at 3rd Street/Greenwood Avenue.

The sensitivity analysis associated with the Franklin Avenue road diet shows the following potential impacts:

- Among the intersections assumed to be signalized, only 2nd Street/Franklin Avenue and 3rd Street Franklin Avenue appear to perform worse under the road diet option, operating at LOS D rather than LOS C. Signalized intersections on Greenwood Avenue and other larger facilities are not significantly affected.
- Minimal traffic diversion would be expected with most traffic changes localized on Franklin and nearby parallel streets. Impacts to other arterial corridors, such as Greenwood Avenue, are limited to around 20-30 vehicles in each direction in the PM peak hour, and do not appear to significantly affect intersection operations

More complete analysis would be needed to confirm these results which are described in more detail in a separate memorandum available from the City.

Complete Streets and Conceptual Street Designs

Complete streets are composed of many elements that enable safe travel for all roadway users, including transit riders, motorists, pedestrians, people on bicycles and freight users. Figure 8 on page 16 highlights many of the typical elements that “complete” a street. Some of the elements serve multiple categories of users. On-street parking, for instance, helps motorists access businesses in the District. Street parking also serves as a buffer for pedestrians and people on bicycles. The presence of parked vehicles narrows the visual field of motorists in the travel lanes, encouraging them to maintain a slow speed. Street parking stalls can also be repurposed to create “parklets” or bicycle parking corrals.

On-street parking also enables several complementary complete street elements. Curb extensions narrow the street crossing distance and help calm traffic. They can also be used for stormwater management. Bus bulb-outs are a form of curb extension that enables buses to load passengers without incurring a delay to merge back into traffic, provide additional space for stop amenities and passenger waiting, and promote the visibility of people waiting for the bus. Bus shelters and amenities help create a more pleasant waiting environment, shielding transit patrons from heat and precipitation.

Crosswalks, accessible curb ramps, widened ADA-accessible sidewalks, and advanced motor vehicle stop bars all help create a safer and more pleasant walking environment. Buffered bike lanes and intersection treatments provide bicyclists with additional protection from adjacent vehicle travel lanes and safety from vehicles turning across a bicycle lane or route.



This photo of 3rd Street at Franklin (looking north) illustrates the need for streetscape improvements, access management (fewer driveways), wider sidewalks, and more frequent designated pedestrian crossings.

Source: SERA

Table 4 - Recommended MMA Cross-Section Features

Location	No-Build	Recommended Alternative	
3 rd Street approximately south of Greenwood	<ul style="list-style-type: none"> • 4 motor vehicle lanes with center-turn lane • Signed for 35 mph • No bike facilities 	<ul style="list-style-type: none"> • 2 motor vehicle lanes with center turn lane (11-foot travel, 12-foot turn lane) • Signed for 25 mph • 5 foot bike lanes with 2-foot buffer • Expanded sidewalks, enhanced streetscape • No on-street parking 	
3 rd Street north of Greenwood	<ul style="list-style-type: none"> • Narrow sidewalks with no buffer • No on-street parking 	<ul style="list-style-type: none"> • 4 motor vehicle lanes with center-turn lane (11-foot travel, 12-foot turn lanes) • Signed for 35 mph • 4-foot bicycle lanes • No on-street parking 	
2 nd Street	<ul style="list-style-type: none"> • 2 motor vehicle lanes • No bike facilities • Partial sidewalks 	<ul style="list-style-type: none"> • 2 motor vehicle lanes (10-foot) • 6 foot bike lanes • On-street parking • Sidewalk infill 	
4 th Street	<ul style="list-style-type: none"> • 2 motor vehicle lanes • No bike facilities • Partial sidewalks • On-street parking 	<ul style="list-style-type: none"> • 2 motor vehicle lanes (11-foot assumed) • 6 foot bike lanes • Sidewalk infill • On-street parking 	
Greenwood Avenue west of 3 rd	<ul style="list-style-type: none"> • 4 motor vehicle lanes • No bike facilities • Partial on-street parking 	<p>OPTION 1:</p> <ul style="list-style-type: none"> • 4 motor vehicle lanes (10-foot inside, 11-foot outside) • No bike facilities • On-street parking 	<p>OPTION 2; consider west of 3rd:</p> <ul style="list-style-type: none"> • 2 motor vehicle lanes with center turn lane • 5 foot bike lanes • On-street parking

As described in Figure 16 on page 25, 2nd, 3rd and 4th Streets, as well as major east/west streets would incorporate a variety of enhancements to enhance pedestrian and bicycle mobility and safety while maintaining mobility for cars and freight vehicles. Table 4 summarizes typical cross-section features recommended for these streets.

The intersection of NE 2nd Street and NE Greenwood Avenue is a critical opportunity to promote bicycle and pedestrian connectivity in the District. 2nd Street has been identified as a primary bike route through the District. However, currently the intersection has a concrete median barrier that prevents all crossings of Greenwood.

A full intersection with a traffic signal is planned to integrate 2nd Street into the District’s street grid and increase overall network capacity. The basic intersection design will enable pedestrians, people on bicycles, and motorists to cross the intersection safely. It includes removal of the median barrier but maintains the cross-section of Greenwood Avenue. Relatively narrow 10-foot travel lanes are specified on 2nd Street to help calm traffic. Crosswalks and

curb ramps are provided across each part of the intersection; sidewalks may need to be built out along 2nd Street as development occurs. Bike lanes are recommended for 2nd Street with green bike boxes to promote the visibility of people on bicycles and prevent right-hook collisions at signalized intersections. Advanced vehicle stop lines will promote the visibility of pedestrians crossing Greenwood.

Figures 14-17 illustrate conceptual designs for 2nd Street, 4th Street and 3rd Street. They depict how key elements of the recommended transportation network could be applied to a redesign of these streets. Two concepts for 2nd and 4th Street are shown - one with a bicycle lanes between the travel lane and on-street parking and the other with the bike lanes next to the sidewalk. While the conceptual designs for 2nd and 4th Streets would be similar, the character of land use along each street would differ. Figures 16 and 17 show conceptual designs for 3rd Street both north and south of Franklin. The two designs would be expected to transition somewhere between Greenwood and Franklin.

Figure 12 - 2nd Street Cross Section with Cycletrack

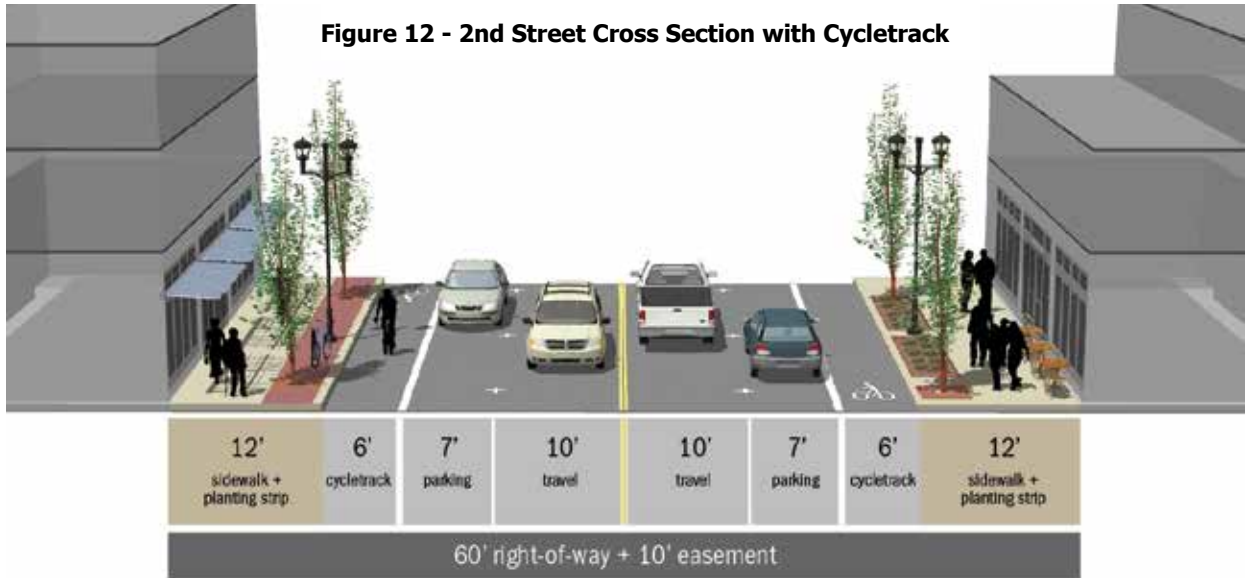


Figure 13 - 2nd Street Cross Section with Cycletrack and Buffer

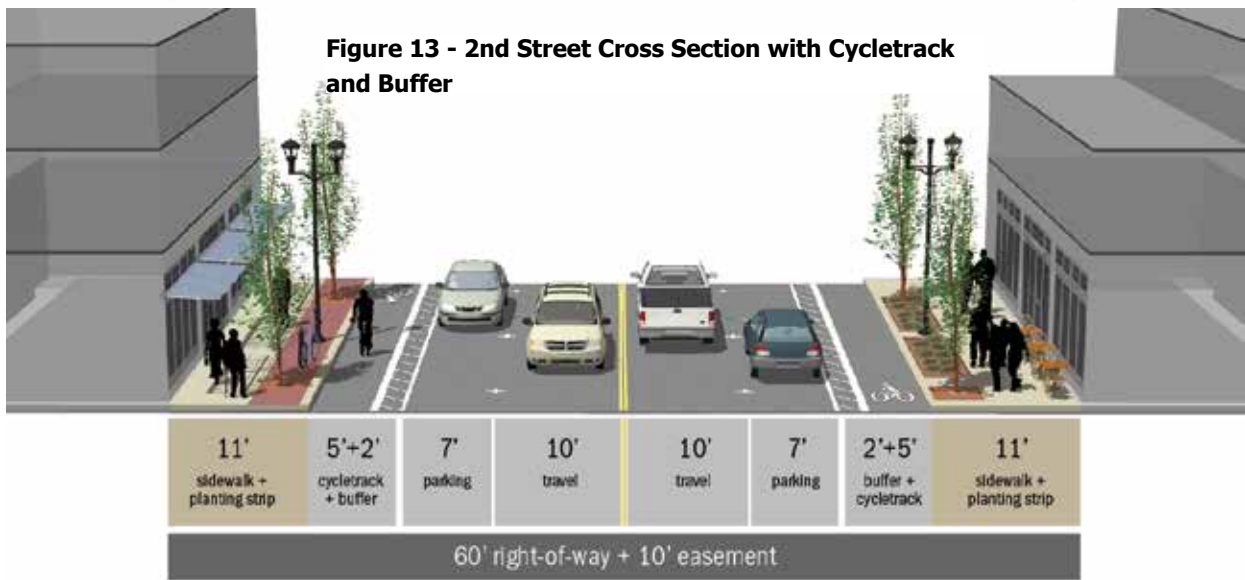


Figure 14 - 3rd Street Cross Section, South of Franklin

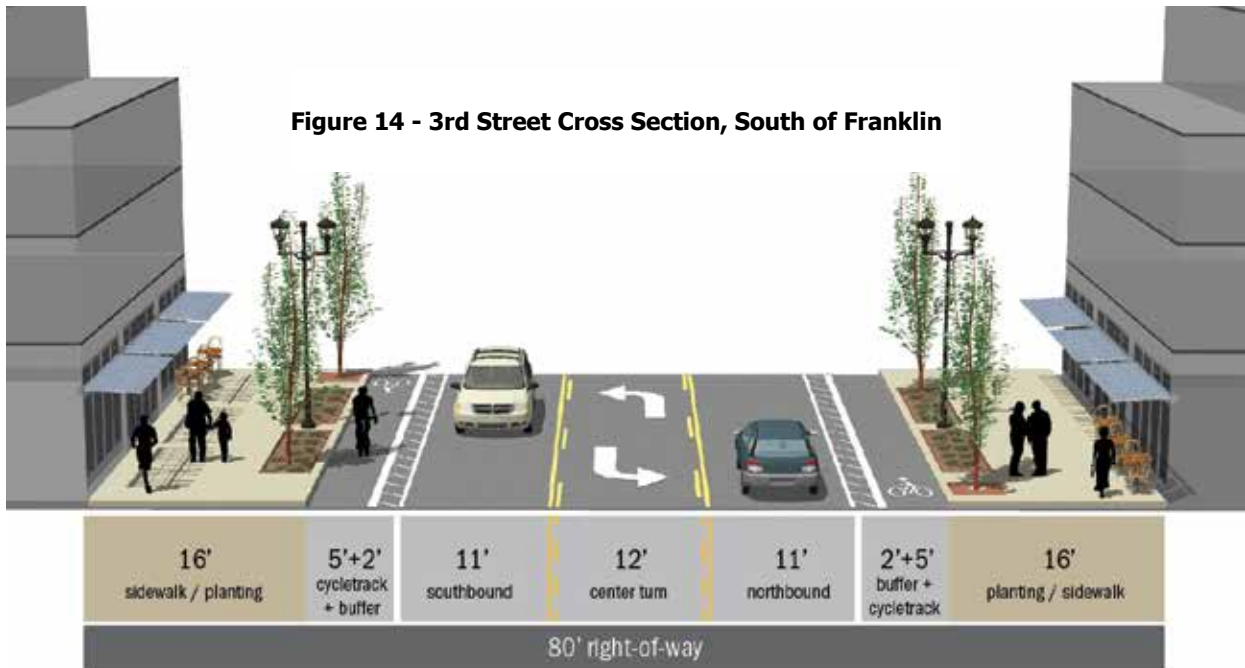


Figure 15 - 3rd Street Cross Section, North of Greenwood

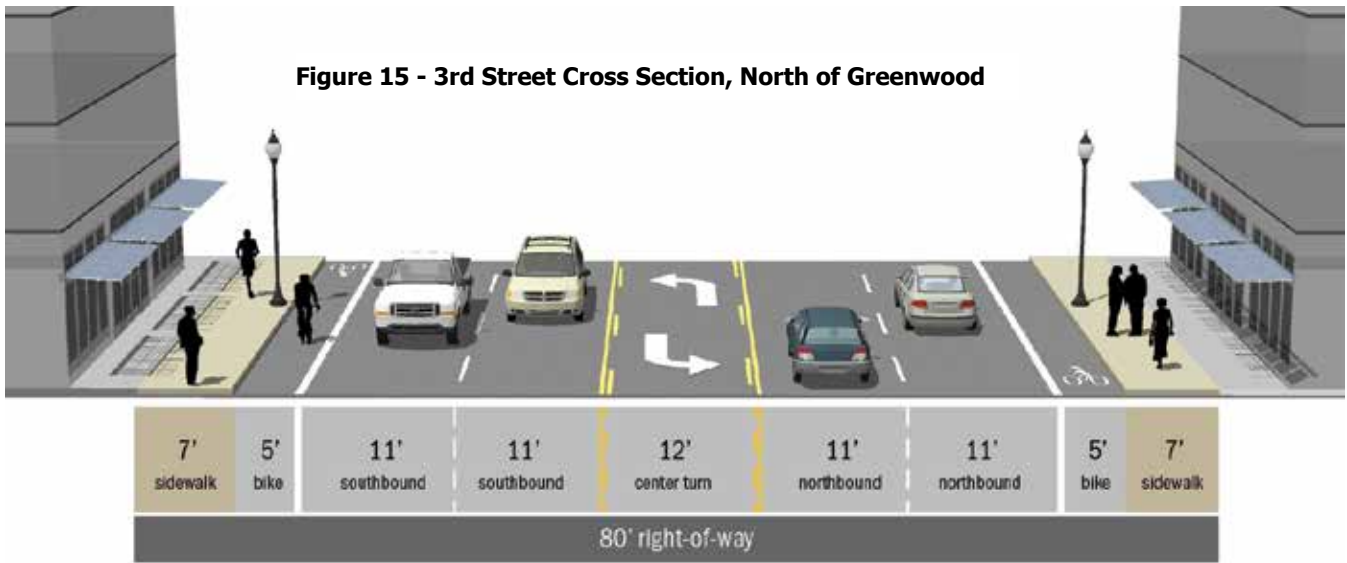



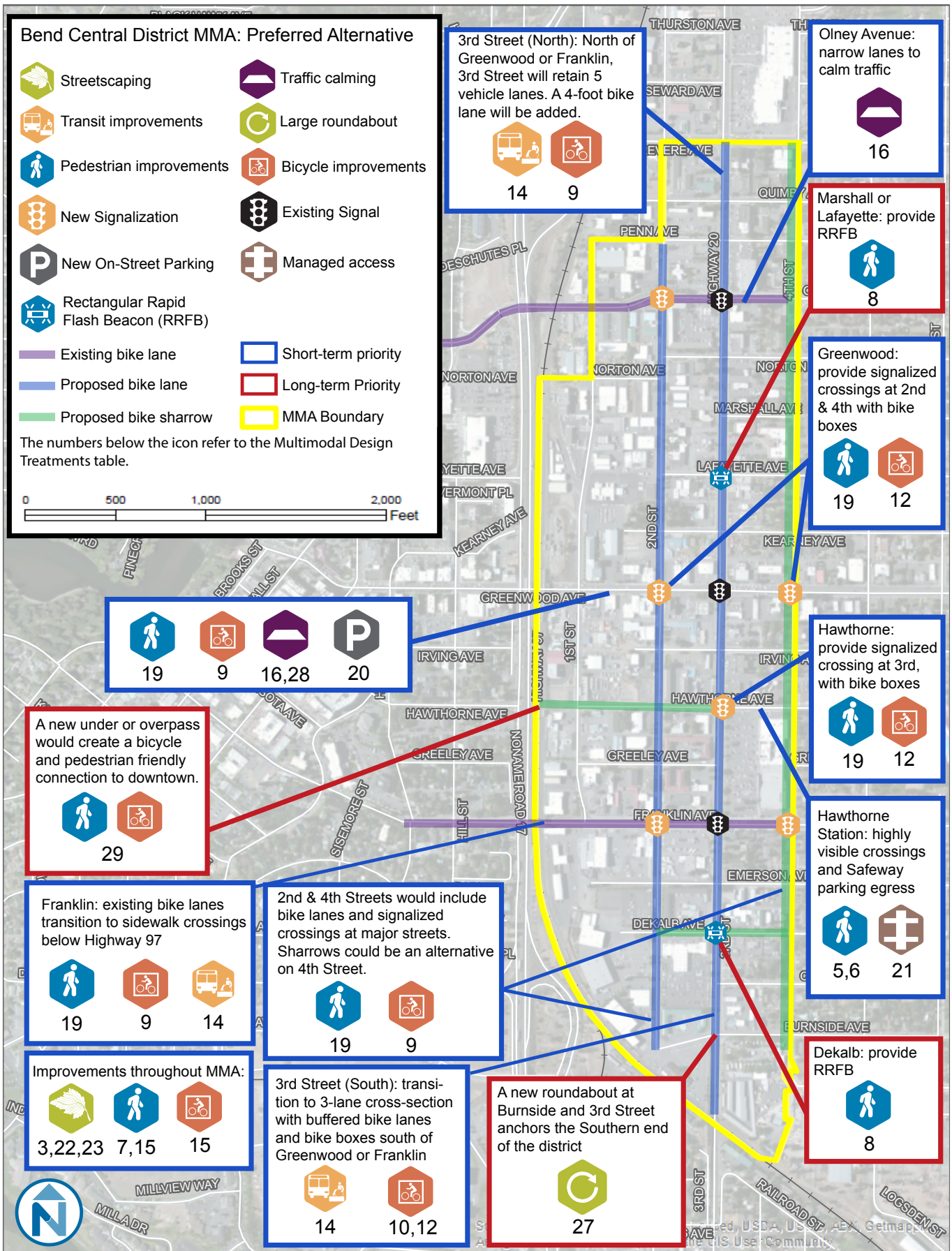


Table 5 - Alternative Multi-Modal Transportation Improvements

Type	Map ID	Design Treatment and Brief Description	Application / Notes
	1	Pedestrian safety islands. Recommended to limit pedestrian exposure in intersections or crossings with 3+ traffic lanes.	(On streets with planted medians and/or 3+ travel lanes)
	2	Sidewalk expansion. Provide sidewalk capacity to comfortably meet pedestrian demand.	(Throughout District)
	3	Planted buffer. Provide separation from motor vehicle traffic.	(Throughout District)
	4	Bulbouts/curb extensions. Visually and physically narrow roadway. Often used in conjunction with on-street parking.	(Streets with on-street parking)
	5	Highly visible, mid-block crosswalk. Meet high demand for pedestrian crossings between intersections.	(3 rd)
	6	Raised crosswalks. Visually and/or physically emphasize crossing locations. (Note: Not allowed on state highways.)	(at Hawthorne Station)
	7	Accessibility ramps. Required at all intersections & mid-block crossings.	(Throughout District)
	8	Rectangular Rapid Flash Beacon (RRFB). Increase visibility of high-demand unsignalized ped. crossings of higher-speed, multi-lane roadways, e.g., 3 rd , Greenwood, etc.	(3 rd)
	9	Bike lane (no buffer). Standard bike lane with no additional separation from vehicle travel lanes (appropriate for moderate-volume roadways and vehicle speeds of approx. 25-30 mph).	(2 nd , Greenwood)
	10	Buffered bike lane (e.g., Thermoplastic, Planters, Striping). Provide additional separation/protection for cyclists on higher-volume and/or speed roadways, e.g., ≥ 30 mph.	(3 rd south of Greenwood)
	11	Bike corrals. Serve bike parking demand; often converted from on-street parking and/or implemented in conjunction with curb extensions.	(Streets with on-street parking)
	12	Bike boxes. Increase visibility of bicyclists at major intersections and/or with high turning movements. (Note: Requires FHWA approval as an experimental treatment.)	(2 nd , 3 rd , 4 th)

Type	Map ID	Design Treatment and Brief Description	Application / Notes
	13	Left turn bike boxes. Facilitate bicycle left-turns without crossing motor vehicle lanes.	(Could be considered on 3rd or Greenwood)
	14	Bus bulbouts. Increase transit stop visibility/comfort/capacity and minimize bus delay.	(Transit streets with on-street parking)
	15	"Share the road signs" and other bike and pedestrian signage including bicycle wayfinding	(Throughout District; wayfinding particularly at facility transition points, e.g., bike lanes on 3 rd terminate south of Greenwood)
	16	Narrow travel lanes. Reduce motor vehicle speeds. (Note: Need to balance with impacts on freight mobility.)	(E.g., Greenwood and Olney)
	17	Street narrowing. Narrow curb-to-curb distance, e.g., to increase right-of-way for sidewalks.	
	18	New signalized intersections and/or additional signalized control or upgrades at key intersections.	(2 nd and 4 th)
	19	Advanced vehicle stop lines. Increase separation from pedestrian crossings. (Could be coordinated with bike boxes).	(Franklin, Olney, 3 rd , Greenwood)
	20	On-street parking. Support local businesses, calm traffics, and separate pedestrians from vehicle lanes.	(Greenwood)
	21	Managed access. Consolidate driveways to reduce turning movement locations (increases bicycle and pedestrian safety).	(3 rd , Greenwood, Hawthorne Station; Throughout District)
	22	Stormwater management features. Filters runoff, calms traffic, beautifies streetscape.	(Throughout District)
	23	General Streetscaping. Calms traffic and increases pedestrian comfort.	(3 rd , Greenwood; Throughout District)
	24	Speed humps. Reduce vehicles speeds, increases driver awareness. Can be applied 4 th Ave in some alternatives and to east-west residential streets.	
	25	Parklets. Expand restaurant/café seating, create public spaces, add buffer between sidewalk and vehicle lanes.	(Throughout District)
	26	Mini roundabout. Calm/ manage traffic at neighborhood street intersections where volumes do not warrant a stop sign.	
	27	Large roundabouts. Slow turning vehicle speeds, forcing greater awareness of pedestrians.	(3 rd)
	28	Reduce curb radii at intersections. Reduce turning speeds and shorten pedestrian crossing distances.	(Throughout district; e.g, 3 rd & Franklin, Greenwood, Olney; 4 th & Olney, Franklin; 2 nd & Greenwood, Olney)
	29	Overpass or underpass. Provide low-traffic volume over- or under-crossing on Hawthorne of BNSF railroad tracks and Bend Parkway, as an alternative to improvement of Franklin and Greenwood underpasses.	(Hawthorne and Highway 97)



Prepared by APG and Nelson\Nygaard

Figure 16 - Recommended Design Treatments Map

Bicycle, Pedestrian and Transit Strategies

A variety of street and intersection design treatments needed to improve safety and comfort for all travel modes in the MMA. Table 5 describes a multimodal design toolbox of treatments that could be applied on 2nd, 3rd, and 4th Streets as well as east-west streets within the District to enhance conditions for pedestrians, cyclists, transit users and others. Certain elements could be implemented throughout the district, whereas others will only occur at key points or along specific corridors. The table includes a map identifier (ID) to clarify the corridors and intersections where specific treatments are recommended, as illustrated in Figure 16 on page 25. Additional information about these treatments are found in a separate report available from the City.

Pedestrian

Recommended improvements to improve pedestrian conditions and safety along major streets throughout the district include widening sidewalks, which in many cases lack sufficient clearance for wheelchairs and other mobility devices, and providing accessibility (curb) ramps at all intersections and driveways. Corner curb radii can be tightened at many intersections to prevent excessive turning speeds, expand the pedestrian area, and reduce pedestrian crossing distances (see #28 in the design toolbox – Table 5). Curb bulb-outs and pedestrian-scale wayfinding signage are other elements that will help make pedestrians more visible to other road users and ensure a safer and at times faster walking trip.

Improved pedestrian crossings to reduce out-of-direction travel and improve access to local businesses and transit facilities are recommended, particularly on 3rd Street, as well as other major streets in the area. Notwithstanding additional signalization that is included in various alternatives, placing high-visibility pedestrian crossings at intermediate intersections or high-demand mid-block locations between signals would provide safe and convenient crossing locations for pedestrians, bicyclists, and transit riders. Raised crosswalks, Rectangular Rapid Flash Beacons (RRFB), and overhead or in-pavement indicators are examples of treatments that should be used to maximize visibility of these crossings, particularly on wide, higher-speed streets such as 3rd Street and Greenwood Avenue. On wider, multi-lane streets such as 3rd Street and Greenwood Avenue, a pedestrian refuge island can be provided in conjunction with a street median or turn lanes, reducing the pedestrian crossing distance.

Bicycle

Some type of bicycle facility improvement is recommended on all north/south and all major east/west streets in the area. Basic striped bike lanes provide cyclists with dedicated right-of-way but a minimal degree of separation from other traffic. Depending on adjacent traffic speeds, higher degrees of separation are desirable where traffic volumes or speed are higher, such as a buffer between the bike and travel lanes. Such separation is desirable in other alternatives as well, particularly those that assume a speed limit of 35 mph. Other infrastructure elements, such as bike boxes and left-turn bike boxes at intersections, improve visibility and alert drivers to the presence of cyclists. This is particularly critical at intersections with high turn movements. Wayfinding and “Share the Road” signage may also help develop a sense of caution among all road users.

Transit

Improvements to transit operations, connections and comfort are recommended. Bus bulb-outs located at bus stops will help improve visibility for both bus drivers and passengers waiting to board and also enhance the attractiveness/comfort of transit use. Pedestrians and other road users will see a clear indication that riding transit is easy, pleasant, and accessible. Shelters should also be provided at moderate-to-high volume stops, including transit and walking information; shelter capacity should be increased at projected high-demand stops.

As described above, pedestrian crossings are needed to provide access between transit stops in either direction, which on 3rd Street are frequently located between signalized intersections; locating stops either at the near or far side of intersections is typically preferred, except where high-demand activity centers are served. Crossings are also needed on Franklin and Greenwood, and along 2nd Street.

A particular conflict point for transit passengers exists on the eastern half of Hawthorne Avenue (between 3rd and 4th Streets), which serves as an on-street transit center. Passengers cross Hawthorne mid-block to transfer between bus routes, while vehicles may egress the Safeway parking lot eastbound onto Hawthorne and have limited visibility of pedestrians crossing the street between buses. Right-turns onto eastbound Hawthorne could be prohibited at this parking lot egress and one or more raised, high-visibility crossings could be installed across the eastern portion of this block to provide designated crossing locations.

Potential locations of the improvements described in Table 5 are illustrated in Figure 16 on page 25. These recommendations aim to maximize bicycle and pedestrian connectivity within the District and provide better access to downtown and other neighborhoods.

Freight Movement

Continued efficient movement of freight within the Central District is important to the City, the region and the state. Third Street (US 97/US 20) is an Oregon Highway Plan Freight Route, an Oregon Freight Plan Strategic Freight Corridor, part of the National Network (federal truck route designation) and a Reduction Review Route. It is designated to carry wide trucks (up to 14') and long trailers (up to 62'). Freight movement is particularly important north of Greenwood. These highways also serve as "Paired Routes" with Interstate 84 meaning that when there is construction work on one of these east/west routes, trucks are advised to use the other route. Third Street also serves as an alternate route to the Bend Parkway for trucks.

Freight movement will need to be considered in identifying, planning for and implementing improvements along 3rd Street and the portion of Greenwood that serves as US 20 to balance multi-modal transportation objectives with freight movement needs and requirements. Such improvements will have to be reviewed by the state's freight stakeholder group before the plan is completed or prior to final design, particularly if they may impact the capacity of these roads for freight movement.

Transportation Improvement Phasing and Near-Term Improvements

The transportation improvements described in the Plan will need to be phased in over a long period of time as redevelopment occurs in the MMA, as funding becomes available, and as regional traffic continues to evolve. Following is a list of recommended near-term improvements.

Streetscaping

Streetscaping improvements will make the District a more attractive place to walk, bike, and linger. Streetscaping brings the added benefit of slowing traffic speeds. Motorists will have a narrower field of vision with added streetscape features, encouraging them to drive more slowly along the pedestrian friendly streets. Streetscaping will occur throughout the District and can include planter strips on

sidewalks, new street trees, and stormwater management features such as rain gardens and bioswales. Parklets (permanent or temporary) can be constructed in front of businesses that would welcome the exchange of a parking space for added seating.

Traffic Calming

In addition to streetscaping, traffic calming elements will be added throughout the District in the short term to slow vehicle speeds. Narrower traffic lanes and reduced curb radii at intersections will encourage slower speeds among motor vehicle users. Beyond recommendations for 2nd, 3rd, and 4th Streets, narrowing lanes is recommended for Greenwood and Olney Avenues because they are important east-west bicycle and pedestrian links to downtown and other neighborhoods. Any strategies affecting intersection geometry or roadway cross-section on state facilities will require coordination with ODOT and will need to be balanced with freight mobility and operations needs.

Transit Improvements

3rd Street and Franklin and Greenwood Avenues are the primary transit streets within the District, as well as portions of 4th and 5th Streets. Bus shelters and other amenities placed at the highest-volume stops within the District will improve the comfort of transit users and make transit more visible and attractive to new riders. Bus bulbouts are not specifically called out in the recommendations but can be considered on transit streets where there is on-street parking. At Hawthorne Station, restricting right-turns at the Safeway parking lot egress onto eastbound Hawthorne and providing a raised mid-block crosswalk for transferring bus riders will improve safety.

Pedestrian Improvements

Short-term pedestrian improvements include sidewalk infill on 2nd and 4th Streets. Sidewalks can also be widened as new development occurs through implementation of an additional five-foot pedestrian easement. New signals and crosswalks at critical intersections along 2nd, 3rd, and 4th Streets will promote connectivity within the district. At intersections on higher-volume streets (Greenwood Avenue or 3rd Street), advanced vehicle stop lines will increase pedestrian visibility. Rectangular rapid flash beacons (RRFBs) are recommended at key intersections along 3rd street to promote safe street crossings; the highest-priority short-term RRFB improvement is recommended at Haw-

thorne Avenue. Two additional RRFBs are recommended as long-term improvements.

Bicycle Improvements

Bicycle improvements throughout the district will ensure safe, convenient, and comfortable access to businesses and residences. Wayfinding and other signage on all streets within the district will help users navigate the bicycle and/or pedestrian network.

North-South Connections

Short-term bike infrastructure priorities include a bike lane stretching the full length of 2nd and 4th Streets within the District. Bicycle sharrows could be used on 4th Street as an alternative in place of bike lanes, particularly where the existing pavement width is narrower, although they were not assumed in the traffic analysis conducted for this study. A buffered bike lane on 3rd Street will stretch from approximately Franklin Avenue south; this is important due to higher traffic volumes and speeds on 3rd Street. Use of a buffered bike lane north of Franklin is recommended and would complement the surrounding pedestrian environment by promoting slower traffic speeds and providing pedestrians an added buffer from the travel lanes. However, these goals would need to be balanced with impacts on lane widths and freight mobility needs and would require further analysis by the City and ODOT, including further traffic study to analyze the impacts of removing or narrowing lanes on this segment of 3rd Street. At the point where the buffered bike lane terminates, clear bicycle wayfinding will need to guide bicyclists to one of the other north-south streets.

Finally, advanced stop lines and green bike boxes placed at major intersections on 2nd, 3rd, and 4th Streets will improve the visibility of people on bicycles, help cyclists make left-turns from 3rd Street, and protect cyclists from left-hook collisions. Left-turn boxes are not specifically recommended but could be considered on 3rd Street, particularly where there is expected to be high demand for bicycle left-turns (such as when the northbound bicycle lanes on 3rd terminate) and the east-west street has on-street parking.

East-West Connections

The addition of new bike lanes on Greenwood Avenue would significantly improve bicycle access to north and

south downtown. As noted previously, this would require further analysis and discussion by the City and ODOT. This bike lane will be paired with traffic calming measures and also provide an important link between the north-south streets within the District. Existing bike lanes on Franklin Avenue transition to sidewalk crossings under Highway 97 and continue west of the Parkway. Existing low-volume designated east-west bike routes should be extended through the District to make connections with new bike facilities on 2nd, 3rd, and 4th. Sharrows are recommended on Hawthorne and Dekalb Avenues (where RRFBs are recommended to facilitate bicycle and pedestrian crossings) in the southern portion of the District.

Olney Avenue currently features a continuous bike lane across 3rd Street and under Bend Parkway, but high traffic speeds and volume reduce the safety of this east-west connection to downtown. Narrowing the relatively wide travel lanes on Olney is recommended.

Signals

Seven new signals will be placed throughout the district, at the intersections of 2nd and 4th Streets with Franklin, Greenwood, and Olney Avenues. These signals will provide bicycle and pedestrian crossings as well as traffic-calmed vehicle connections on these streets.

New On-Street Parking

In addition to helping motorists access businesses in the District, new on-street parking such as is recommended on Greenwood Avenue will buffer the pedestrian environment from moving motor vehicles and calm traffic. Additional opportunities for on-street parking can be identified on other streets in the District.

Managed Access

Managing access to businesses by consolidating multiple can reduce conflict points and promote visibility of moving motor vehicles, pedestrians, and bicycles. It also improves access for mobility devices along sidewalks.

Parking Supply and Management

As previously noted, implementation of an MMA requires reducing off-street parking requirements and developing an overall parking management strategy. The land use and urban design section of this Plan briefly describes several

general recommendations for reducing parking minimums or off-street parking requirements, consistent with previous recommendations from the CAP process.¹ Additional strategies related to parking supply and management include the following:

- Consider new off-street parking standards within the context of availability of on-street parking and existing surface lots.
- Further analyze actual parking demand in the MMA as a means to recalibrate parking standards.
- Further analyze establishment of maximum parking ratios as a means to reduce parking demand, support urban form goals and better integrate with alternative mode investments.
- Examine the potential adverse impacts to density that currently allow unlimited surface parking to meet code requirements for off-street parking.
- Evaluate the City’s role in strategically acquiring key surface parking lots that could serve as interim “fee-in-lieu” lots. This would allow fees-in-lieu” to be sold in advance of the need to construct a parking garage while at the same time allowing consolidation of parking to occur in a “district parking facility” format. Strategic sites would be identified to assure proximity to anticipated density. A strategy to consolidate parking would need to be tied to a decision to limit development of privately owned surface parking.
- Consider a floor area bonus for below grade parking.
- Relax parking requirements within the proposed BC-MMA zone (or specific areas within the MMA) for the on-street parking credit², off-site parking and/or shared parking.
- Consider the following specific approaches to modifying off-street parking requirements.
 - › Waive parking requirement for small restaurant/café/deli uses.
 - › Eliminate parking requirements for uses that are (a) 750 square feet or less and (b) fronted by curb space that provides on-street parking.
 - › Streamline definition of “commercial uses” to parallel the CBD and establish one parking requirement for all

1 Note that reduced minimum parking requirements may apply to any development that has more than one business through a shared parking agreement. A fee in lieu option for providing required off-street parking is also available to development in the BC-MMA zone, as currently drafted.

2 Under existing code, off-street required spaces may be met through on-street parking spaces at a 1 for 1 exchange, up to 50 percent of the requirement (3.3.300.B).

commercial uses (nine standards currently apply to non-CBD areas, pursuant to Table Table 3.3.300).
› Reduce minimum parking requirements that apply to any development that has more than one use. Current code requires parking for each individual use, as opposed to a “mixed use” parking standard.

Other Transportation Program Options

In addition to managing the supply of parking and creating an integrated land use and transportation plan, a variety of other strategies can be used to help manage the demand for travel within, to and from the MMA. These transportation options, also called “transportation demand management” (TDM) strategies are designed to reduce overall travel demand (specifically that of single-occupancy private vehicles or SOV) by redistributing it in space or time and providing additional transportation options. Strategies and programs are targeted at shifting the times of travel, varying the modes of travel, and diversifying the routes traveled. These efforts save employees and employers money. They can include physical access improvements, unbundled parking costs or parking cash-out for employees, and a variety of ride matching, carpooling, and transit programs.

The purpose of the Bend Central District MMA Project is to recommend ways to revitalize and facilitate future redevelopment in the area to include a combination of housing, businesses, and other uses to create a vibrant district. An important component of accommodating this growth and adding to this vibrancy will be transportation options and programs that allow more people to arrive to work and travel to and through the district by modes other than driving alone. These programs will work to improve the accessibility, mobility and vitality of the Central District business and light industrial area by reducing congestion, minimizing the amount of valuable land needed for auto parking, and making healthier, more vibrant environments.

Existing Options to Leverage

Opportunities for Commute Options Program



Commute Options operates the TO programs for Region 4.

Source: Commute Options

Since 1990, Commute Options has promoted transportation demand management solutions within Central Oregon with the mission to reduce drive alone trips. With funding support from ODOT, Commute Options continues to provide a wide variety of programs and services to achieve this mission. These programs include rideshare, Safe Routes to School, and events like Commute Options Week. Commute Options also leads outreach to schools and community groups.

Expand Commute Options “Drive Less. Connect.” Program

Commute Options partners with Oregon’s statewide ride-matching tool, “Drive Less. Connect” that matches people traveling to nearby destinations. In ODOT Region 4, there were 1,927 total participants in 2013. In 2013, those users logged almost 2 million non-SOV miles.³ This is an ideal tool for employees of the same company or for those working in close proximity. Through the Commute Options incentive program, users are able to earn gift cards by tracking and logging their trips on the program’s website.

Expanding the program to better target the unique needs of Central Business District employees that may not have access to safe and comfortable walking and biking routes will allow a more tailored fit effort to educate and encourage non-SOV trips in the district.

Waive Business Registration Fees and use other funds for rewards

Currently, businesses pay between \$50 to \$500 per year in membership fees (depending on the number of employees) to participate in the program. This member fee is used to fund the Commute Options Reward program since ODOT funds cannot be used to purchase rewards. If an alternative funding avenue was present, either through private sponsorship or through amending State policy, it may be possible to encourage more business to participate.

Develop a Guaranteed Ride Home Service

Adding a guaranteed ride home voucher system allows people to use a cab in the event they need to leave work earlier or later than their ride or travel somewhere not accessible by transit. These vouchers may be provided as a reimbursement or as a physical voucher given to the cab

3 Source: Drive less. Connect.; data as of 12/31/13

driver. They remove some of the hesitations that people have about losing travel flexibility when choosing transit, carpooling, or biking.

Encourage participation in commuter benefits

Commuter benefits programs like Commuter Benefit Solutions leverage the federal subsidy for bicycle commuting, transit, and parking. Employees receive tax-free benefits for commuting to work via public transportation, bicycle, or ridesharing. As a benefit to employers, enrollment in the program often reduces their payroll taxes, on average by about 7.5%. These benefits may be used to pay for transit service and or received as a check to be used at local bicycle shops.

There are no minimums for the number of employees participating and no time limit. For employers and employees, no complex record keeping is required. Copies of order forms need to be retained, but no special IRS reporting is needed.

Improve Transit Accessibility

The regional transit provider, Cascades East Transit (CET), provides transit service throughout central Oregon. In the study area, CET runs a number of routes, many converging at the Hawthorne Station Intermodal Center located at the eastern edge of the District.

While bus service is generally infrequent on many of the routes, the lack of high-quality pedestrian environment also presents a significant challenge to transit ridership. With improved pedestrian access throughout the study area, it is possible to encourage more employees, customers, and residents to use transit.

Develop Hawthorne Station Intermodal Center into a Mobility Hub

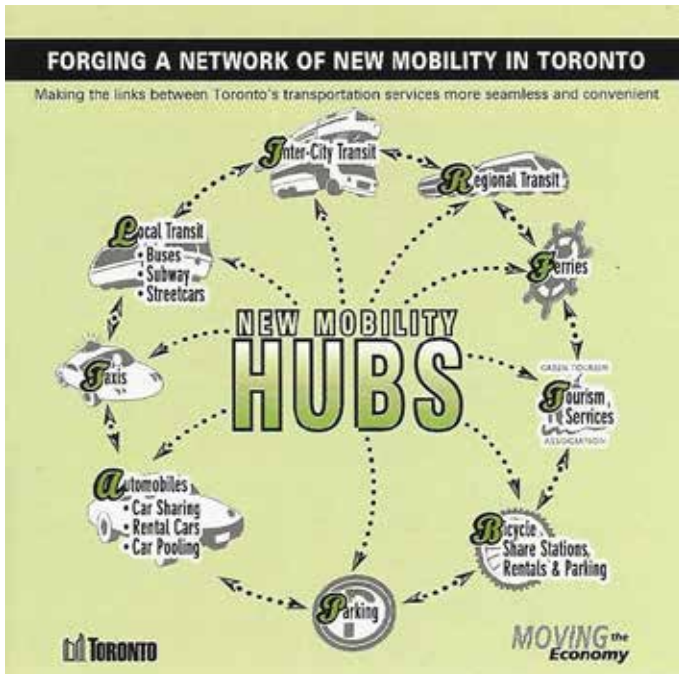
Mobility hubs are a place where transportation modes seamlessly connect. They usually involve transit, bicycle facilities, vehicle sharing such as car and vanpooling, concentrations of land uses, and an information component. They often serve as the origin, destination or transfer point for a significant number of trips.

Hubs might link or support:

- Multiple transportation operators, modes, and services
- Taxis or car-sharing vehicles (e.g. Car2Go)

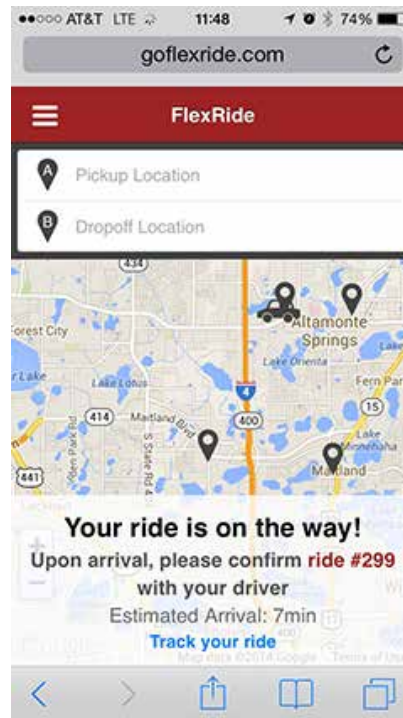
- Carpool or vanpool meeting points
- Long-term and short-term secure bike parking and bikeshare if available
- Inter-city buses and transit (e.g. Central Oregon Breeze)
- Ridesharing opportunities for drivers and passengers traveling to rural locations
- Cafes and public plazas
- Telecommuting services including Wi-Fi access
- Electronic fare-payment options and pricing mechanisms
- Real-time travel information for all modes
- Electric vehicle charging stations.

FlexBus, Station-to-Door service, or Jitney Service



Source: The New Mobility HUB Concept (Moving the Economy, 2006)

A key to the Mobility Hub concept is providing excellent connections to the bicycle and pedestrian transportation networks. Ensuring that safe and comfortable routes connect the study area to a location like the Hawthorne Station Intermodal Center will make it easier and more likely for people to travel to work by transit or a combination of alternative modes.



FlexRide mobile phone app makes it easy to book a near door-to-door transit experience.

A FlexBus system offers many of the conveniences of using a taxi, at a much lower cost. The user requests a ride from their computer, tablet, or smartphone, and meets the vehicle at either an existing spot nearby or at an arranged location. The vehicle drops off the passenger at or near their final destination. Costs are more than fixed-route bus lines, but significantly less than using a cab (since there can be multiple riders) or owning and maintaining a private vehicle for the user and much less expensive than dial-a-ride system for transit operators.

Create a Fareless Transit Zone

Currently, transit service on CET is a nominal cost. Fares in and around Bend cost riders \$1.50 for a full fare. Because of infrequent service and the perceived low-cost of driving, this may not attract users other than the transit dependent. Because of limited cost recovery, it may help ridership (and congestion, air pollution, and safety for all people) to drop the fare entirely.

By offering a fareless transit zone in and around Bend, more people may choose to use transit. Fareless zones have been used with success in Portland, Salt Lake City, and Pittsburgh among many internal examples. Currently, only a small portion of CET operations are covered by

collected fares. As Bend provides CET separate funds for the fixed-route bus system, there is an opportunity to explore increasing that contribution or to leverage contributions from local institutions (e.g., health care, colleges) and businesses to subsidize a fareless transit service.

Future Opportunities

Improved Bicycle and Pedestrian Transportation Networks

Getting people to walk and bike to work requires safe walking and biking environments. Currently, the walking and biking networks along and through the study area are not fully developed and do not make important connections to area businesses.

Following the direction of Section 6.9.4, Pedestrian and Bicycle Systems in the Bend Area General Plan and Chapter 7: Pedestrian and Bicycle System of the Bend Metropolitan Transportation Plan (MTP) provides opportunity to develop a cohesive continuous network for walking and biking in Bend.

Most applicable to the Central District, the MTP directs the development of walking and biking infrastructure and specific inclusion of bikeways and pedestrian ways during redevelopment. Additionally, the MTP includes guidance to provide secure bicycle parking at likely destinations. The MTP notes that bicycle parking should be, "convenient, easy to access and provide suitable protection from the weather."⁴ Key Bicycle and Pedestrian Policies include:

Policy 3, which directs the development of safe, and convenient bicycle and pedestrian circulation to major activity centers such as shopping areas with particular attention given to east-west access barriers such as Bend Parkway and the railroad tracks

Policy 4, which directs the facilitation of easy and safe bicycle and pedestrian crossings of major collector and arterial streets

Policy 11, support bicycle and pedestrian education and safety programs

Additionally, the MTP policies include various policies to ensure the installation, maintenance, and in-fill of sidewalks and bikeways during redevelopment and new construction.

4 <http://www.bend.or.us/modules/showdocument.aspx?documentid=5497>

Improved bicycle parking at businesses

A secure and convenient place to park a bicycle is necessary if a shift to bicycling in the study area is desired. The installation of basic staple racks near the main entrances of all local businesses provides easy access without the challenge or fear of finding secure parking.



Access-controlled bike parking provides both security and certainty for bicycle commuters. (Source: pdx.edu)

Staple racks near the front of establishments should be thought of like parking spots near stores' front doors: they should be reserved for the convenient use of customers, not employees. Additionally, basic staple racks may not provide the security and protection needed for extended parking.

Ideally, employers will provide covered, weather protected, secured parking for employees bikes. This may be indoors or in a covered facility adjacent to the business. These accommodations may be shared between a few employers in the case of shopping plazas.

An example of an industrial user that has seen the benefit of supporting multimodal commuting, Daimler Trucks North America opened a bicycle parking facility at their North American headquarters in Portland to accommodate 53 bikes and encourage more employees to ride bicycles to their Swan Island location. The new shelter has interior LED lighting, security camera, 24/7 key-card access, a bike repair stand, and includes roll-in and hanging racks.

Develop a Central District Business Alliance

Bringing together the voice and interests of employers and employees in the Central District in a unified organization will facilitate the implementation of TDM measures. Creating a business alliance may allow for better-coordinated

business development as well as provide support for TDM strategies and programs in the study area.

In Portland, the Swan Island Business Association, a group of light and heavy manufacturing and a variety of retail businesses, leveraged their collaborative working relationship to form the Swan Island Transportation Management Association (TMA). The TMA facilitates and implements appropriate and focused solutions that help business, productivity, freight circulation, and multimodal transportation options.

Make the Business Case for TDM

There is a strong business case for developing a transportation demand management program. Such a program can help employers and employees:

- Maintain or Reduce Commute Times
 - › Travel options will help maintain drive time
 - › Reduced traffic means faster drive times
- Support a Healthy Economy
 - › Travel options pay a “green dividend” in terms of reduced household transportation costs. These savings are often re-circulated in the local economy rather than being exported to oil and auto producing states and countries.
- Maintain Good Air Quality
 - › Reduced vehicle miles traveled mean lower mobile source emissions and less greenhouse gases
 - › Reduced emissions improve public health
- Manage Parking & Access
 - › Public and private cost savings from building parking

- › Increased development potential
- › Enhanced land values
- Support Community Health
 - › Increased exercise
 - › Improved employee productivity
 - › Reduced health care costs
- Enhance Value of Transit
 - › Increased ridership yields greater public return on investment
 - › Resident and household cost savings
- Long Term Roadway Operations & Maintenance Costs
 - › Extend the life of roads
 - › Public cost savings from avoided road maintenance and expansion

Rebrand the Central District

As the Downtown Bend Business Alliance is able to collect funds for events, reward programs, and beautification programs, so too can the Central District. Redevelopment strategies and transportation system changes may be the ideal opportunity to establish a business alliance. Through the collection of nominal membership fees, businesses can have more specialized incentive and education programs, support each other in developing shared auto and bicycle parking facilities for visitors and employees, and to work collaboratively toward improved walking and biking connections.

IMPLEMENTATION

A variety of activities will be needed to refine and implement the MMA Plan, including the following:

- Next steps in planning process
- Future cost estimating and funding strategy
- Redevelopment process
- Design and construction of specific improvement projects
- Future monitoring of highway conditions

Further MMA Planning

Several steps remain in the current phase of the MMA Planning process, including the following:

- Review of this MMA Plan and potential plan and code amendments with the Project Team (PT) and Technical Advisory Committee (TAC)
- Further refinements of the MMA Plan and potential plan and code amendments
- Joint meeting of the Bend Planning Commission, City Council and other community members to review the revised MMA Plan and potential plan and code amendments
- Preparation of final documents based on the review process described above

Those activities are expected to be completed by September, 2014. Assuming it is recommended as an outcome of the project, adoption of the MMA Plan and implementing plan and code amendments will be part of a future planning phase.

Cost Estimates and Financing Strategy

The planning team considered the relative costs of different transportation options in evaluating alternatives and also has worked with City staff to identify a set of planning level cost estimates for different types of improvements that can be used to help estimate improvement costs in the future. Planning level cost estimate information for similar types of improvements conducted elsewhere in the City is available in an appendix to this Plan. Preparing cost estimates will be an essential component of any future design and planning for specific improvement projects.

A variety of funding sources could be used to help finance improvements within the MMA area identified in this draft Plan. They include the following:

- **Transportation System Development Charges (TSDCs).** This mechanism can be used to pay for projects necessitated by new growth or development, particularly for increases in road capacity or improvements to sidewalks or other facilities. TSDCs may be an option for selected projects identified in the MMA Plan, especially if they increase capacity. In addition to the current TSDC, the City could contemplate adoption of area specific or “supplemental” SDCs to pay for improvements needed in specific locations (like the MMA) in the future.
- **State Highway Trust Fund.** A primary source of City street maintenance funds comes from the State Highway Trust Fund (SHTF). The SHTF is made up of a combination of statewide collected gas taxes, vehicle registration fees, fines and weight-mile taxes. The revenues are paid to cities and counties on a monthly basis from net receipts collected by the Motor Vehicles Division, Highway Division and the Motor Carrier transportation Branch. State law stipulates that these funds are limited to road related purposes on public right-of-way only. Some projects identified in the MMA Plan may be eligible for these funds, particularly improvements on portions of 3rd Street and Greenwood Avenue, which serve as state highways (US 20/97).
- **State Liquor and Cigarette Taxes and State Shared Revenues.** The City also receives state revenue sharing - Liquor and Cigarette Taxes and State Shared Revenues on a formula basis. These taxes may be used for general

government services, without program restrictions on their use. The cigarette taxes have also been used by the ODOT - Public Transit Division for the benefit of transportation services for the elderly and handicapped. The City has used grants from state Special Transportation Funding (STF) to purchase new and replacement Dial-A-Ride (DAR) vehicles. Similarly, these funds may be a potential source for future transit improvements in the study area.

- **Federal Funding.** Two back-to-back, six-year funding bills, authorized by Congress, have been a source of federal transportation funding to the City through the 1990s. These federal funding acts include the Intermodal Surface Transportation Enhancement Act (ISTEA) and the Transportation Enhancement Act for the 21st Century (TEA-21) and Moving Ahead for Progress in the 21st Century Act (MAP-21). These acts have been and may continue to be a source of revenue for the City of Bend through both grant and revenue sharing programs and may continue to be a source of funding for selected projects in the area, particularly pedestrian and bicycle facility enhancements.
- **Franchise Fees.** The City collects franchise fees from local utility companies that utilize public right-of-ways for the conveyance of their services. Franchise fees are currently collected from a variety of utility and communications companies. A portion of the funds derived from the franchise fees are expended for maintenance and street improvement needs based on the priorities set by City Council.
- **Developer Exactions.** Developers are required, without reimbursement, to build the local streets serving their developments. As redevelopment occurs in the MMA area, developers will be required to pay for their proportionate share of improvements to local streets and other facilities that serve their developments.
- **Urban Renewal Funding.** Urban renewal, or tax increment financing, is a financing tool that has been used by the City to improve certain “blighted” areas of the community. This method of funding has been used to fund a variety of projects in the downtown and other areas including a number of transportation related improvements. Similarly, the City could consider use of urban renewal as a funding strategy in the future MMA.
- **Other Possible Funding Sources.** The City’s Transportation System Plan identifies a variety of other possible funding sources that could be used to pay for future transportation improvements. They include the following:
 - › Local gas tax
 - › Local vehicle registration fee
 - › Transient room tax
 - › Local Improvement Districts

Further consideration of these sources would require extensive discussion by the community.

Redevelopment Process

The MMA Plan assumes a significant amount of future development and redevelopment in the Central District resulting in a large number of new housing units and businesses and transformation into a more vibrant, mixed use area. By necessity, private property owners and developers will be key community partners in design, construction and funding of both private and public improvements. The previous section identifies developer exactions or contributions as one source of funding for public improvements. Other related funding strategies may include:

- **Fee In Lieu of Construction.** This fee is collected when required street frontage improvements, typically associated with residential construction, are impractical to build at the time of development. These funds are limited in both how and where they can be spent.
- **Development agreements.** These agreements are typically used to help pay for improvements that are not funded through the other sources identified here.

In working with property owners and developers, the City may also want to consider use of the following tools:

- **Proactive communication.** Private market developers appreciate clarity and certainty in the design and permitting process. Certainty helps the developer save time, make decisions to proceed, and avoid costly surprises further along in the process. In some cases, a developer will even prefer the certainty of a clear process even if it has greater requirements and fees, over a complex and unclear process with nominally lower requirements and fees. This means that City development code, design review process, permitting process, fees etc. should be as easy as possible for the developer to understand and navigate.
- **Development incentives.** These may include height or density bonuses, parking requirement reductions, streamlined permitting processes, reduced application or development fees, assistance with land assembly efforts and/or joint marketing of catalytic development sites. Some of these strategies are described in more detail in previous sections of this Plan.

Design and Construction of Infrastructure Projects

This plan describes a proposed, conceptual transportation network for the MMA area and identifies a variety of potential strategies to improve transportation facilities for drivers, freight vehicles, pedestrians, bicyclists and transit users. It identifies key elements of major streets and conceptual designs for selected intersection improvements. However, more work will be needed to further design and implement specific transportation improvements. Any of the improvements identified in this Plan would need to go through a more detailed design and planning process and would involve further coordination with local property owners, the Oregon Department of Transportation and other public and private stakeholders and community members. Those processes would consider a variety of factors, including but not limited to the following:

- Alternative designs and their impacts on access, safety and mobility
- Integration with existing and planned future land uses
- Economic impacts and benefits for the city, as well as developers and property owners
- Timing and phasing of construction
- Notification and mitigation of impacts of construction and future maintenance

Future Monitoring of Highway Conditions

To the extent that implementation of the land use and transportation assumptions and improvements incorporated in the MMA Plan are projected to have any future significant safety or mobility impacts on the state highway system, the City and ODOT will monitor those potential impacts and agree on strategies to address them. In general, such impacts would be identified through this MMA planning process or subsequent related analysis or design of improvements identified in the Plan. Strategies for monitoring and addressing impacts could include the following, among others:

- Establish and implement a schedule for conducting traffic counts on facilities that are projected to exceed capacity during the planning horizon; if counts exceed a certain threshold, identify a process for mitigating impacts on mobility or safety.
- Identify a process for addressing safety issues as evidenced by accident rates that exceed local or state thresholds.

- Address any needed facility mitigation or improvement solutions in the next update of the City of Bend's Transportation System Plan (TSP).

NEXT STEPS

City and ODOT staff and the consulting team will review this draft Plan and associated draft amendments to the City's General Plan, Transportation System Plan (TSP) and Development Code with the Project Team (PT) and Technical Advisory Committee (TAC), the Bend Planning Commission, the Bend City Council and other community members. Feedback will be incorporated into a final draft of the Plan and associated TSP, General Plan and code amendments to the City's General Plan, Transportation System Plan, and Development Code. This work is expected to be completed by September, 2014.