Appendix A

Evaluation Criteria Matrix

Bend Central District MMA

Evaluation Criteria Matrix for Transportation Network Options

Please use the following system to score alternatives:

5	**Better than other alternatives**
3	**About the same as other alternatives**
1	**Worse than other alternatives**

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

Appendix B

MMA Boundary Alternatives from Bend MMA Technical Memorandum #4

Figure 2. MMA Boundary Alternative #1 – BCD Study Area

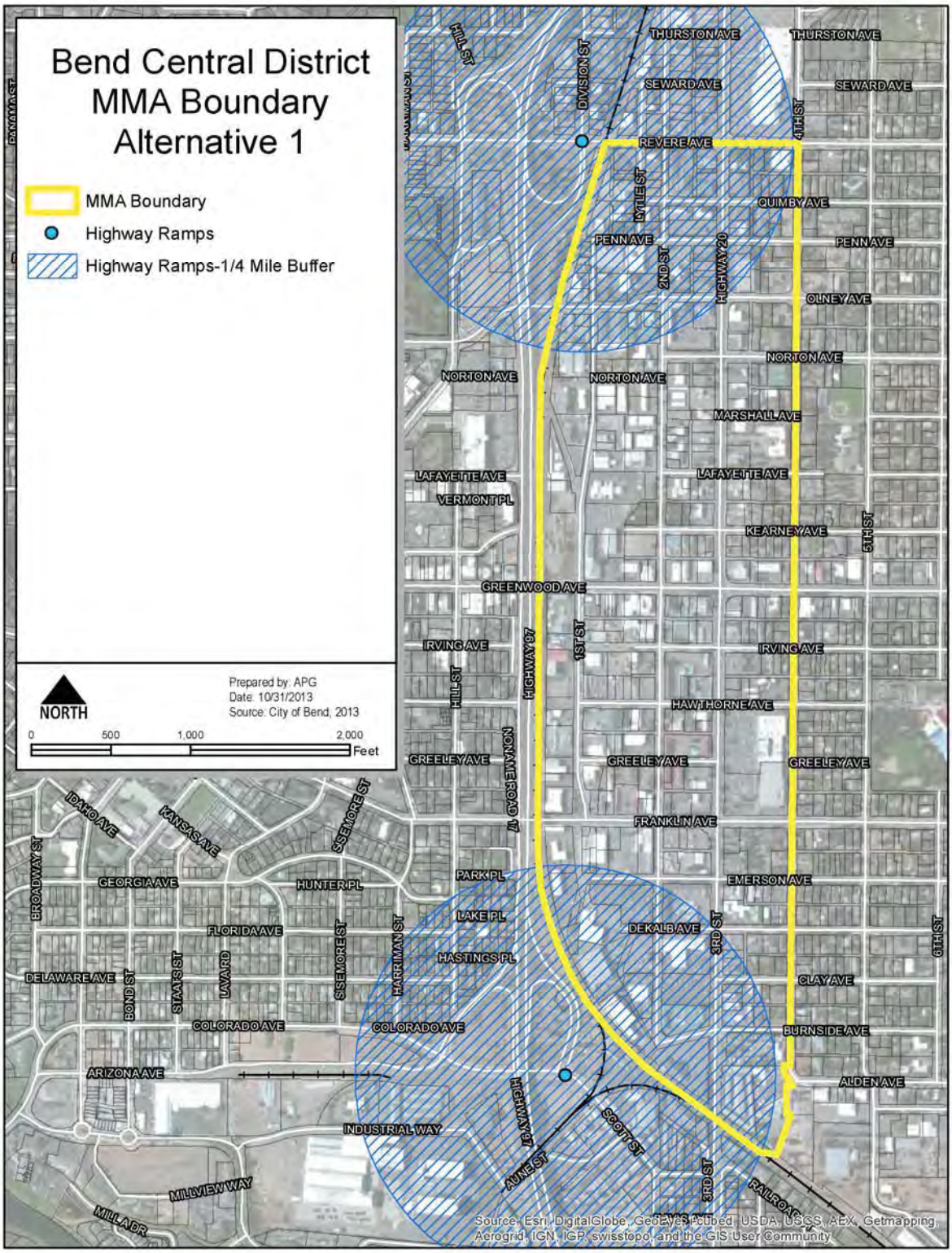


Figure 3. MMA Boundary Alternative #2 – Central Location

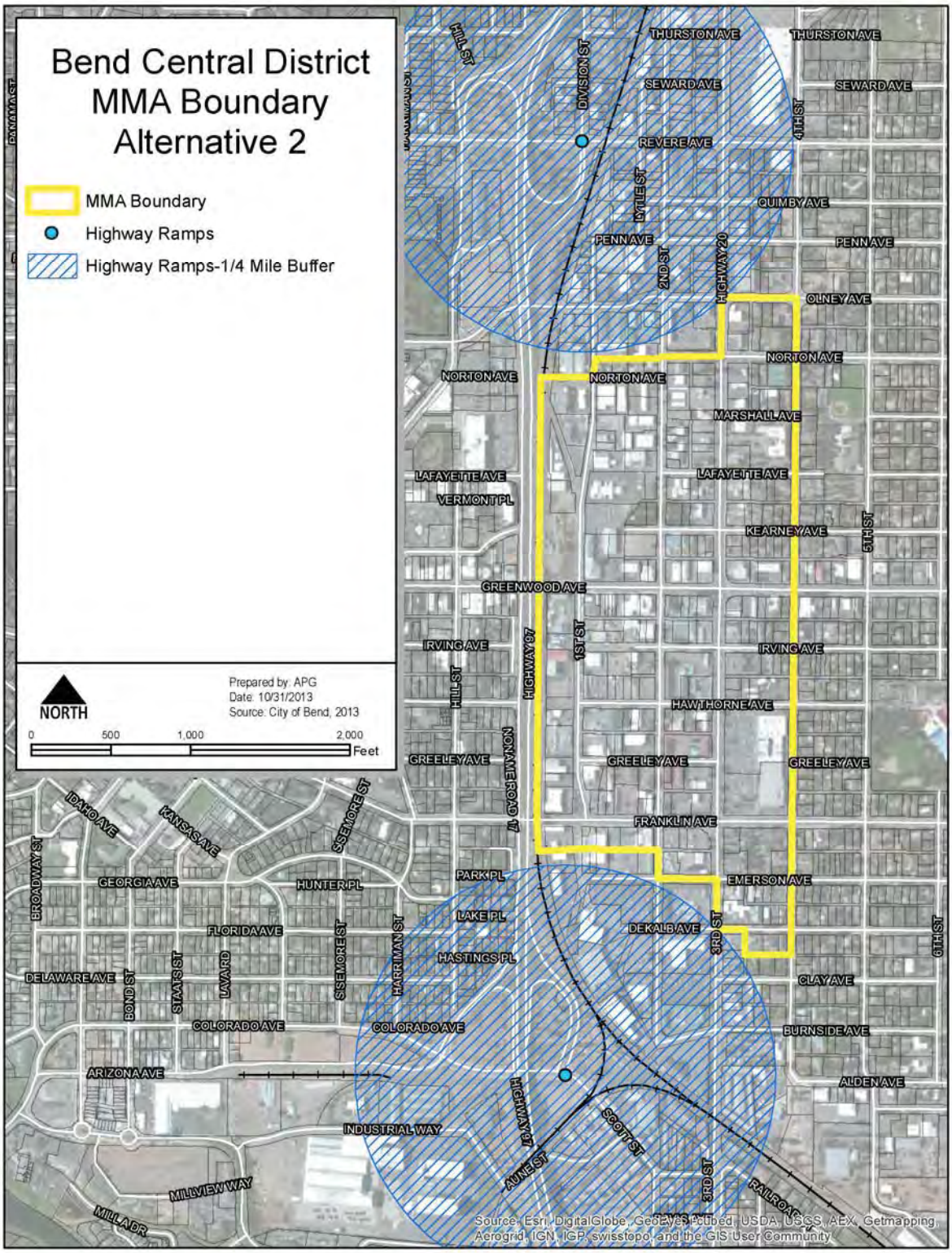


Figure 4. MMA Boundary Alternative #3 – Southern Location

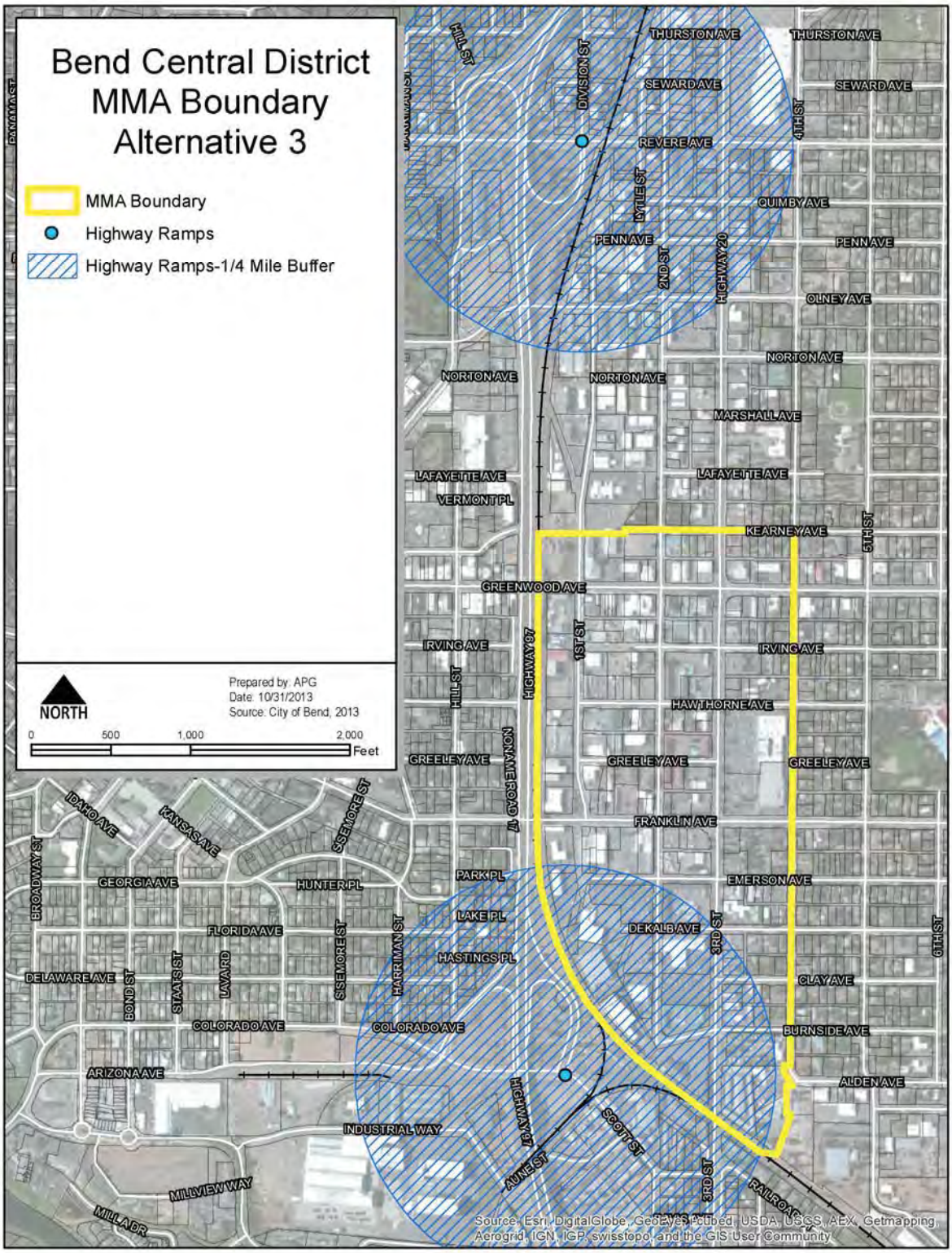
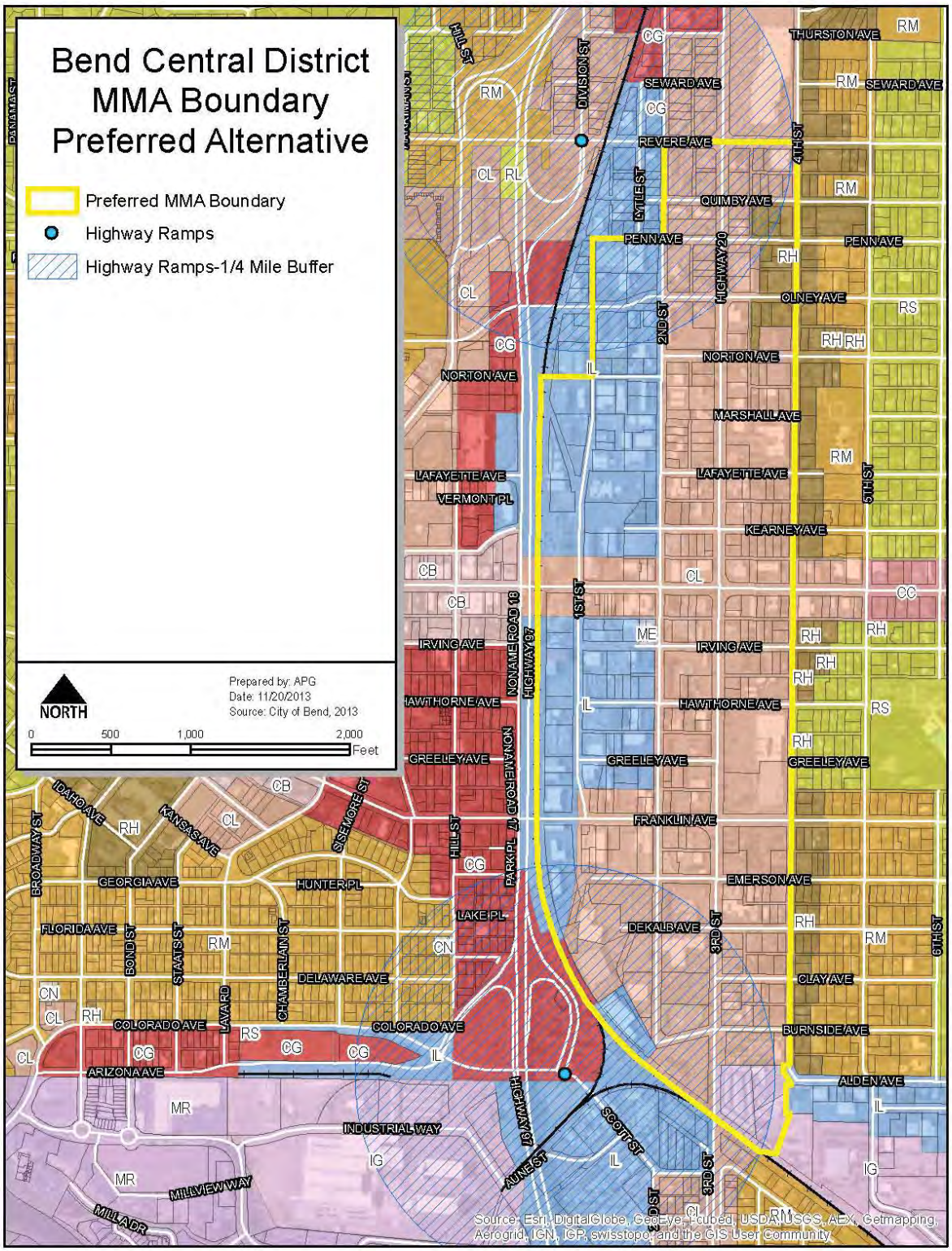


Figure 5. Preliminary Preferred MMA Boundary Alternative



Appendix C

Transportation Options Maps

Transportation Option 1: 2nd/3rd Street Couplet

BEND CENTRAL DISTRICT MMA PROJECT

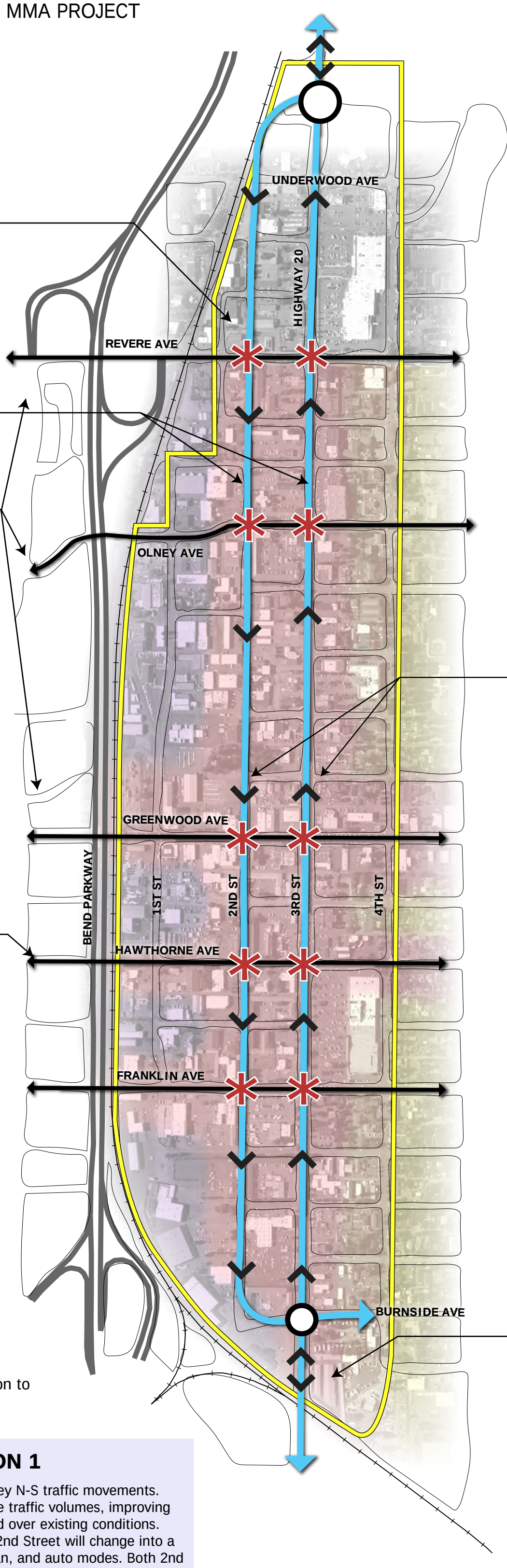
MARCH 20, 2014

New intersection controls allow 2nd street to cross Olney, Revere, Greenwood, Hawthorne, and Franklin.

Sidewalk, safety, and landscape improvements along 2nd and 3rd Streets.

Streetscape and multi-modal transportation improvements along key east-west streets strengthen the connection between the BCD and downtown.

Hawthorne connected for key new E-W street focused on bicycle, pedestrian, and transit connections to Downtown.



2nd Street & 3rd Street have 2 travel lanes, making room for wider sidewalks, on-street parking, and/or bicycle lanes. This provides narrow crossings of 2nd and 3rd for people walking and biking. Some additional right-of-way may be needed.

Improvements to the 3rd Street railroad underpass create a more welcoming entry point for people visiting from southern neighborhoods.

Potential MMA Boundary

Intersection Improvements/ Traffic Signal

Roundabout

Traffic Direction

2-Lane Street

3-Lane Street

4-5 Lane Street

Key E-W Connection to Downtown

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.

SUMMARY OF OPTION 1

Adds 2nd Street to 3rd Street for key N-S traffic movements. Allows 3rd Street to have 1/2 of the traffic volumes, improving walking & biking along & across 3rd over existing conditions. While 4th Street will remain as-is, 2nd Street will change into a key route serving bicycle, pedestrian, and auto modes. Both 2nd and 3rd Street will only have 2 lanes to cross.

Transportation Option 2: Expanded Grid

BEND CENTRAL DISTRICT MMA PROJECT

MARCH 20, 2014

Assumes 2 roundabouts north of Revere to tie 2nd, 3rd, and 4th together.

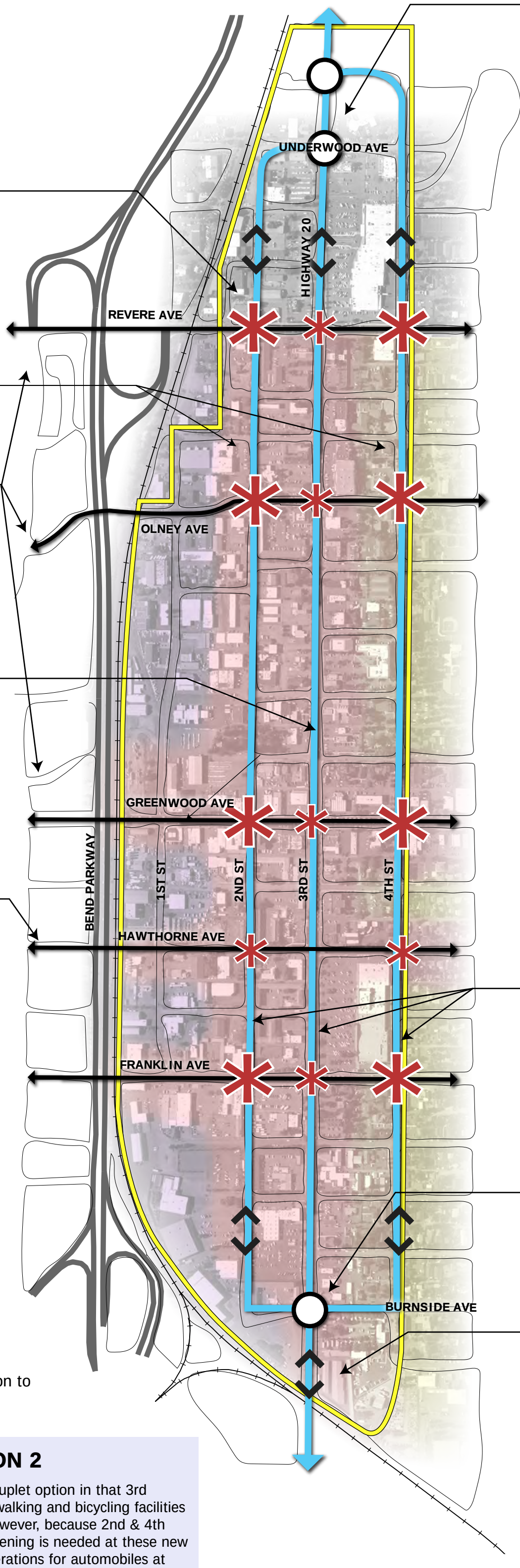
All 2nd and 4th St intersections with major cross streets are assumed to have additional right-turn lanes added to provide for capacity needs.

No bike lanes assumed on 2nd or 4th

Streetscape and multi-modal transportation improvements along key east-west streets strengthen the connection between the BCD and downtown.

3rd Street reduced to one travel lane in each direction and a center turn lane, making room for wider sidewalks, on-street parking, and bicycle lanes.

Hawthorne connected for key new E-W street focused on bicycle, pedestrian, and transit connections to Downtown.



2nd, 3rd, and 4th part of an interconnected street system. 2nd and 4th have one travel lane in each direction with turn pockets and signals at major cross streets.

Assumes 1 roundabout at 3rd and Burnside to tie 2nd, 3rd, and 4th together.

Improvements to the 3rd Street railroad underpass create a more welcoming entry point for people visiting from southern neighborhoods.

Potential MMA Boundary

Intersection Improvements/ Traffic Signal

Roundabout

Traffic Direction

2-Lane Street

3-Lane Street

4-5 Lane Street

Key E-W Connection to Downtown

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.

SUMMARY OF OPTION 2

Very similar to 2nd & 4th Street Couplet option in that 3rd Street is enhanced with improved walking and bicycling facilities along with a narrower crossing. However, because 2nd & 4th are two-way streets, additional widening is needed at these new major intersections to enhance operations for automobiles at the detriment of the bicycle/pedestrian environment. No bike lanes will be added on 2nd or 4th street but the sidewalk will be enhanced.

Transportation Option 3: 2nd & 4th Street Couplet

BEND CENTRAL DISTRICT MMA PROJECT
MARCH 20, 2014

Assumes Couplet tie-in north of Revere.

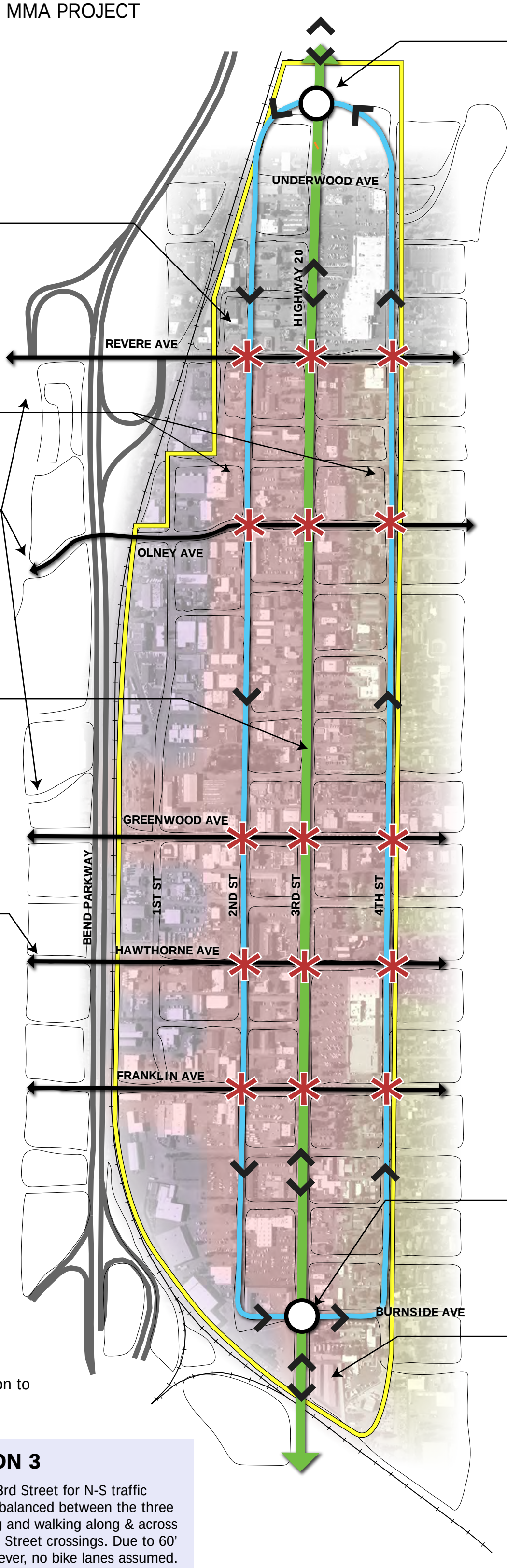
All 2nd and 4th St intersections with major cross streets are assumed to have additional right-turn lanes added to provide for capacity needs.

No bike lanes on 2nd or 4th. Sidewalk, safety, and landscape improvements along 2nd and 4th streets.

Streetscape and multi-modal transportation improvements along key east-west streets strengthen the connection between the BCD and downtown.

3rd Street reduced to one travel lane in each direction and a center turn lane, making room for wider sidewalks, on-street parking, and bicycle lanes. 3rd Street design promotes slower traffic speeds.

Hawthorne connected for key new E-W street focused on bicycle, pedestrian, and transit connections to Downtown.



Potential MMA Boundary

Intersection Improvements/ Traffic Signal

Roundabout

Traffic Direction

2-Lane Street

3-Lane Street

4-5 Lane Street

Key E-W Connection to Downtown

Assumes roundabout tie-in or other signal control at Burnside.

Improvements to the 3rd Street railroad underpass create a more welcoming entry point for people visiting from southern neighborhoods.

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.

SUMMARY OF OPTION 3

Adds 2nd Street and 4th Street to 3rd Street for N-S traffic movements. Traffic is more evenly balanced between the three streets, allowing improved bicycling and walking along & across 3rd Street because of narrower 3rd Street crossings. Due to 60' Right Of Way on 2nd and 4th, however, no bike lanes assumed. All streets would have enhanced sidewalks & pedestrian crossings.

Transportation Option 4: 3rd Street Streetscape Enhancements

BEND CENTRAL DISTRICT MMA PROJECT

MARCH 20, 2014

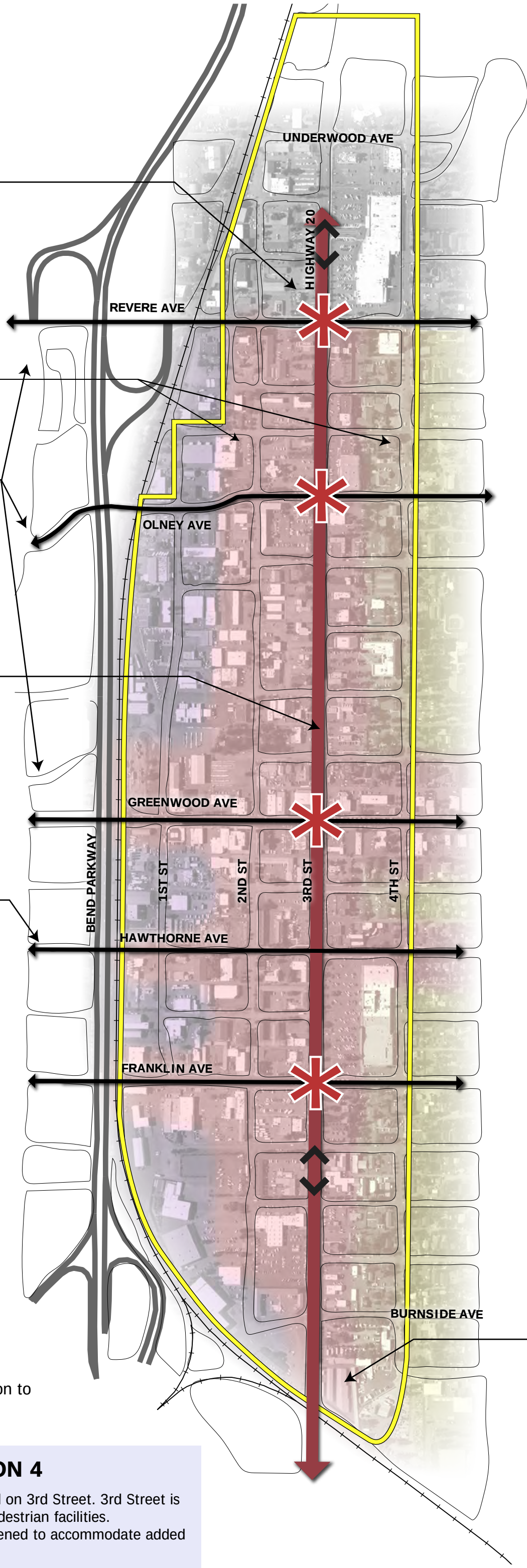
Intersections on 3rd street widened with additional right turn lanes to accommodate growth in traffic.

2nd & 4th Streets will not change from today.

Streetscape and multi-modal transportation improvements along key east-west streets strengthen the connection between the BCD and downtown.

3rd Street remains at two lanes in each direction with a center turn lane. Widening or restriping needed to make room for wider sidewalks, on-street parking, and bicycle lanes, making 3rd Street crossings longer.

Hawthorne connected for key new E-W street focused on bicycle, pedestrian, and transit connections to Downtown.



Improvements to the 3rd Street railroad underpass create a more welcoming entry point for people visiting from southern neighborhoods.

Potential MMA Boundary

Intersection Improvements/ Traffic Signal

Roundabout

Traffic Direction

2-Lane Street

3-Lane Street

4-5 Lane Street

Key E-W Connection to Downtown

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.

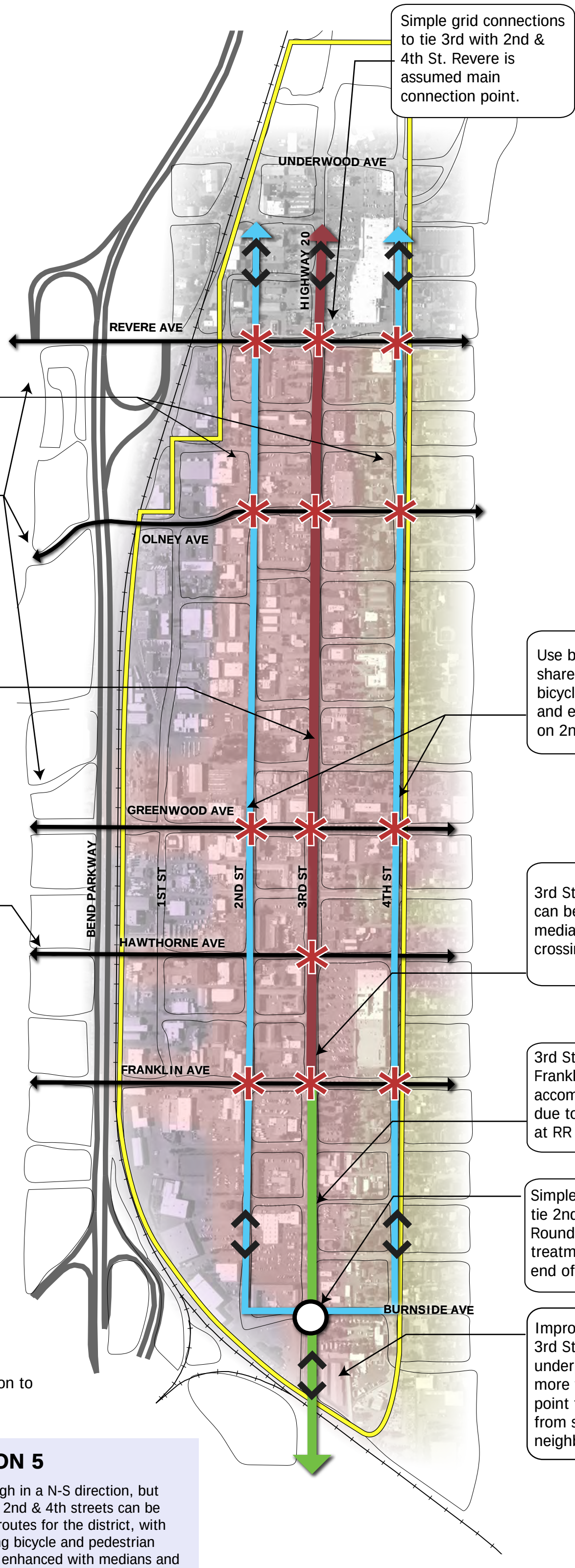
SUMMARY OF OPTION 4

Traffic is retained & accommodated on 3rd Street. 3rd Street is widened to improve bicycle and pedestrian facilities. Intersections on 3rd street are widened to accommodate added traffic.

Transportation Option 5: Hybrid

BEND CENTRAL DISTRICT MMA PROJECT

MARCH 20, 2014



Simple grid connections to tie 3rd with 2nd & 4th St. Revere is assumed main connection point.

Sidewalk, safety, and landscaping improvements along 2nd and 4th streets.

Streetscape and multi-modal transportation improvements along key east-west streets strengthen the connection between the BCD and downtown.

3rd Street stays at 5 lanes. Nominal bike lanes added through striping changes and/or modest increase in right-of-way.

Hawthorne connected for key new E-W street focused on bicycle, pedestrian, and transit connections to Downtown.

Use bicycle lanes or shared markings for bicycles to accomodate and encourage bicycles on 2nd and 4th.

3rd Street crossings can be enhanced with medians or pedestrian crossing signals.

3rd Street south of Franklin could accommodate 3 lanes due to width restrictions at RR underpass.

Simple grid connections tie 2nd and 4th together. Roundabout gateway treatment at Southern end of district.

Improvements to the 3rd Street railroad underpass create a more welcoming entry point for people visiting from southern neighborhoods.

Potential MMA Boundary

Intersection Improvements/ Traffic Signal

Roundabout

Traffic Direction

2-Lane Street

3-Lane Street

4-5 Lane Street

Key E-W Connection to Downtown

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.

SUMMARY OF OPTION 5

2nd & 4th Streets connected through in a N-S direction, but because 3rd street retains 5 lanes, 2nd & 4th streets can be designed as low-speed circulation routes for the district, with low volumes, better accommodating bicycle and pedestrian traffic. 3rd Street crossings can be enhanced with medians and rapid flash beacons at minor crossing locations.

Appendix D

Transportation Alternatives and Multimodal Level of Service (MMLOS) Analysis

Future No-Build Assessment

LOS for Autos

With no improvements to 2nd, 3rd, or 4th Streets, north-south travel demand through the Central District would continue to rely on a five-lane 3rd Street, which would provide the only signalized intersections at busy east-west streets such as Revere Avenue, Greenwood Avenue, and Franklin Avenue. This means that high north-south volumes will continue to focus at intersections along 3rd Street rather than being distributed to other north-south streets. HCM analysis shows that high delays (LOS E) will occur at 3rd/Greenwood and 3rd/Franklin, and many unsignalized east-west approaches to 3rd Street will experience LOS F. This condition is characterized by significant delays at intersections, generally with long queues and vehicles waiting multiple signal cycles to proceed through the intersection.

The no-build network also features high delay for side street movements at unsignalized intersections along 3rd Street and Greenwood Avenue. Most of these intersections operate at LOS F for minor movements, indicating the difficulty for vehicles attempting to cross or turn left onto these major streets from local streets. Minor street intersections on Greenwood Avenue generally perform poorly under all alternatives, but many minor street intersections along 3rd Street improve under alternatives where traffic volume is redistributed to 2nd Street and/or 4th Street.

Intersection levels of service in the study area are shown in Figure 2.

LOS for Bicycles

Under no-build conditions, north-south bike lanes continue to be nonexistent in the study area. 3rd Street varies between LOS E and LOS F, and 4th Street varies between LOS A and LOS D. Note that the bike LOS is on a segment level, and does not account for delays for people attempting to ride bikes across busy streets like Greenwood Avenue while traveling low-traffic streets like 4th Street. 2nd Street provides generally good segment LOS, but is not fully connected through the study area. A plot showing bicycle LOS performance is shown in Figure 3.

LOS for Pedestrians

Pedestrian level of service on an unimproved 3rd Street varies between LOS C and LOS D throughout, while LOS is generally A on 2nd and 4th Streets, with a few exceptions where there are currently sidewalk gaps. As with the bicycle LOS, this analysis was done on a segment basis, and does not consider the delay, comfort, or safety of pedestrians crossing at busy arterials such as Greenwood Avenue. Also, note that the importance of pedestrian LOS may vary by the amount of likely foot traffic, with 3rd Street currently having significantly more destinations that the other north-south streets. Pedestrian LOS through the study area is shown in Figure 4.

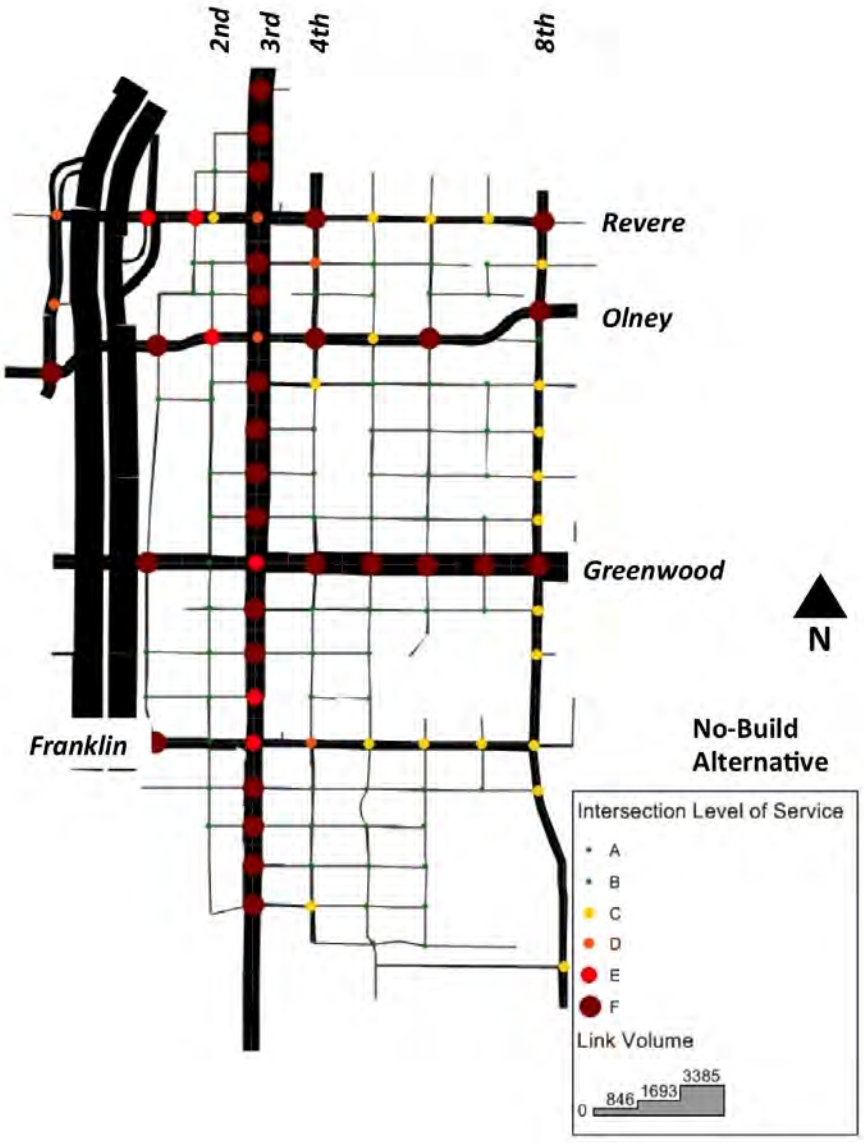


Figure 2: No-Build Intersection LOS

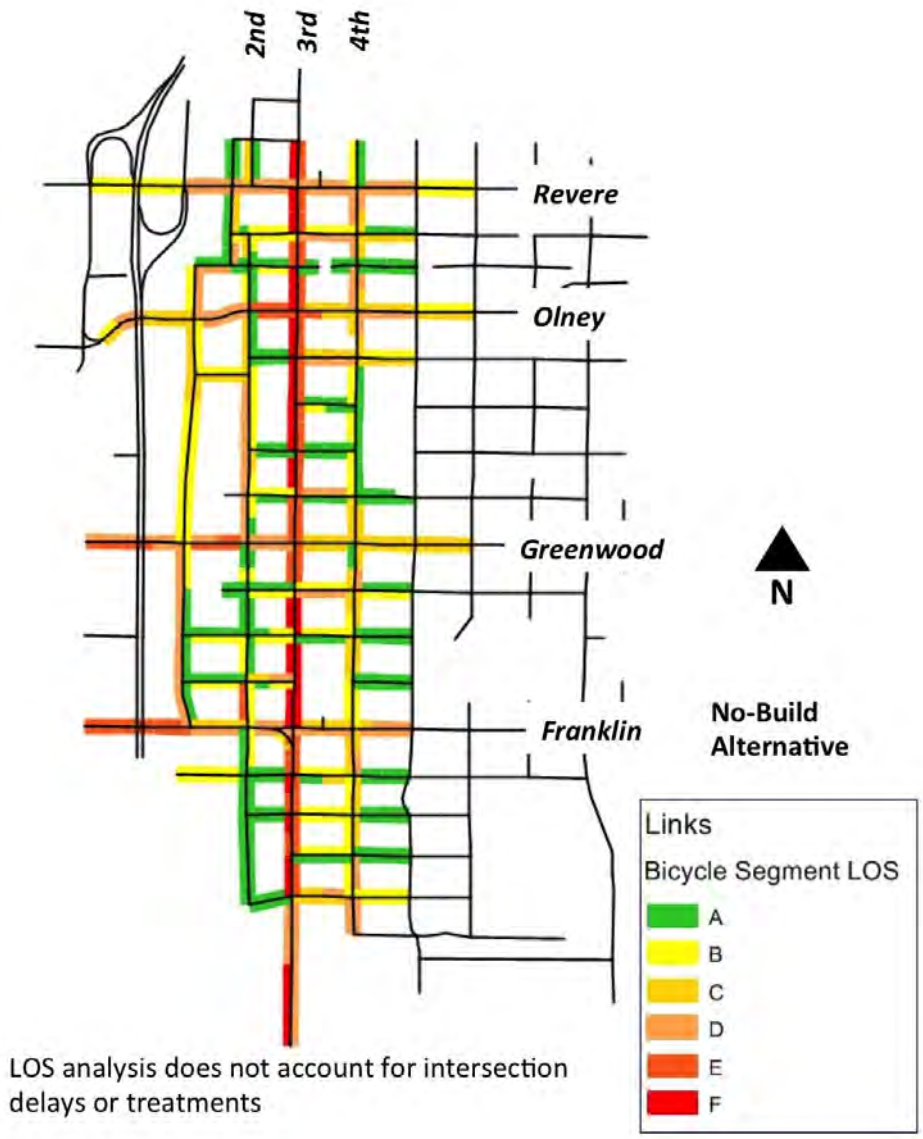


Figure 3: No-Build Bicycle LOS

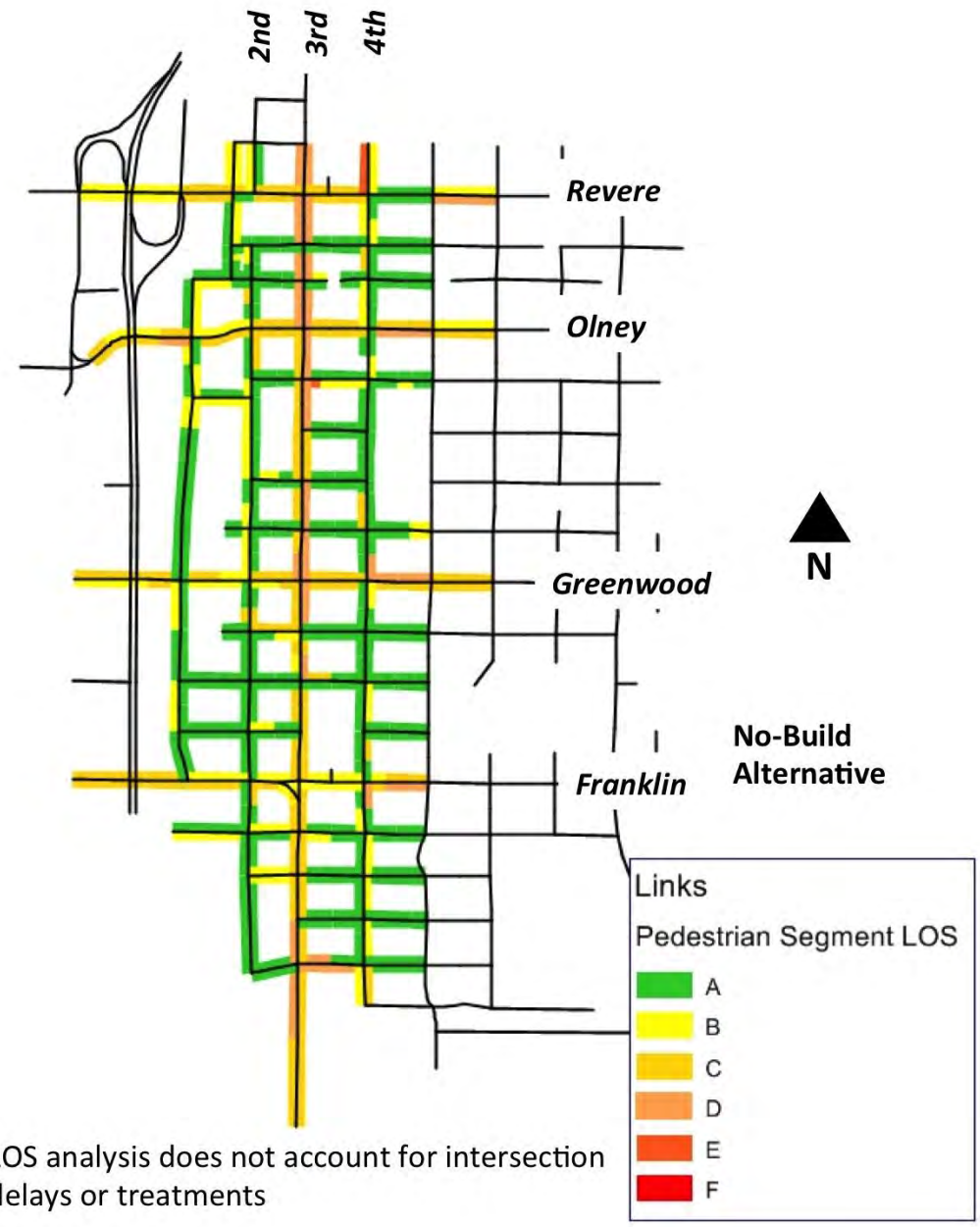


Figure 4: No-Build Pedestrian LOS

Central District Network Alternatives

Four transportation network alternatives were presented in the Central Area Plan (CAP). Three options add north-south roadway capacity while the fourth proposes multimodal improvements without adding auto capacity. The four sections below present intersection, bicycle, and pedestrian LOS findings based on the alternatives' varying network characteristics. Descriptions of the detailed intersection improvements assumed for each scenario are listed in the appendix.

2nd/ 3rd Street Couplet with Enhancements (BCAP Option 1)

Option 1 involves developing a one-way couplet system using 2nd Street as the southbound half of the couplet and converting 3rd Street to the northbound half of the couplet, with each street having two vehicular travel lanes. Both streets would be provided with widened sidewalks and bicycle lanes, narrowed pedestrian crossings of both 2nd and 3rd Streets, management of access to adjacent properties, and potential on-street parking. Some changes could be made to Greenwood and Franklin Avenues at the new 2nd Street intersection approaches.

LOS for Autos

In general, the 2nd/3rd Street couplet operates better than the No-Build option. Signalized intersections that operated at LOS E under no-build conditions, at Greenwood and Franklin Avenues, operate at LOS C under this network alternative. New signalized intersections on 2nd Street operate reasonably well, too, with all providing LOS C or better. Side street delays at stop-controlled 3rd Street intersections operate better under this network as well. Note that this and other couplet network options will likely increase out-of-direction travel to and from land uses along the one-way streets. Vehicle LOS under this alternative is shown in Figure 5.

LOS for Bicycles

Bicycle performance is improved under the 2nd/3rd Street couplet, with conditions on 3rd Street improving to a mix of LOS C and D, while LOS on 2nd Street drops from A to B. Again, it's important to note that this analysis does not account for delays for people attempting to ride bikes across busy streets like Greenwood Avenue. These delays are significantly reduced on 2nd Street with the addition of multiple traffic signals on the corridor. Note that 2nd Street is fully connected through the study area in this network alternative. A plot showing bicycle LOS performance is shown in Figure 6.

LOS for Pedestrians

Pedestrian level of service on a one-way 3rd Street is generally LOS B or C throughout, improving on the no-build condition due to wider sidewalk and improved buffer from traffic. Performance on 2nd Street is degraded compared to the no-build, generally performing at LOS C due to significantly

increased vehicular traffic and minimally wider sidewalks. Pedestrian LOS through the study area is shown in Figure 7.

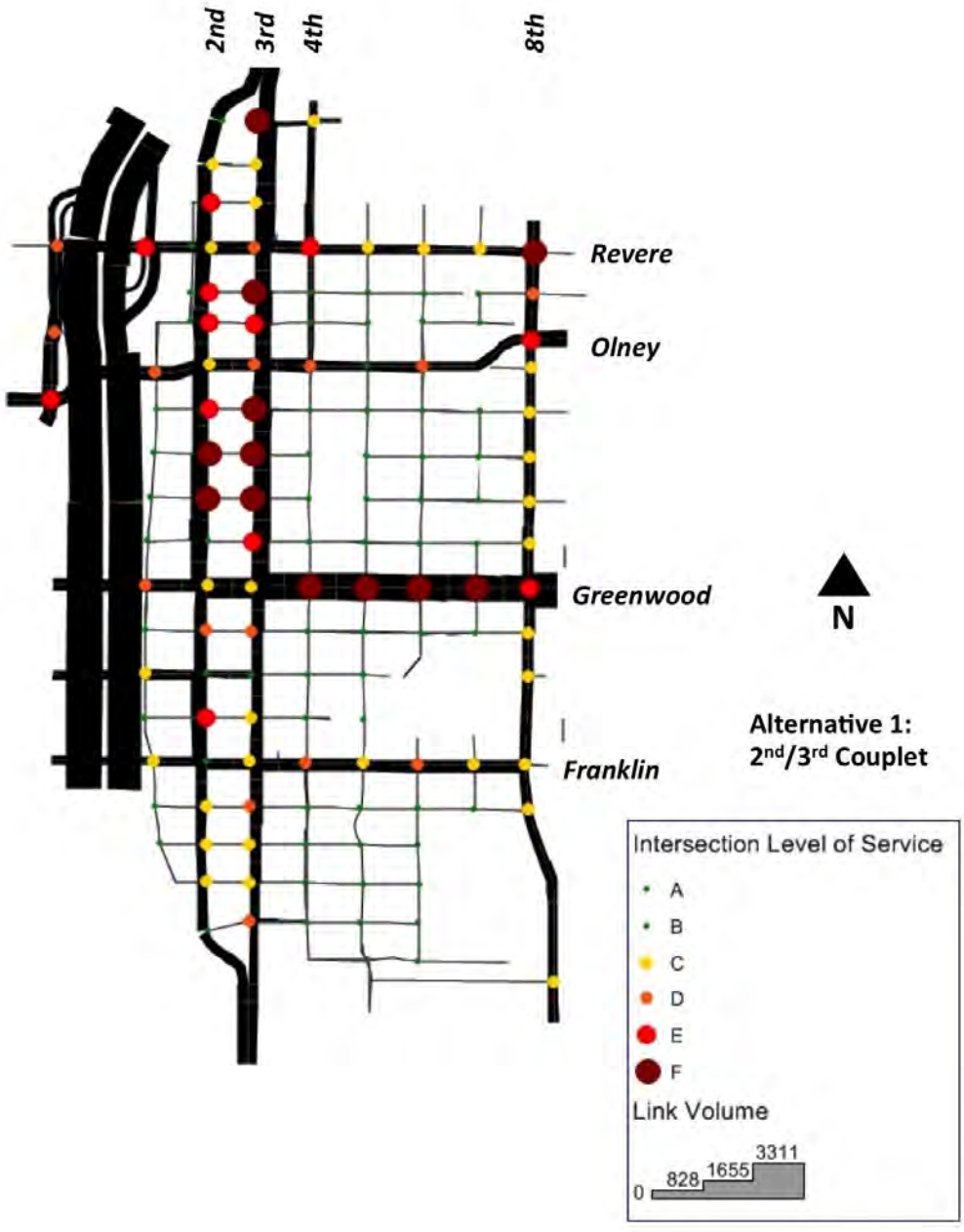


Figure 5: Alternative 1 Intersection LOS

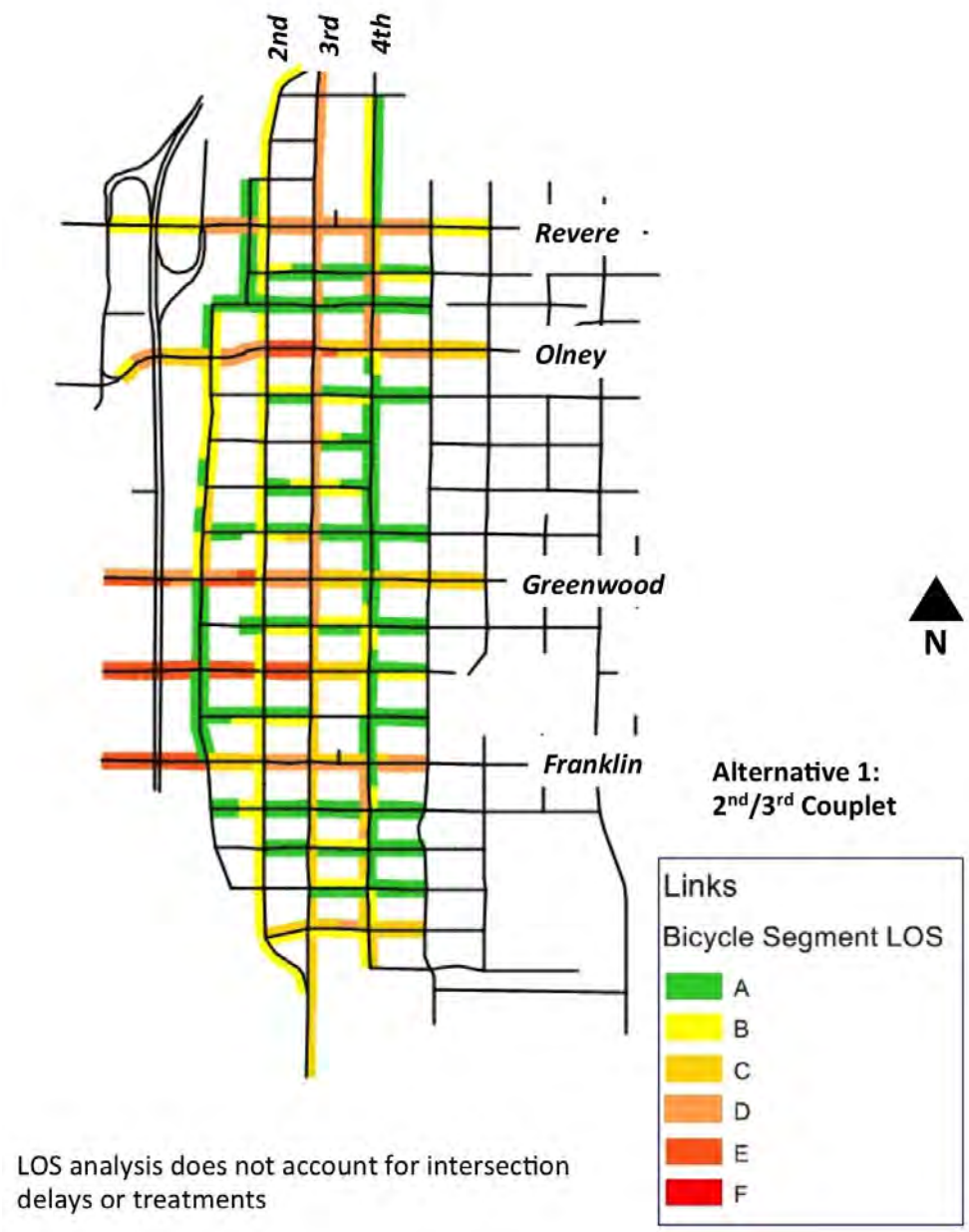


Figure 6: Alternative 1 Bicycle LOS

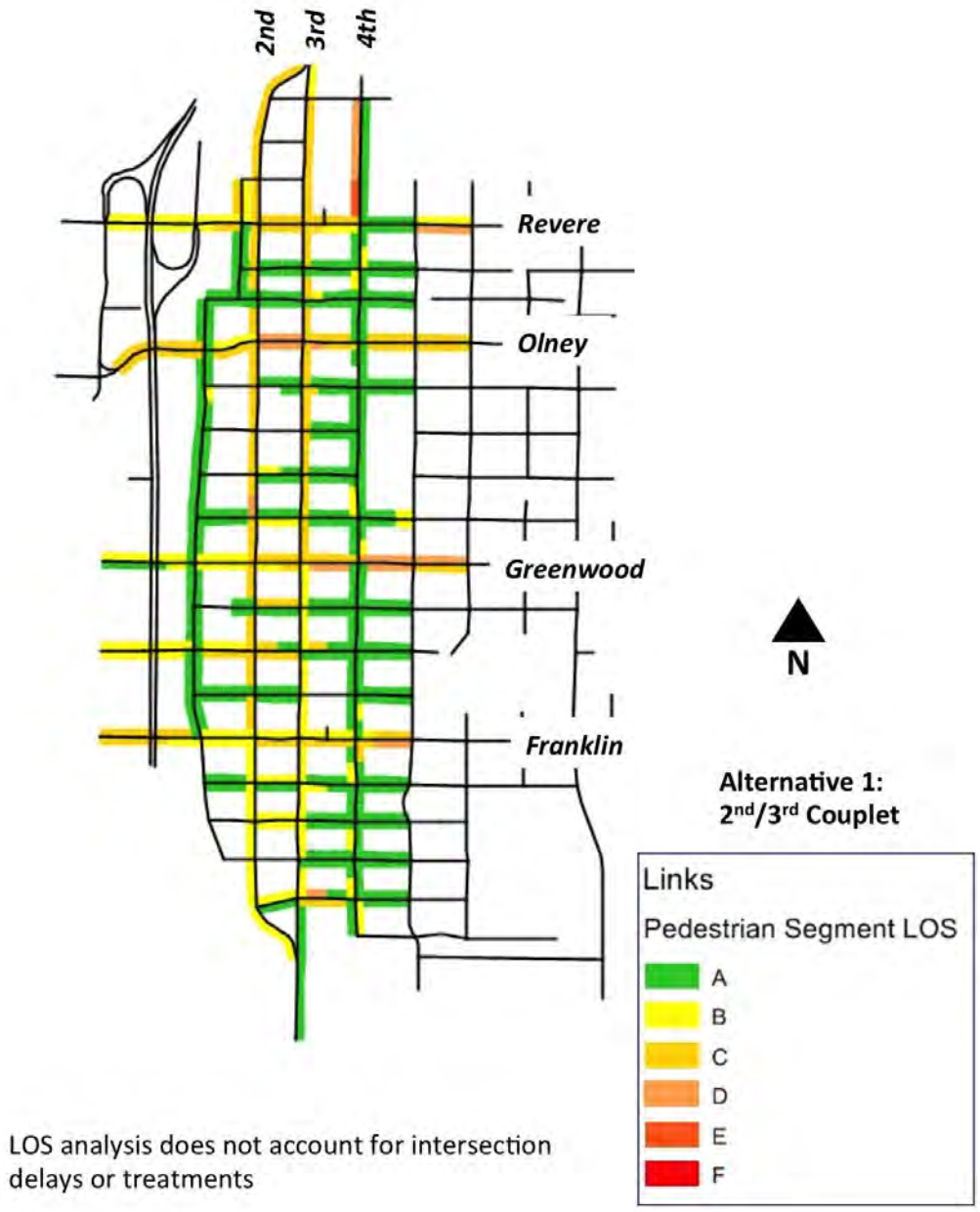


Figure 7: Alternative 1 Pedestrian LOS

Expanded Grid (BCAP Option 2):

This scenario involves the continued use of 3rd Street for two-way traffic operations with development of an expanded grid system throughout the area between roughly Revere Avenue on the north and Burnside Avenue on the south. This expanded grid system could include potential widening on 2nd and 4th Streets with traffic signal control or roundabouts at major intersections. 2nd and 4th Streets would help relieve capacity to 3rd Street by accommodating localized north/south travel demand.

For this analysis, 2nd and 4th Streets are assumed to be two-way streets with one travel lane in each direction with turn pockets and signals at major intersections, but no bicycle or pedestrian improvements. 3rd Street is assumed to be narrowed to a 3-lane cross section. 2nd and 4th Streets are tied back into 3rd Street by two roundabouts north of Revere Avenue, and by a single roundabout south of Burnside Avenue. The model shows that this network is effective at spreading north-south traffic among the three streets: traffic moving between downtown and the corridor tends to use 2nd Street, traffic moving through the corridor tends to use 3rd Street, and traffic moving to and from points east (such as Greenwood Avenue) tends to use 4th Street.

LOS for Autos

The Expanded Grid with a three-lane 3rd Street functions better than the no-build scenario in terms of intersection operations. All signalized intersections on the three-street north-south corridor operate at LOS D or better, and all minor street approaches are at least LOS E on 2nd, 3rd, and 4th Streets. Intersection levels of service in the study area are shown in Figure 8.

LOS for Bicycles

This alternative included no bike lanes on 2nd Street or 4th Street, instead retaining the existing on-street parking and providing intersection control upgrades at key intersections. Bicycles would share the roadway with vehicles on those streets. The network concept, as analyzed, relies on new bike lanes on 3rd Street to provide north-south movement. As a result, 2nd and 4th Streets perform poorly for bicycles, mostly operating at LOS E. 3rd Street performs at LOS D, as the bike lanes assumed are just five feet wide and nestled between on-street parking and a heavily-used travel lane. Bicycle LOS throughout the study area is shown in Figure 9.

LOS for Pedestrians

Pedestrian level of service throughout all three facilities is generally good, with 3rd Street varying between LOS A and LOS B, and 2nd and 4th Streets mostly varying between LOS B and LOS C. The 3rd Street pedestrian environment benefits significantly from this scenario, with wider sidewalks, a planted buffer, and on-street parking and a bike lane providing additional buffer from traffic. Pedestrian facilities on 2nd and 4th Streets are assumed not to be improved compared to existing facilities. Pedestrian LOS through the study area is shown in Figure 10.

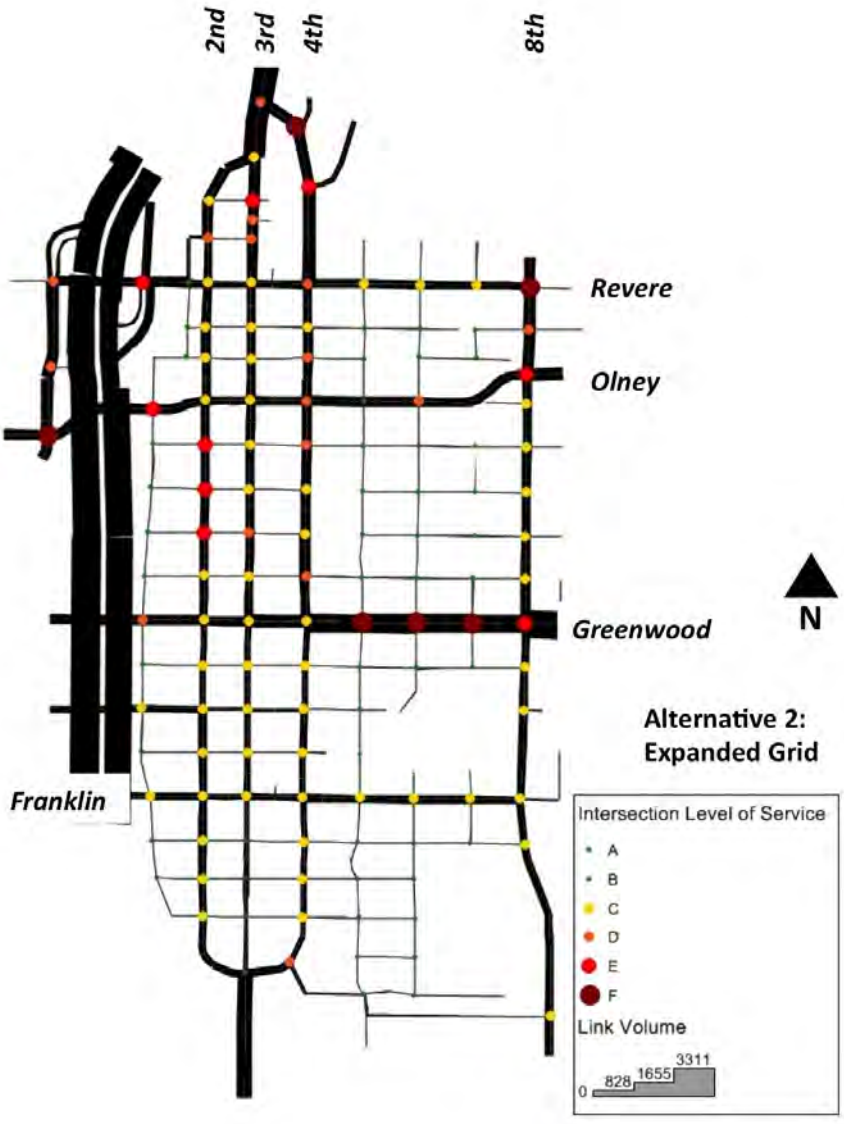


Figure 8: Alternative 2 Intersection LOS

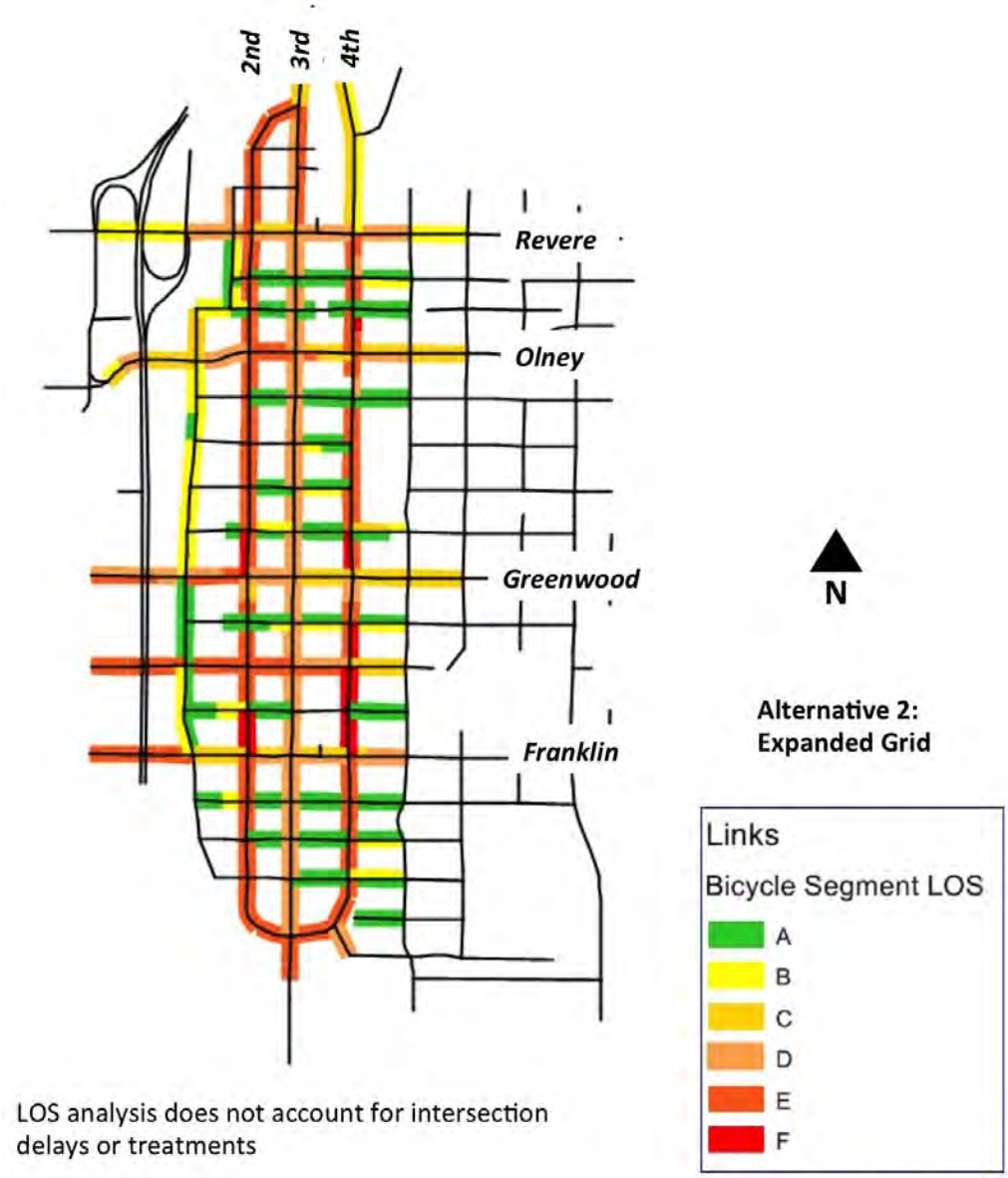


Figure 9: Alternative 2 Bicycle LOS

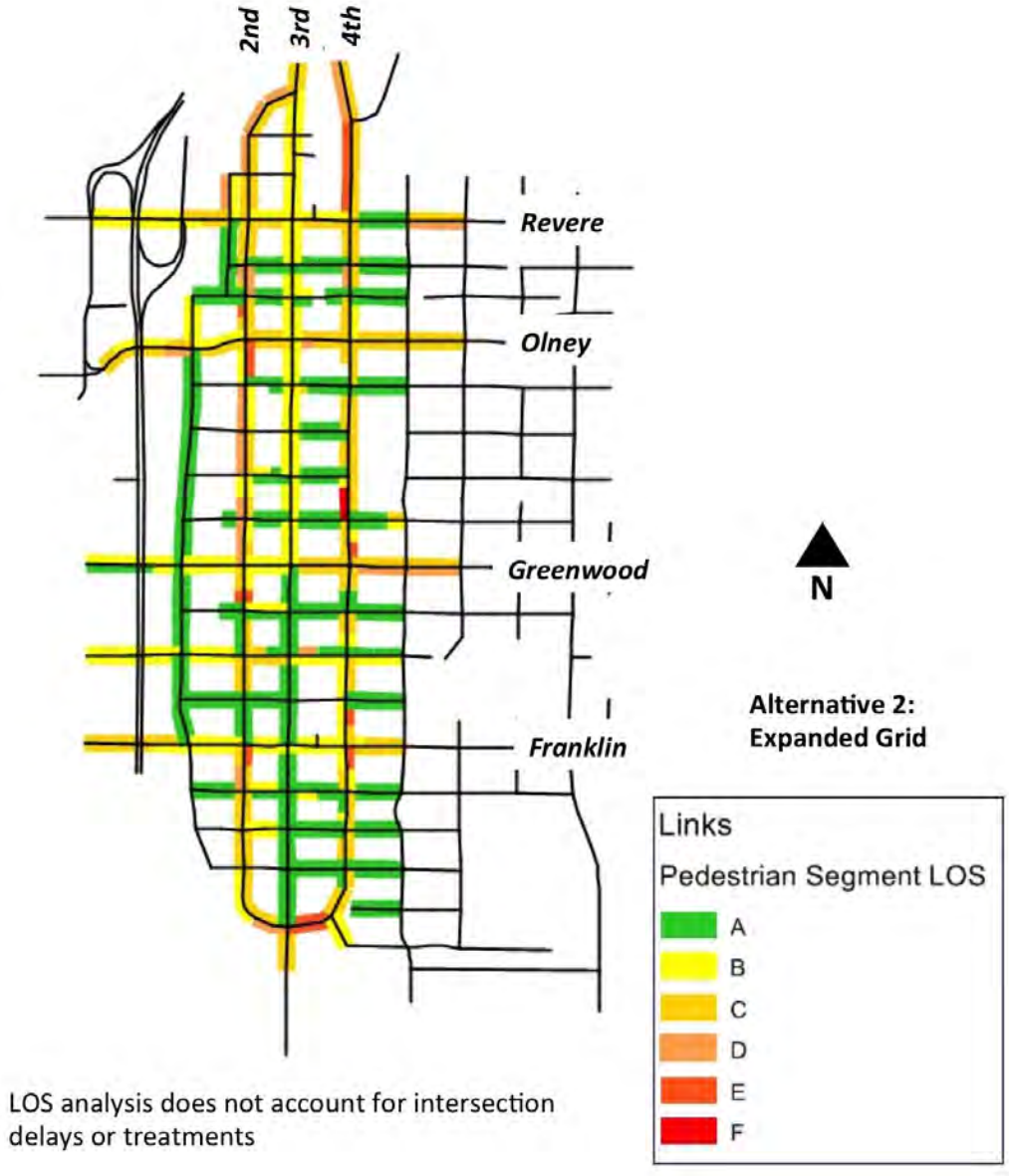


Figure 10: Alternative 2 Pedestrian LOS

2nd/ 4th Street Couplet with Enhancements (BCAP Option 3):

Option 3 would entail development of a one-way couplet system using 2nd Street for southbound traffic and 4th Street for northbound traffic, with each street carrying two lanes of traffic. Two-way traffic would be maintained on 3rd Street between the two legs of the couplet, but the existing cross-section could be narrowed to accommodate widened sidewalks, bicycle lanes, and potentially on-street parking. This analysis assumes that 3rd Street is narrowed to three lanes and provides all of these improved multi-modal accommodations. Also, the prevailing speed on 3rd Street is assumed to be 25 mph, as the 2nd/4th Street couplet would be designed to carry heavier traffic loads. Signals would be added at key intersections along 2nd and 4th Streets.

LOS for Autos

Motor vehicle operations are generally improved in this alternative compared to the no-build option. Signalized intersections on the three facilities operate at LOS D or better, with the exception of the new intersection where the 2nd/4th Street couplet joins back up with 3rd Street north of Revere Avenue, near NE Underwood. Some unsignalized approaches to 3rd and 4th Streets operate at LOS E. Note that this and other couplet network options will likely increase out-of-direction travel to and from land uses along the one-way streets. Intersection levels of service in the study area are shown in Figure 11.

LOS for Bicycles

Similar to the Expanded Grid (Alternative 2), the 2nd/4th Street Couplet includes no bike lanes on 2nd Street or 4th Street, relying instead on 3rd Street to provide the major north-south bike facility. 2nd and 4th Streets retain on-street parking on one side and widened sidewalks on both sides, also providing intersection control upgrades at key intersections. As with the Expanded Grid, 2nd and 4th Streets perform poorly for bicycles, mostly operating at LOS E. 3rd Street, at LOS B, performs better than it does in the Expanded Grid alternative, as traffic speeds and volumes are lower in the model. Bicycle LOS throughout the study area is shown in Figure 12.

LOS for Pedestrians

Pedestrian level of service throughout all three facilities is much improved compared to no-build conditions, with 3rd Street performing at LOS A or B, and 2nd and 4th Streets mostly varying between LOS B and LOS C. This pedestrian LOS performance is similar to that of the Expanded Grid, with slightly better conditions on 3rd Street due to lower vehicular traffic speeds and volumes. Pedestrian LOS through the study area is shown in Figure 13.

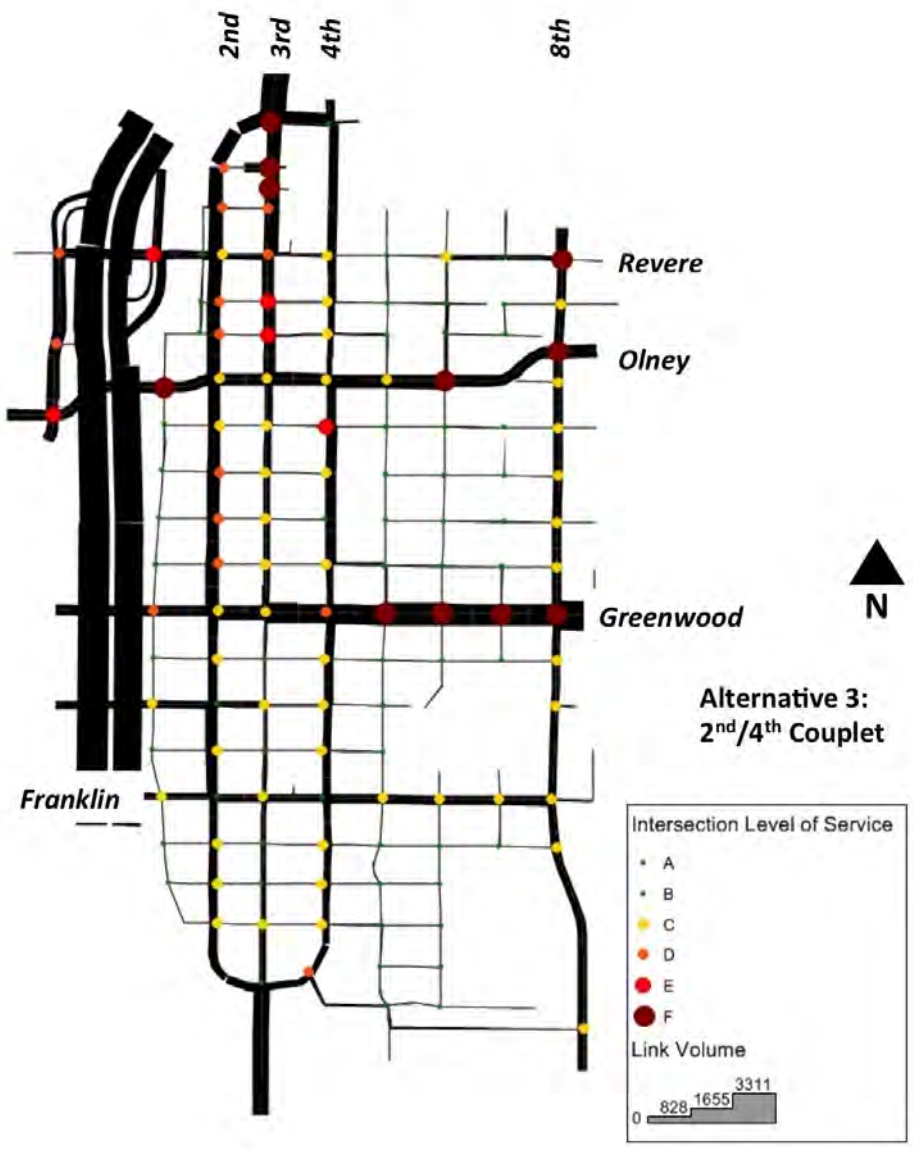


Figure 11: Alternative 3 Intersection LOS

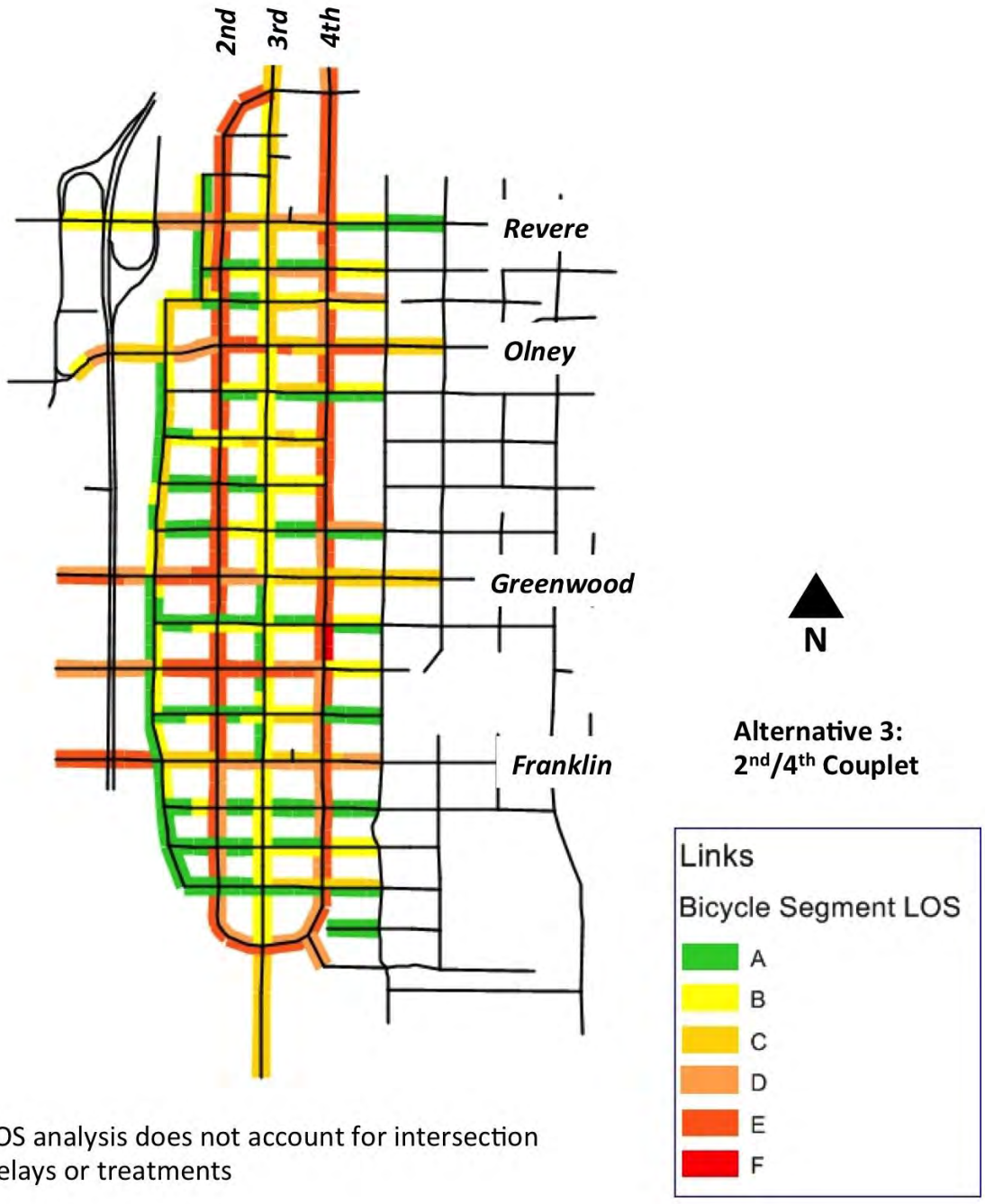


Figure 12: Alternative 3 Bicycle LOS

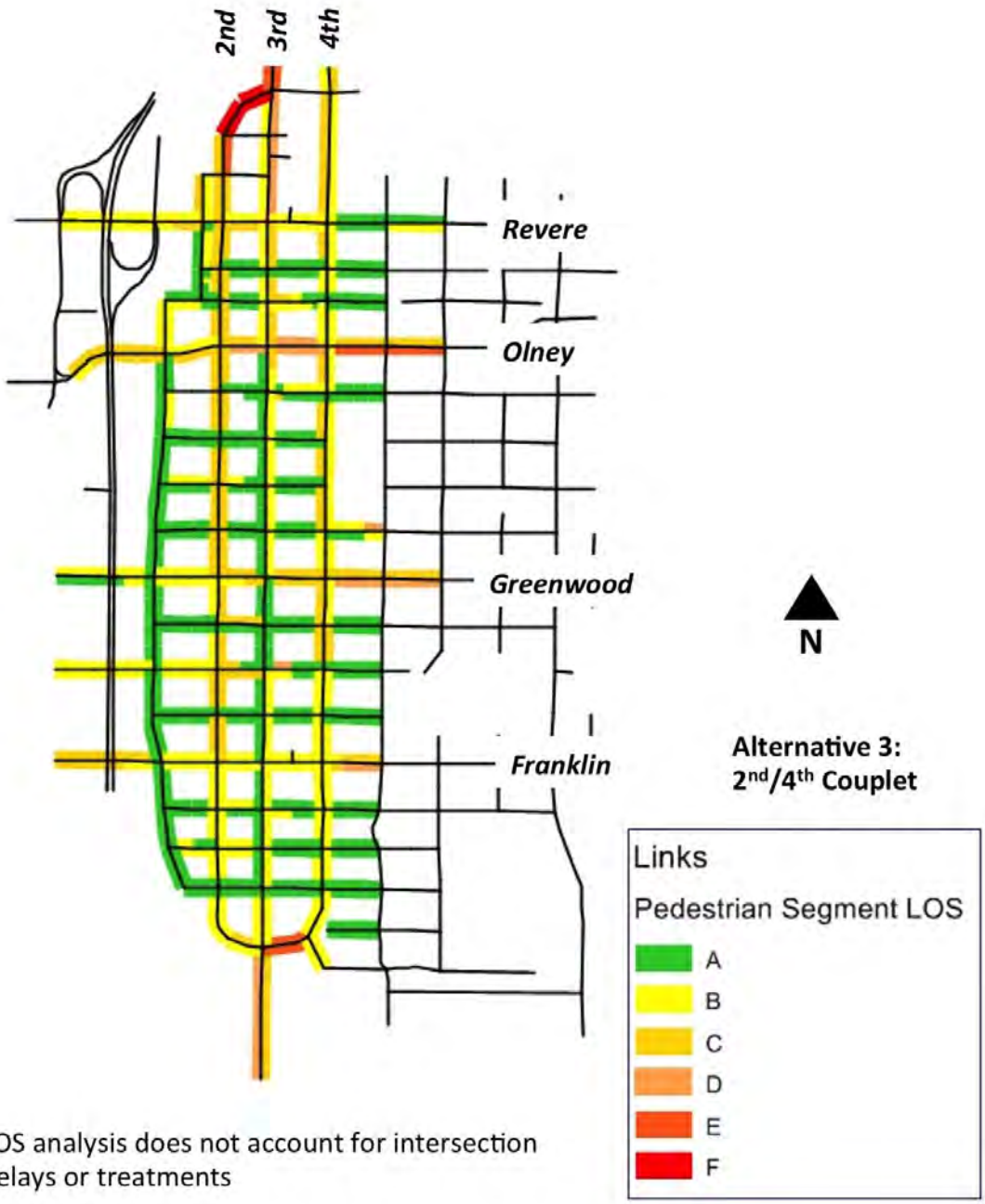


Figure 13: Alternative 3 Pedestrian LOS

3rd Street Boulevard (BCAP Option 4):

A fourth option involves the development of a boulevard along 3rd Street with an emphasis on widening sidewalks, adding enhanced streetscape, and adding bicycle lanes. North/south traffic movement would continue to use this facility with some minor widening and right-of-way acquisition to accommodate the bicycle lanes and sidewalks. Existing lane widths would be reduced to minimize the needed right-of-way. This option maintains similar corridor capacity to the no-build condition, but does add some capacity improvements in the form of turn lanes at intersections such as 3rd/Greenwood and 3rd/Franklin. For the analysis presented here, it is assumed that the street cross section is widened by about ten feet, and travel lanes narrowed, to accommodate new streetscape and bike lanes.

LOS for Autos

While the 3rd Street Boulevard network leaves 2nd and 4th Streets unchanged and offers the same number of travel lanes on 3rd Street, operations at signalized intersections are generally improved over the no-build option. The intersections at 3rd/Revere and 3rd/Olney operate at LOS D, similar to no-build, and the intersections at 3rd/Greenwood and 3rd/Franklin improve to LOS C. This improvement is based on some widening at the intersection with new right turn pockets on some approaches. However, the 3rd Street Boulevard option features high delay for side street movements at unsignalized intersections along 3rd Street and Greenwood Avenue, similar to the no-build scenario. Intersection levels of service in the study area are shown in Figure 14.

LOS for Bicycles

Under the 3rd Street Boulevard alternative, north-south bike lanes are provided, resulting in a significantly improved LOS of B. 2nd and 4th Streets mostly perform between Bike LOS A and C, but again note that the analysis is provided on a segment level, and does not account for delay and comfort of people riding bikes across busy streets while traveling on low-traffic streets. A plot showing bicycle LOS performance is shown in Figure 15

LOS for Pedestrians

Pedestrian level of service on a 3rd Street boulevard is generally LOS C throughout, while LOS is generally A on 2nd and 4th Streets. As with the bicycle LOS, this analysis was done on a segment basis, and does not consider the delay, comfort, or safety of pedestrians crossing at busy arterials such as Greenwood Avenue. Pedestrian LOS under the Boulevard alternative does not vary significantly from the no-build condition, as the cross-section change provides minimal sidewalk enhancement and no on-street parking to provide a buffer from traffic. Pedestrian LOS through the study area is shown in Figure 16.

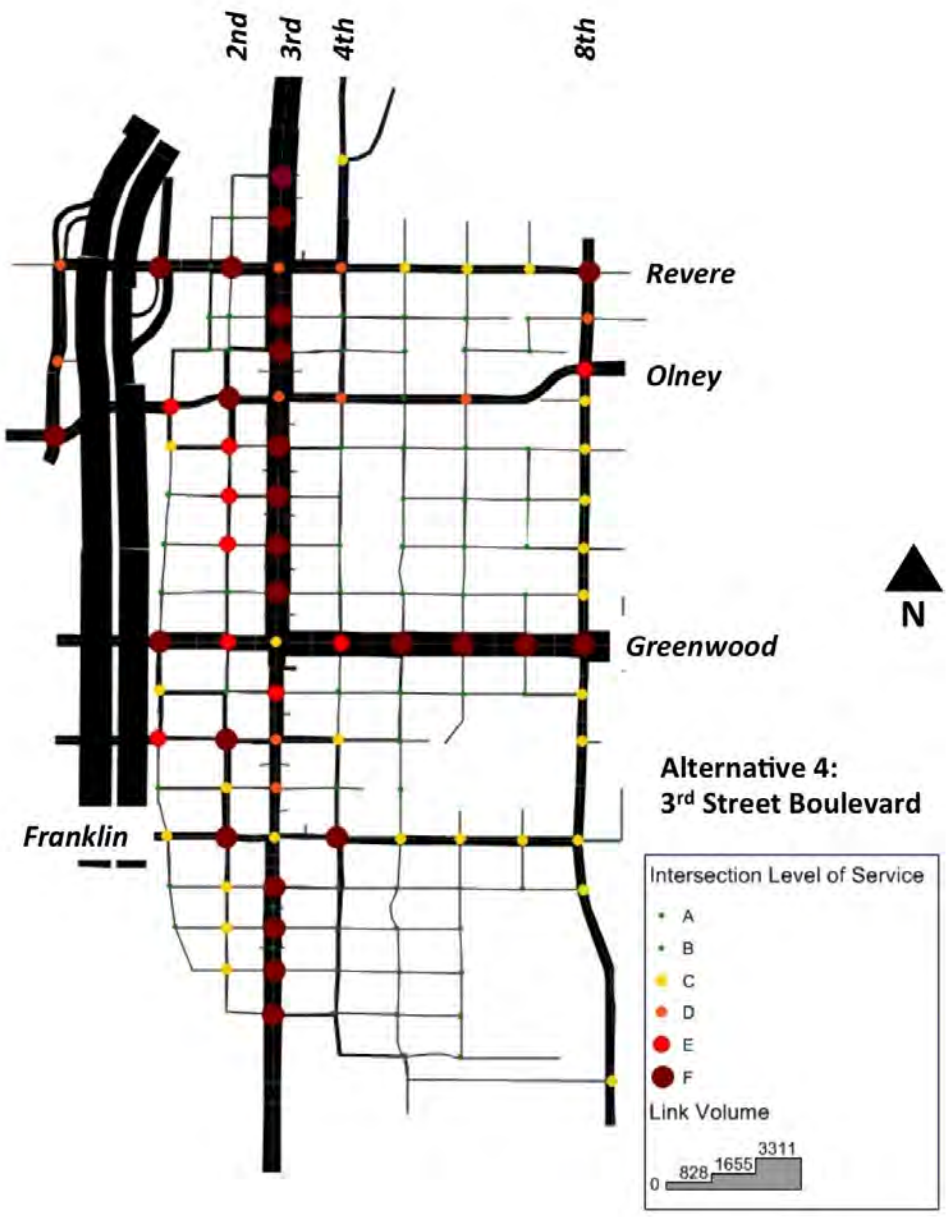


Figure 14: Alternative 4 Intersection LOS

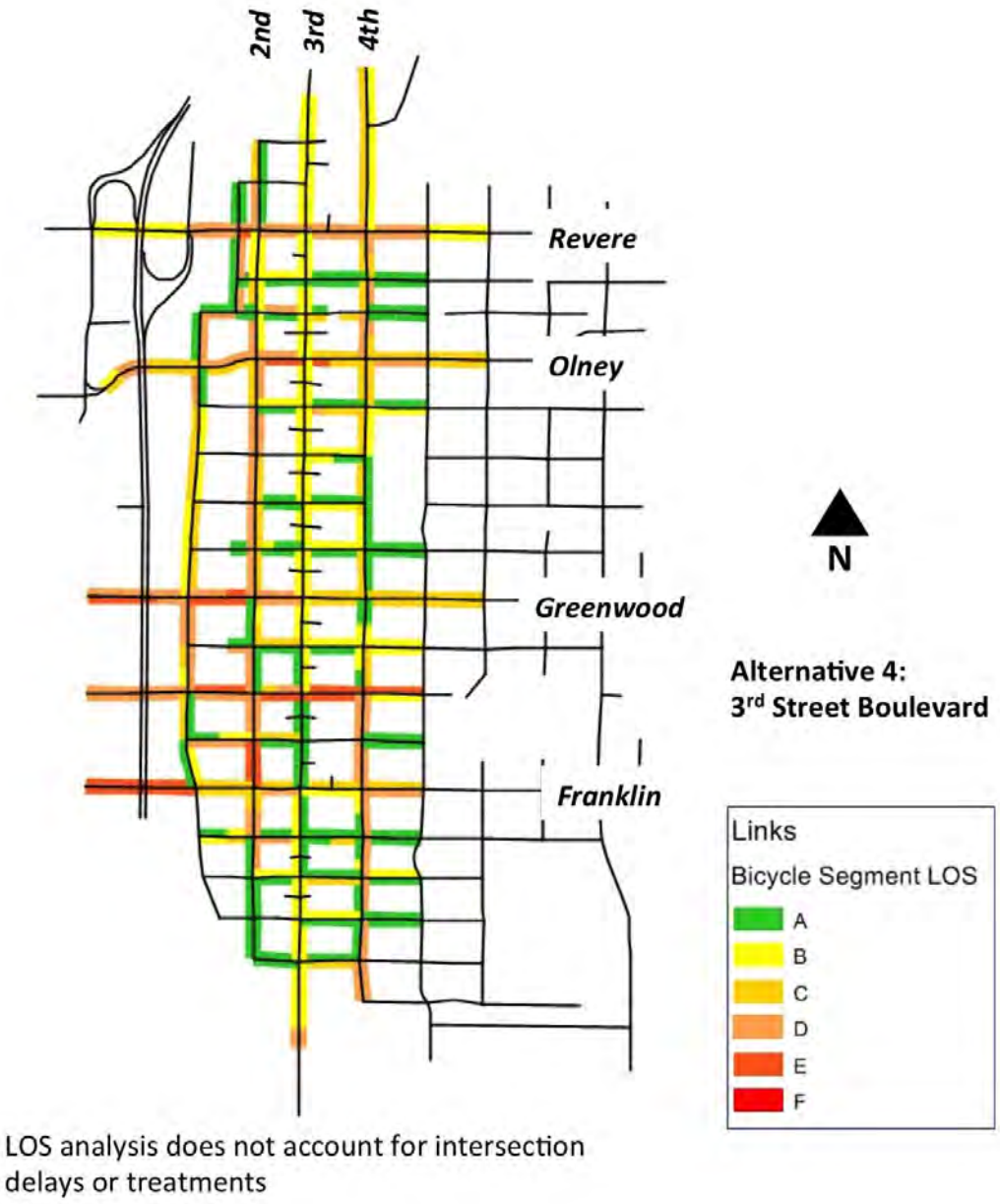


Figure 15: Alternative 4 Bicycle LOS

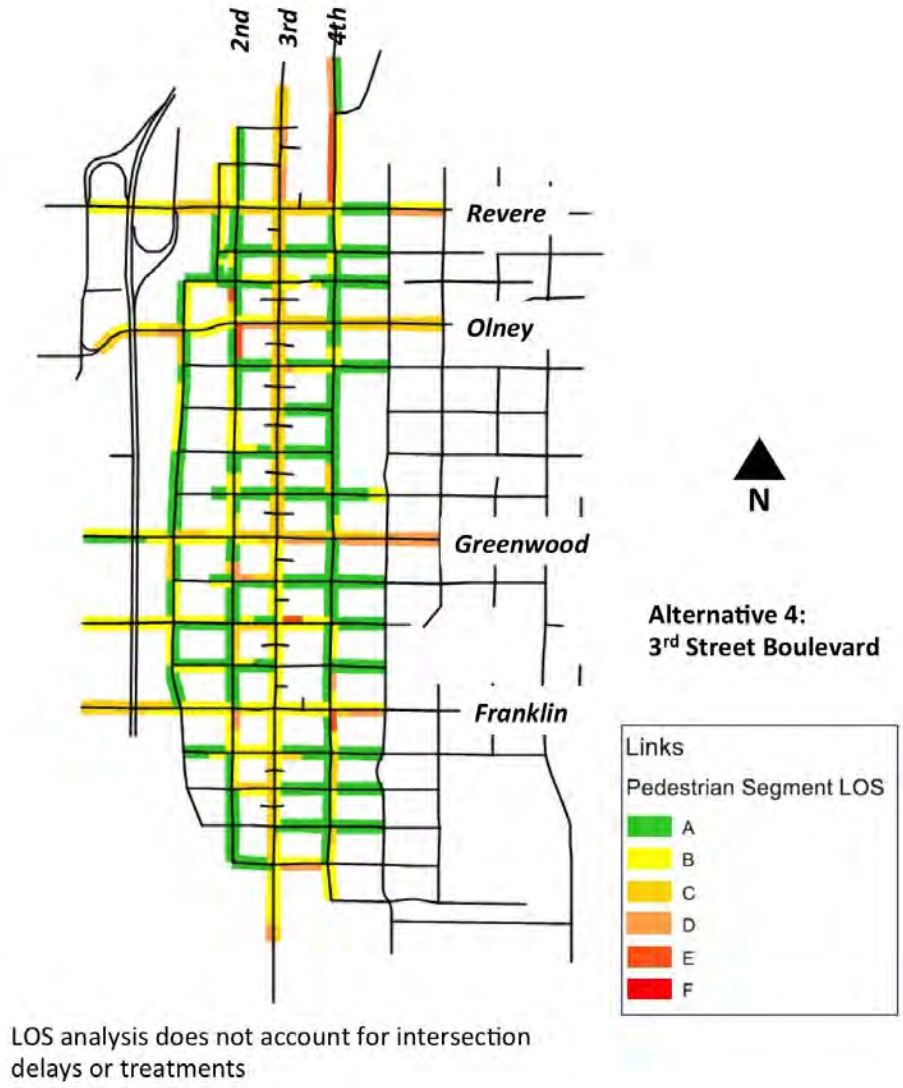


Figure 16: Alternative 4 Pedestrian LOS

Appendix E

Bicycle/Pedestrian/Transit Maps from Bend MMA Technical Memorandum #5

Figure 19 Street and Intersection Treatments Identified for Central Area – General

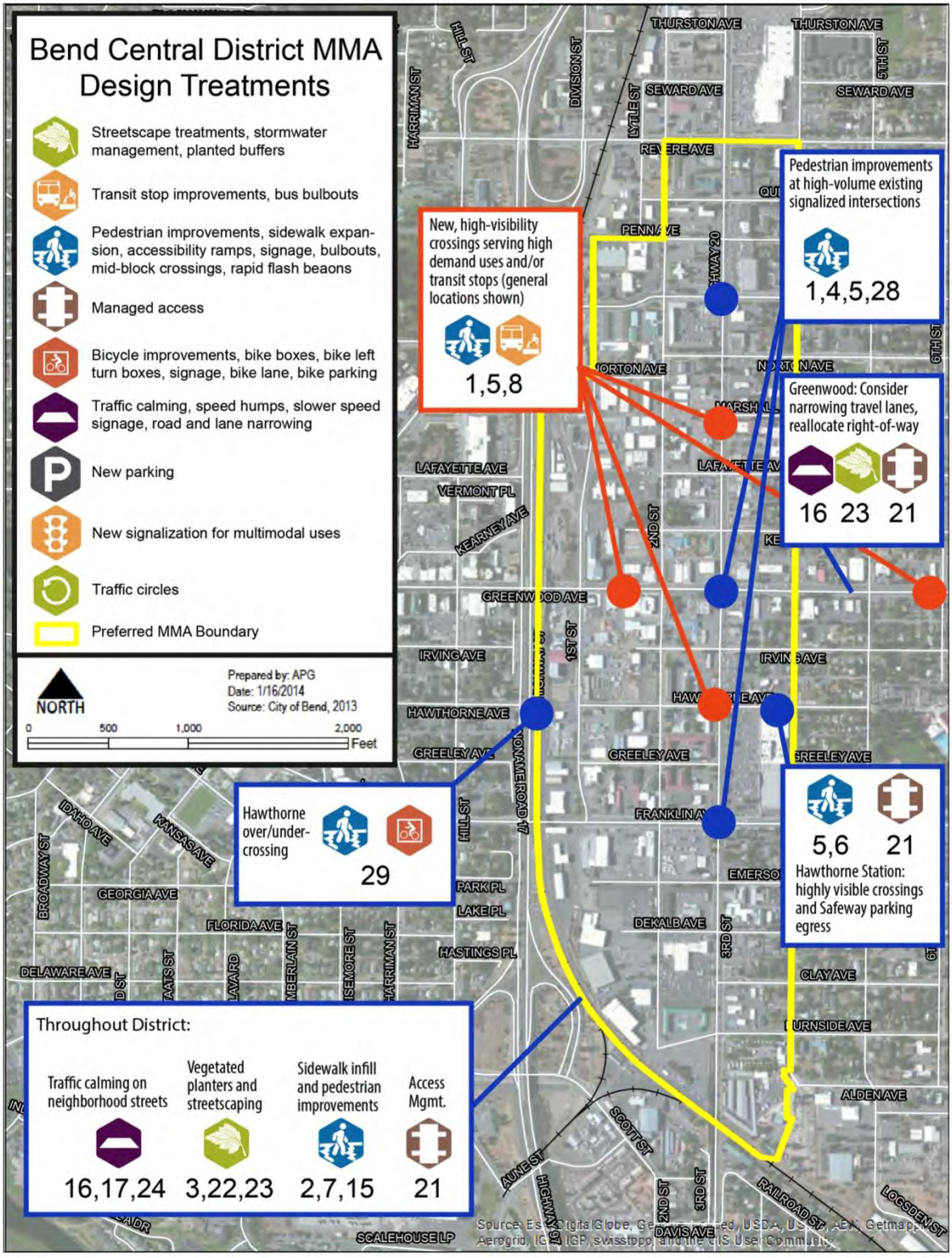


Figure 20 Street and Intersection Treatments Identified for Central Area – Alternative 1

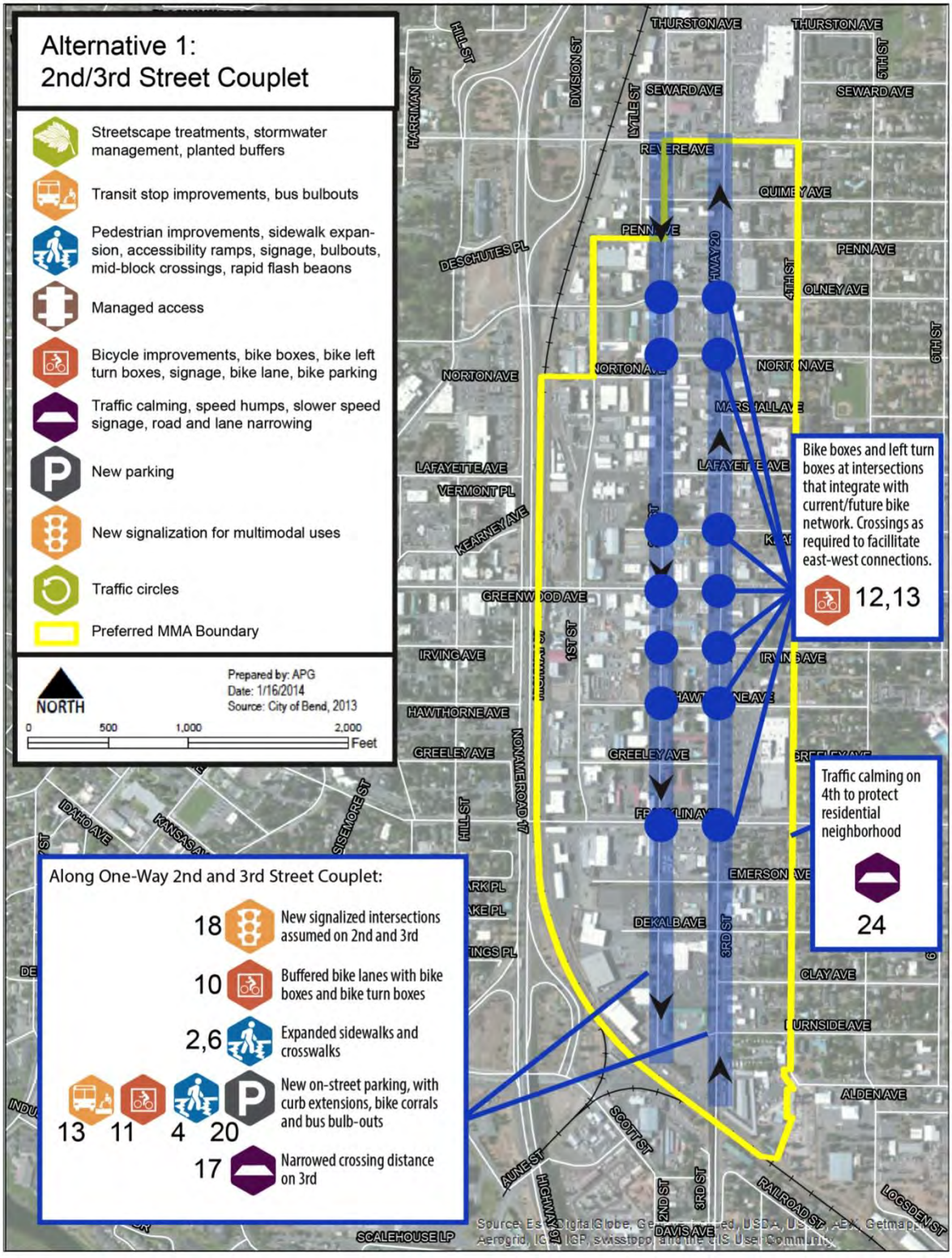


Figure 21 Street and Intersection Treatments Identified for Central Area – Alternative 2

Figure 22 Street and Intersection Treatments Identified for Central Area – Alternative 3

Figure 23 Street and Intersection Treatments Identified for Central Area – Alternative 4