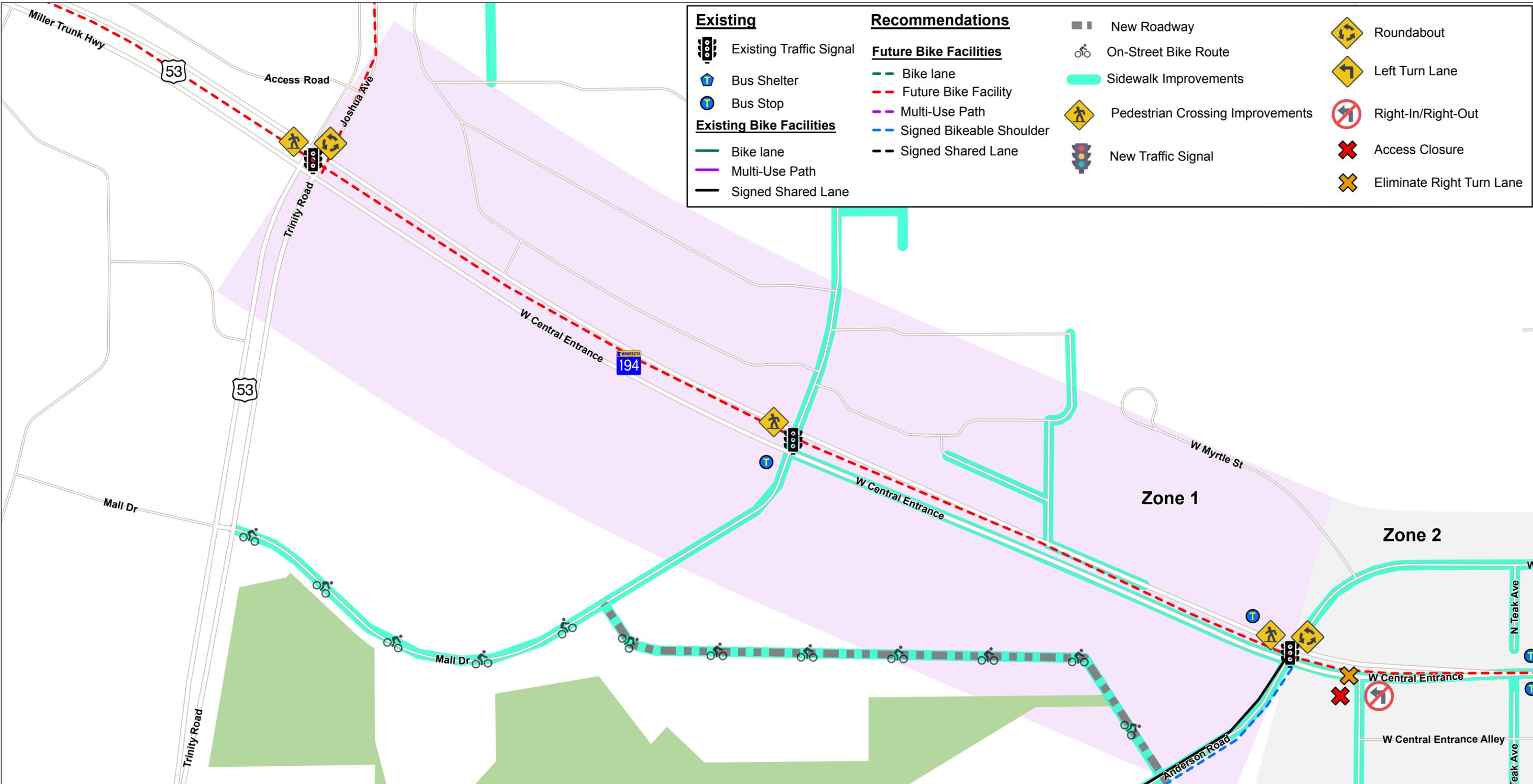




## Appendix B - Review of Existing Plans and Studies

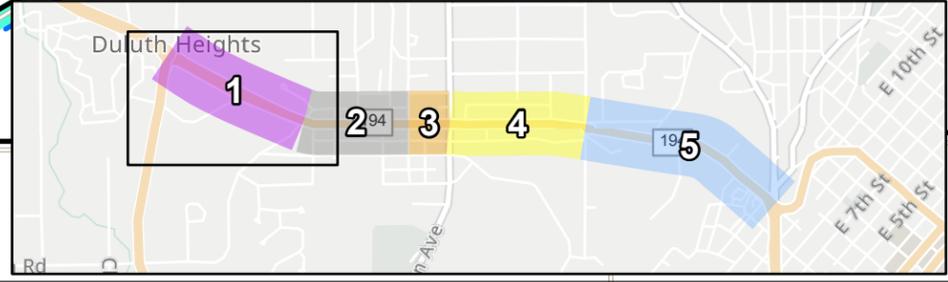
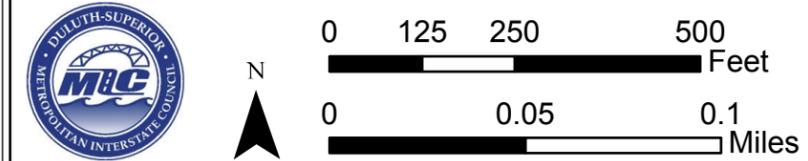


Existing		Recommendations	
	Existing Traffic Signal		New Roadway
	Bus Shelter		On-Street Bike Route
	Bus Stop		Sidewalk Improvements
<b>Existing Bike Facilities</b>			Pedestrian Crossing Improvements
	Bike lane		New Traffic Signal
	Multi-Use Path		Roundabout
	Signed Shared Lane		Left Turn Lane
			Right-In/Right-Out
			Access Closure
			Eliminate Right Turn Lane
			Future Bike Facility
			Multi-Use Path
			Signed Bikeable Shoulder
			Signed Shared Lane

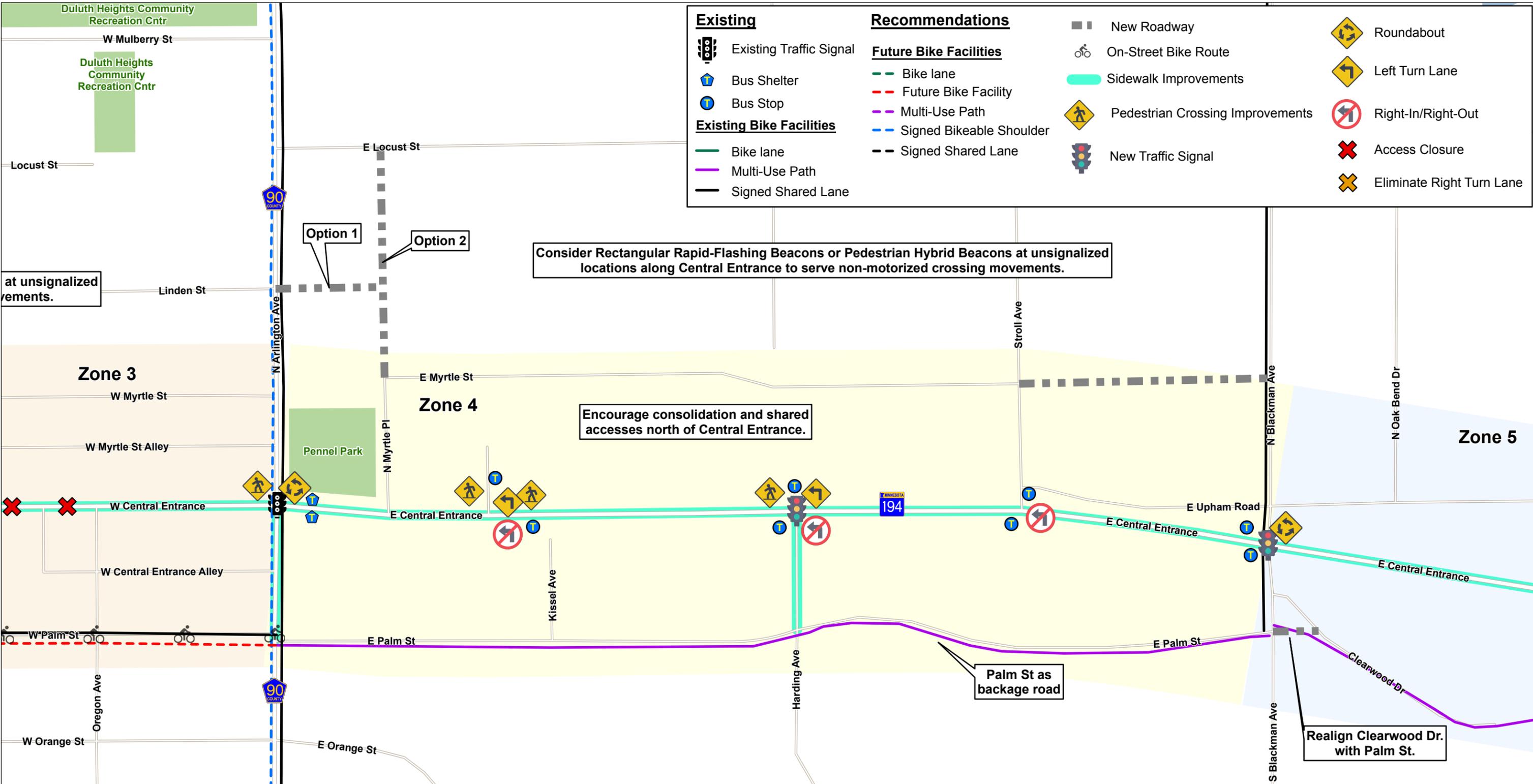
**Recommendations from Previous Plans and Studies**  
**Central Entrance Corridor**  
 Zone 1: Trinity Road to Anderson Road

**Notes**  
 -Recommendations shown are drawn from the following plans and studies: Central Entrance Corridor Study (MIC), Metropolitan Bikeways Plan (MIC), Central Entrance-Miller Hill Small Area Plan (City of Duluth), MnDOT ADA Group - Central Entrance Report, MnDOT Pedestrian and Bicycle Recommendations Report

-This map does not depict all recommendations included in the plans and studies referenced above. See plan documents for additional details, corridor-wide recommendations, and recommended cross-sections.







Existing		Recommendations	
	Existing Traffic Signal		New Roadway
	Bus Shelter		On-Street Bike Route
	Bus Stop		Sidewalk Improvements
<b>Existing Bike Facilities</b>			Pedestrian Crossing Improvements
	Bike lane		New Traffic Signal
	Multi-Use Path		Roundabout
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			Right-In/Right-Out
			Access Closure
			Eliminate Right Turn Lane
			Future Bike Facility
			Multi-Use Path
			Signed Bikeable Shoulder
			Signed Shared Lane

Consider Rectangular Rapid-Flashing Beacons or Pedestrian Hybrid Beacons at unsignalized locations along Central Entrance to serve non-motorized crossing movements.

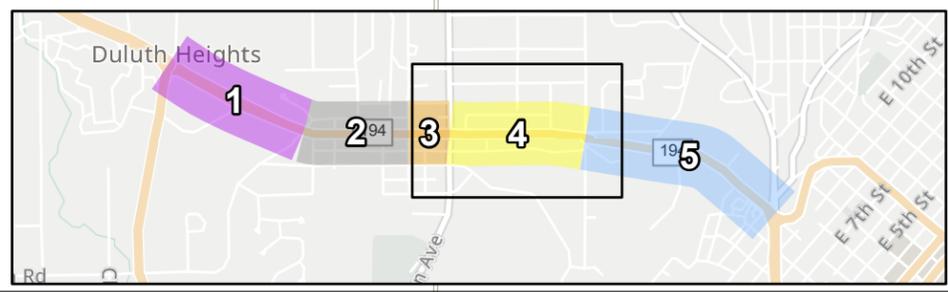
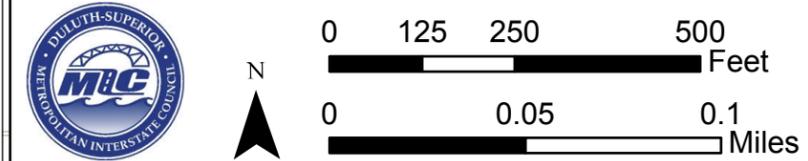
Encourage consolidation and shared accesses north of Central Entrance.

Palm St as backage road

Realign Clearwood Dr. with Palm St.

**Recommendations from Previous Plans and Studies**  
**Central Entrance Corridor**  
 Zone 4: Arlington Avenue/CSAH 90 to Blackman Avenue

**Notes**  
 -Recommendations shown are drawn from the following plans and studies: Central Entrance Corridor Study (MIC), Metropolitan Bikeways Plan (MIC), Central Entrance-Miller Hill Small Area Plan (City of Duluth), MnDOT ADA Group - Central Entrance Report, MnDOT Pedestrian and Bicycle Recommendations Report  
 -This map does not depict all recommendations included in the plans and studies referenced above. See plan documents for additional details, corridor-wide recommendations, and recommended cross-sections.





Central Entrance Existing Plans Matrix - Overview

#	Title	Year	Lead Agency	Membership /Stakeholders	Engagement Efforts	Key Goals/Objectives/Vision	Key Recommendations/Outcomes	Themes			
								Access Mgmt.	Bike/Ped	Transit	Streetscape
1	MIC Long Range Transportation Plan - Sustainable Choices 2045	2019	Metropolitan Interstate Council	MIC Policy Board, TAC, MIC Staff	Direct consultation with jurisdictions, outreach to identified stakeholders, online public engagement through website and survey, pop-ups at community events.	<p><b>Vision:</b> Develop a community-supported multimodal transportation system that not only supports the diverse needs of people and commerce, but is also fiscally, socially, and environmentally sustainable over time.</p> <p><b>Goals:</b></p> <ol style="list-style-type: none"> <li>Promote public health and energy conservation, and protect and enhance the environment through responsible Duluth-Superior area transportation system policies and design.</li> <li>Ensure the Duluth-Superior area transportation system supports the development and maintenance of a safe, healthy, and connected community that provides opportunities and choices for people of all ages, incomes, and abilities.</li> <li>Ensure the safety and security of the Duluth-Superior area transportation system for all users and modes, including being prepared to handle emergencies and disasters.</li> <li>Ensure the Duluth-Superior area transportation system is an integrated multimodal network that supports people and goods getting to where they need to go in an efficient manner.</li> <li>Develop and maintain the Duluth-Superior area transportation system to support economic productivity and competitiveness, including tourism.</li> </ol>	<ul style="list-style-type: none"> <li>Vision, goals, and objectives</li> <li>Key questions for policies, decisions, and projects.                             <ul style="list-style-type: none"> <li>Is this policy, project, or decision fiscally sustainable?</li> <li>How does this policy, project, or decision help promote social sustainability?</li> <li>How does this policy, project, or decision help promote environmental sustainability?</li> </ul> </li> <li>Key Takeaways (Chapter 3).</li> </ul>		x	x	
2	Metropolitan Bikeways Plan	2019	Metropolitan Interstate Council	MIC	No standalone engagement identified.	<p><b>Vision:</b> The Duluth-Superior Metropolitan Area is a great place for people to bicycle all year, whether for a trip to the grocery store or a ride along the trail to get to school or work. This can be seen in the numbers of people who are out and about on a bike, regardless of the season. Many days see multitudes of people using bike facilities going to work or school on a weekday morning, or enjoying a family trip on a weekend, taking in a major event or just heading over to a friend’s house.</p> <p><b>Bicycle Network Framework:</b></p> <ol style="list-style-type: none"> <li>All Ages &amp; Abilities: For people who have the physical ability to ride a bicycle, regardless of this level of skill.</li> <li>Everyday Routine: For people traveling for their everyday routine activities—daily trips including commute to work, school, grocery store, shopping, visiting family or friends etc.</li> <li>Shorter Distances: For people traveling shorter distances—focus on trips less than 3 miles. The distance that most people will shift modes from a bicycle to a motor vehicle are for distances greater than 3 miles. In addition, the majority of all trips people make regardless of mode is less than 3 miles in distance each way.</li> </ol>	<ul style="list-style-type: none"> <li>Bikeways Route Planning - Decision-making Criteria</li> <li>Top priorities and existing key gaps                             <ul style="list-style-type: none"> <li>Top Priority: Central Entrance path extension to the Hillside and to the Miller Hill Mall.</li> <li>Key Gap: Central Entrance Bike Path from Harbor Highlands to Hillside Neighborhood.</li> </ul> </li> <li>Portions of Central Entrance identified as study route or study corridor.                             <ul style="list-style-type: none"> <li>Study Corridor: an area where a bike route should be developed, but the exact alignment, including a vetting of the routing alternatives should be further studied.</li> <li>Study Route: a route alignment to depict the bike route connection being made, but not necessarily the exact route.</li> </ul> </li> </ul>		x	x	x

#	Title	Year	Lead Agency	Membership /Stakeholders	Engagement Efforts	Key Goals/Objectives/Vision	Key Recommendations/Outcomes	Themes			
								Access Mgmt.	Bike/Ped	Transit	Streetscape
3	Central Entrance Corridor Study	2012	Metropolitan Interstate Council	MIC	Online survey, public meeting	<p><b>Purpose:</b> Identify a transportation system that will complement the land use vision outlined in the City of Duluth’s Central Entrance - Miller Hill Small Area Plan (2009).</p> <p><b>Goals of the “Roadway” Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Reduce vehicle conflict points and ensure efficient traffic flow by controlling specific left turn movements.</li> <li>• Provide safer access to local businesses and preserve vehicle capacity in the corridor.</li> <li>• Enhance the local street system.</li> </ul> <p><b>Goals of the “Non-motorized” Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Improve access and mobility for non-motorized users along and across the Central Entrance corridor.</li> <li>• Make the corridor safer and more comfortable for non-motorized users.</li> <li>• Eliminate gaps in the sidewalk and bikeways networks.</li> </ul> <p><b>Goals of the “Corridor-wide” Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Maintain safe and efficient mobility along the corridor.</li> <li>• Create a comfortable, more attractive corridor.</li> <li>• Improve the attractiveness of the corridor for local businesses.</li> <li>• Help identify Duluth Heights as a distinct neighborhood.</li> </ul>	Specific recommendations across three categories: <ul style="list-style-type: none"> <li>• Roadway</li> <li>• Non-motorized</li> <li>• Corridor-wide</li> </ul>	x	x		x
4	City of Duluth Comprehensive Plan - Imagine Duluth 2035: Forward Together	2016	City of Duluth	Vision Committee	Community survey, community kickoff event, Vision Committee, 15 focus groups, Health in All Policies campaign, 9 youth focus groups, Marshall School student survey, district public meetings, social engagement sessions (2 online), Canal Park stakeholder workshops	<p><b>Transportation Mission:</b> Duluth’s transportation system will connect all users in a way that promotes safety, health, and quality of life.</p> <p><b>Transportation Policies:</b></p> <p>Policy #1 – Improve street conditions to function better for everyone</p> <p>Policy #2 – Reduce infrastructure costs through innovation and wholesale design change</p> <p>Policy #3 – Add to the transportation network by systematically enhancing multi-modal options</p> <p>Policy #4 – Improve system condition and connections in and between downtown and Canal Park</p> <p>Policy #5 – Base decisions about transportation infrastructure primarily in the context of improving city and neighborhood vitality, and not solely on automobile through-put</p> <p>Policy #6 – Protect and enhance regional transportation networks, especially for purposes of expanding opportunities for movement of freight</p>	<ul style="list-style-type: none"> <li>• Transportation policies and strategies</li> <li>• List of specific projects, including: <ul style="list-style-type: none"> <li>○ Reconditioning and reconstruction of streets used for transit lines, bike routes, or with high traffic volumes that have a Pavement Quality Index lower than 70.</li> <li>○ Sidewalk improvements to bring all sidewalks within ¼ mile of a transit stop to “fair” or “good” condition.</li> <li>○ Implementation of the ADA Transition Plan, including pedestrian improvements in the mall area.</li> <li>○ Install bumpouts, crosswalks, and other pedestrian crossing improvements where called for in Safe Routes to School plans and Core Investment Areas.</li> </ul> </li> </ul>	x	x	x	x

#	Title	Year	Lead Agency	Membership /Stakeholders	Engagement Efforts	Key Goals/Objectives/Vision	Key Recommendations/Outcomes	Themes			
								Access Mgmt.	Bike/Ped	Transit	Streetscape
5	Central Entrance-Miller Hill Small Area Plan	2009	City of Duluth	14 -member Plan Committee: 1 – Planning Commission member 1 – City Councilor 4 – Business owners 2 – Residents 2 – Property owners 1 – Chamber of Commerce staff rep. 1 – Environmental rep. 2 – Transportation reps. (MIC and MnDOT)	No standalone engagement identified.	<b>Vision Statement:</b> Through good land use planning, reasonable transportation solutions, place-making and business district organization, the Central Entrance business district will regain its focus as the “main street” for the Duluth Heights neighborhood and the Miller Hill business district will strengthen its core function as a regional retail destination.  <b>Plan Objectives:</b> 1. To guide new development opportunities that compliment existing development while minimizing potential negative impacts to surrounding residential neighborhoods. 2. To encourage the continued viability of the Miller Hill business district as a regional retail destination. 3. To determine the commercial function of the Central Entrance business district and plan for its future. 4. To improve and enhance the natural environment. 5. To provide safe and convenient non-motorized transportation options throughout the study area. 6. To enhance the appearance of the area.	Identified 16 specific transportation recommendations categorized by plan objectives 2-6.	x	x	x	x
6	Miller Hill Corridor Plan	1979	City of Duluth	Miller Hill Corridor Plan Committee (made up of planning commission members)	Public meetings, including participation by the Duluth Heights and Piedmont Heights community clubs, business interests, residents, and representatives of various environmental organizations.	<b>Goals:</b> 1. Future development and improvements should be directed towards making the plan area attractive for residential uses. 2. The viability of existing commercial and light industrial developments within the plan area should be maintained. 3. The irreversible alteration of critical natural resources within the plan area should be prevented. 4. A pattern of land use which does not necessitate excessive expenditures should be encouraged. 5. Property within the plan area should be protected from flood damage. 6. Improvements within the plan area should reduce traffic congestion and increase traffic safety.  <b>Policies:</b> 1. No major highway corridor relocation for Hwy 53 or Central Entrance to avoid adverse effects on Duluth Heights neighborhood. 2. Excessive curb cuts for individual businesses should be discouraged. Instead provide access via frontage roads. 3. Bus routes should be located on collector and arterial streets and not on local streets.	<b>Other Recommendations (some outside current study area):</b> 1. Development of a minor arterial or collector street along the alignment of Joshua Ave from Hwy 53 to Arrowhead Rd. Joshua Avenue should not be developed until the potential for the future connection of it to Rice Lake Road is carefully considered as such a connection could place a significant amount of additional traffic onto Trinity Road. 2. MnDOT' s plans for a fifth lane on Central Entrance should include some related access limitations. The elimination and relocation of some curb cuts should be accomplished as part of the negotiations to acquire additional right-of-way. Some properties on Central Entrance should be designated to allow entrance only, with egress provided onto the proposed rear access road. 3. In order to better service the Miller Hill Mall commercial area, the extension of Burning Tree Road from Highway #53 to Decker Road is proposed. 4. Internal collector driveway on the Miller Hill Mall site defined by curbed, landscaped islands. 5. Improvements along Central Entrance and Highway #53 should be made to increase pedestrian safety, including signalized crosswalks and sidewalks.	x	x	x	x

#	Title	Year	Lead Agency	Membership /Stakeholders	Engagement Efforts	Key Goals/Objectives/Vision	Key Recommendations/Outcomes	Themes			
								Access Mgmt.	Bike/Ped	Transit	Streetscape
7	Comprehensive Operations Analysis	Pending	Duluth Transit Authority	DTA, Technical Advisory Group (TAG, members not listed)	Community survey (ongoing), stakeholder meetings	<b>From study website:</b> The Better Bus Blueprint is a full review of the DTA fixed-route bus operations. The study aims to develop recommendations to change the way Twin Ports residents use transit in the region to better meet the community's needs. ( <a href="https://www.duluthtransit.com/home/better-dta/better-bus-blueprint/">https://www.duluthtransit.com/home/better-dta/better-bus-blueprint/</a> )	<b>Findings from Existing Conditions Summary (Feb. 2021):</b> <ul style="list-style-type: none"> <li>Miller Hill Mall is one of the areas with the highest transit propensity index</li> <li>Key regional travel patterns for all trips mirror the findings for transit with highest attraction to/from Downtown Duluth, University of Minnesota-Duluth, Miller Hill Mall, West Duluth, and Superior (five key activity centers identified)</li> <li>Areas around each key activity center encompass over 65% of the DTA's daily weekday ridership and over 50% of the study area jobs.</li> <li>Fast and frequent service to/from activity centers may be vital as only 25% of the study area population lives in these areas and will access the system from other locations, leading to added travel times.</li> <li>Service between activity centers is inconsistent depending on time of day, leading to longer travel times and limited access.</li> </ul>			x	
8	Transit Development Plan	2017	Duluth Transit Authority	DTA, STRIDE, Policy Advisory Committee (DTA staff and board members, MnDOT, consultant team), Technical Advisory Committee (MnDOT, County, Cities of Duluth, Superior, Hermantown, Proctor, MIC, University of Minnesota - Duluth)	Stakeholder workshops, public input meetings, pop up meetings, general community survey, demand response (STRIDE) rider survey, employer survey.	<b>Mission:</b> The Mission of the DTA shall be to provide public transit service that is safe, convenient, efficient and affordable. The following goals set standards towards accomplishing this mission: <b>Goal 1:</b> Increase transit use in the Duluth area by providing high quality transit service. <b>Goal 2:</b> Provide safe, clean and reliable transit service and infrastructure to all current and potential DTA riders. <b>Goal 3:</b> Provide efficient and sustainable transit service. <b>Goal 4:</b> Improve customer information and marketing strategies to increase ridership and customer satisfaction.	<ul style="list-style-type: none"> <li>Central Entrance is a high ridership corridor. <ul style="list-style-type: none"> <li>The three routes with the most weekday ridership include Route 10 (Duluth Heights Mall)</li> <li>The routes with the highest Saturday and Sunday ridership include Route 10H (Duluth Heights Mall via 6AE)</li> </ul> </li> </ul> <b>Short Term Service Plan:</b> <b>Phase 1: Years 1 and 2 (FY 2017-2018) – Implementation of 2-Year Pilot Program of Routes</b> <ul style="list-style-type: none"> <li>Route 5 Extension</li> <li>New Route 21</li> <li>Additional Saturday service on Route 10</li> </ul> <b>Phase 2: Years 3 and 4 (FY 2019-2020) – Frequency and Efficiency</b> <ul style="list-style-type: none"> <li>Discontinue Route 10E</li> <li>Route 10 Routing Changes</li> <li>Route 21 Routing Changes</li> <li>High frequency network (includes Route 10)</li> <li>Additional service recommendations</li> </ul> <b>Phase 3: Year 5 (FY 2021) – High Capacity Options and Regional Connectivity</b> <ul style="list-style-type: none"> <li>Various technology and service improvements</li> </ul>			x	
9	MnDOT ADA Group - Central Entrance Report	2021	MnDOT	MnDOT ADA Staff	NA	<b>Purpose:</b> Identify existing ADA issues in the corridor.	1) Take preconstruction photos of all in-place curb ramps and adjacent lawns, buildings, parking lots, etc. to document their condition in the project file.	x	x	x	x

#	Title	Year	Lead Agency	Membership /Stakeholders	Engagement Efforts	Key Goals/Objectives/Vision	Key Recommendations/Outcomes	Themes			
								Access Mgmt.	Bike/Ped	Transit	Streetscape
							<p>2) Review the corridor/project after a rain event to determine if there is any ponding in front of curb ramp locations. Gutter profile changes should be made to address ponding in the PAR.</p> <p>3) Make additional field visits to verify that designs will work in the field.</p> <p>4) Meet with property owners to discuss potential impacts of ADA construction work.</p> <p>5) If a crosswalk location or pedestrian curb ramp location is recommended to be changed or removed, consultation with District Traffic Unit is needed.</p> <p>6) If a sidewalk, curb ramp, or related design needs to be changed after the recommendations are finalized by the District and the ADA unit or after an ADA plan review, please inform the ADA unit prior to the next ADA review.</p>				
10	Pedestrian and Bicycle Recommendations Report	2020	MnDOT	MnDOT	NA	<p><b>Purpose:</b> Provide non-motorized transportation improvement recommendations to be scoped and included with the project. These recommendations are based on observations made by MnDOT’s Bicycle &amp; Pedestrian Safety Engineer and other staff during a project field walk, along with project background and other information about the area that has been collected and reviewed. The recommendations are for scoping purposes and all concepts are intended to be discussed with the City, and used to facilitate discussion with all stakeholders.</p> <p><b>Project Needs:</b></p> <ol style="list-style-type: none"> <li>1. Network Connectivity</li> <li>2. Bicycle Facilities</li> <li>3. Safer Crossings</li> </ol>	<p><b>General Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Provide a MnDOT project scope for the TH 194/Central Entrance roadway applicable to the complexity of the urban-residential and suburban-commercial context of the project. The project should account for future land use, and provide facilities for all transportation needs, including people using the corridor to access employment, schools, health services, and other amenities by walking and bicycling. Create a corridor for people of all ages and abilities to walk and bike.</li> <li>• Provide a “complete street” roadway design, sensitive to the context and land use in the surrounding City that provides facilities for users of all ages and abilities.</li> </ul> <p><b>Specific Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Improve intersections of: <ul style="list-style-type: none"> <li>○ Trinity Road/US 53 and TH 194/W Central Entrance/US 53</li> <li>○ Mall Drive,</li> <li>○ Anderson Road/W. Myrtle Street</li> <li>○ S. Basswood Avenue</li> <li>○ CSAH 90.</li> </ul> </li> <li>• Provide shared use path connections to origins and destinations.</li> <li>• Provide RRFBs or PHBs at strategic locations.</li> <li>• Provide access management.</li> </ul>	x	x		x

#	Title	Year	Lead Agency	Membership /Stakeholders	Engagement Efforts	Key Goals/Objectives/Vision	Key Recommendations/Outcomes	Themes			
								Access Mgmt.	Bike/Ped	Transit	Streetscape
11	City of Duluth Retail Analysis	2015	Cushman Wakefield Northmarq	Cushman Wakefield Northmarq, City of Duluth	NA	<p><b>Purpose:</b> To catalog properties and development opportunities within each submarket, analyze the demand characteristics of the resident population and determine if a gap exists between the demand and supply for retail goods and services that would allow for infill or new construction.</p>	<p><b>Miller Hill Submarket - Weaknesses Identified:</b></p> <ul style="list-style-type: none"> <li>• Circulation of traffic</li> <li>• Complicated entry points</li> <li>• Lack of clear orientation / not cohesive</li> <li>• Outdated – lacks overall aesthetic or “feel”</li> <li>• Generally over parked / unused surface lots</li> <li>• Car-centric (limited access for pedestrians and bikes)</li> </ul> <p><b>Miller Hill Submarket - Transportation-Related Goals:</b></p> <ul style="list-style-type: none"> <li>• Improve the identity of the Miller Hill retail submarket to create a more urban feel &amp; better shopping experience. <ul style="list-style-type: none"> <li>○ Streetscape</li> <li>○ Public transit</li> <li>○ Increase density</li> </ul> </li> </ul>	x	x	x	x

**Central Entrance Plans Matrix - Roadway/Corridor Zone Recommendations**

#	Title	Zone 1: Trinity Rd to Anderson Rd	Zone 2: Anderson Rd to Basswood Ave	Zone 3: Basswood Ave to Arlington Ave/CSAH 90	Zone 4: Arlington Ave/CSAH 90 to Blackman Ave	Zone 5: Blackman Ave to Mesaba Ave
2	Metropolitan Bikeways Plan	<ul style="list-style-type: none"> <li>Study Route/Study Corridor: Central Entrance from Trinity Rd to Arlington Ave</li> <li>Top Priority: Central Entrance path extension to the Hillside and to the Miller Hill Mall.</li> <li>Key Gap: Central Entrance Bike Path – Current terminus at Arlington Ave to Miller Hill Mall.</li> </ul>	<ul style="list-style-type: none"> <li>Study Route/Study Corridor: Central Entrance from Trinity Rd to Arlington Ave</li> <li>Top Priority: Central Entrance path extension to the Hillside and to the Miller Hill Mall.</li> <li>Key Gap: Central Entrance Bike Path – Current terminus at Arlington Ave to Miller Hill Mall.</li> </ul>	<ul style="list-style-type: none"> <li>Study Route/Study Corridor: Central Entrance from Trinity Rd to Arlington Ave</li> <li>Top Priority: Central Entrance path extension to the Hillside and to the Miller Hill Mall.</li> <li>Key Gap: Central Entrance Bike Path – Current terminus at Arlington Ave to Miller Hill Mall.</li> </ul>		<ul style="list-style-type: none"> <li>Study Route/Study Corridor: Existing Central Entrance bike path to Mesaba Ave</li> <li>Top Priority: Central Entrance path extension to the Hillside and to the Miller Hill Mall.</li> <li>Key Gap: Central Entrance Bike Path from Harbor Highlands to Hillside Neighborhood.</li> </ul>
3	Central Entrance Corridor Study	<p><u>Roadway System Design</u></p> <ul style="list-style-type: none"> <li>Encourage new developments to develop accesses on backage roads.</li> <li>Discourage new accesses on Central Entrance.</li> <li>When development occurs, construct a backage road extending Palm St to Mall Dr</li> </ul> <p><u>Non-Motorized Transportation</u></p> <ul style="list-style-type: none"> <li>Develop a sidewalk on the south side of Central Entrance from Mall Drive to Anderson Road.</li> <li>Develop a sidewalk along Mall Drive from Central Entrance to Home Depot and Olive Garden.</li> <li>Connect sidewalk from Maple Grove Road along Joshua Avenue to Shopko.</li> <li>Connect Shopko to Caribou Coffee near Cub Foods. Also connect to the intersection of Central Entrance and Mall Drive.</li> <li>Connect sidewalk from Cub Foods to the existing sidewalk near Muffler Clinic.</li> <li>Incorporate an on-street bike route as part of a new frontage road to be constructed between Mall Drive and Robin Avenue.</li> </ul>	<p><u>Roadway System Design</u></p> <ul style="list-style-type: none"> <li>Myrtle St should function as backage road on north side of Central Entrance, Palm St should function as the backage road on the south side.</li> <li>Construct raised medians. Limit left turn lanes to only the signalized intersections at Anderson Rd and Basswood Ave</li> <li>Discourage new accesses on Central Entrance</li> <li>Connect Palm St to Anderson Rd</li> </ul> <p><u>Non-Motorized Transportation</u></p> <ul style="list-style-type: none"> <li>Construct missing sidewalk segments along both sides of Anderson Road, Myrtle Street, and Palm Street</li> <li>Construct boulevard-style sidewalks on both sides of Central Entrance.</li> <li>Add North/South sidewalk connections along streets between Palm Street and Central Entrance.</li> <li>Develop an on-street bike route on Palm Street from Arlington Avenue to Robin Avenue.</li> </ul>	<p><u>Roadway System Design</u></p> <ul style="list-style-type: none"> <li>Convert two-way left turn lane into raised median from Basswood Ave to Arlington Ave</li> </ul> <p><u>Non-Motorized Transportation</u></p> <ul style="list-style-type: none"> <li>Construct boulevard-style sidewalks on both sides of Central Entrance.</li> </ul>	<p><u>Roadway System Design</u></p> <ul style="list-style-type: none"> <li>Convert two-way left turn lane into raised median from Myrtle Pl to Blackman Ave</li> <li>Myrtle St backage road: Option 1) connect Myrtle Place to Linden Street, or Option 2) extend Myrtle Place north to Locust Street.</li> <li>Extend Myrtle St to Blackman Ave</li> <li>Realign Clearwood Rd at Blackman Ave to align with Palm St</li> <li>Continue to use Palm St as a backage road for businesses on the south side of Central Entrance</li> <li>Encourage consolidation and shared accesses north of Central Entrance</li> </ul> <p><u>Non-Motorized Transportation</u></p> <ul style="list-style-type: none"> <li>Add boulevard-style sidewalks to the north side of Central Entrance from Blackman Avenue to Arlington Avenue.</li> <li>Add North/South sidewalk connections along Arlington Avenue between Palm Street and Central Entrance.</li> <li>Add North/South side walk connections along Harding Avenue between Palm Street and Central Entrance.</li> <li>Maintain the off-road paved bike path on the south side of Palm Street from Arlington Avenue to Blackman Avenue.</li> </ul>	<p><u>Non-Motorized Transportation</u></p> <ul style="list-style-type: none"> <li>Construct boulevard sidewalks on both sides of Central Entrance between Blackman Avenue and Mesaba Avenue.</li> <li>Maintain the off-road paved bike path on the south side of Palm Street from Blackman Avenue to 13th Street.</li> </ul>

#	Title	Zone 1: Trinity Rd to Anderson Rd	Zone 2: Anderson Rd to Basswood Ave	Zone 3: Basswood Ave to Arlington Ave/CSAH 90	Zone 4: Arlington Ave/CSAH 90 to Blackman Ave	Zone 5: Blackman Ave to Mesaba Ave
5	Central Entrance-Miller Hill Small Area Plan	<ul style="list-style-type: none"> <li>When the area on the south side of Central Entrance between Home Depot and Anderson Road redevelops, explore the possibility of creating a “backage road” to connect Anderson Road to Mall Drive (near Home Depot). This street should be designed for pedestrian and bicycle travel in addition to vehicles and it should be signed as a bike route. [see 3-I-1 on the Recommendations Map]</li> </ul>	<ul style="list-style-type: none"> <li>Extend Palm Street west of Robin Avenue to intersect with Anderson Road and close Robin Avenue access to Central Entrance to vehicular traffic. Design this street extension to accommodate pedestrian and bicycle travel. This should be done in conjunction with the redevelopment of the area along Anderson Road. The bike route that diverts to Orange Street should be relocated to this new street. [see 3-I-2 on the Recommendations Map]</li> <li>Plan to have Palm Street west of Arlington Avenue function as a “backage road” providing circulation for the re-developed sites along Central Entrance. This street should be designed to serve bicycles and pedestrians. [see 3-I-3 on the Recommendations Map]</li> </ul>	<ul style="list-style-type: none"> <li>Plan to have Palm Street west of Arlington Avenue function as a “backage road” providing circulation for the re-developed sites along Central Entrance. This street should be designed to serve bicycles and pedestrians. [see 3-I-3 on the Recommendations Map]</li> </ul>		
6	Miller Hill Corridor Plan	<ul style="list-style-type: none"> <li>Development of a minor arterial or collector street along the alignment of Joshua Ave from Hwy 53 to Arrowhead Rd. Joshua Avenue should not be developed until the potential for the future connection of it to Rice Lake Road is carefully considered as such a connection could place a significant amount of additional traffic onto Trinity Road.</li> </ul>				
10	<p>Pedestrian and Bicycle Recommendations Report*</p> <p>*see document for project assumptions</p>	<p><u>Option 1: Extend reconstruction limits to Trinity Rd/US 53.</u> Consider a 4-lane complete streets cross section. Consider the desired design speed adjacent to the established businesses along the corridor, and anticipated future businesses.</p> <p>In a full reconstruction scenario, provide minimum 10-ft shared use paths or sidewalk connections along the project corridor on both sides of TH 194. Consider the bikeway design when deciding between shared use path or sidewalk. Use the FHWA Bikeway Selection Guide based on the desired roadway speeds. Provide 2-ft buffer or clear zone on either side of the shared use path depending on where fences or retaining walls are placed.</p> <p><u>Option 2: Improve existing non-motorized facilities within the constraints of the mill and overlay.</u> If the roadway reconstruction cannot be extended to the Trinity Rd intersection, consider other options to provide a complete streets cross section within the existing ROW. Local businesses are in favor of more accessibility to</p>	<p><b>Anderson Rd to Arlington Ave</b> Consider the capacity needs of the corridor, conducting a traffic study to analyze 4-lane and 3-lane cross sections in combination with alternate intersection controls.</p> <p><u>Option 1: Provide facilities within the existing ROW.</u> Consider a 4-lane section. Consider a transit-only lane in both directions. Consider minimum 10-ft shared used paths on both sides. Consider adding boulevard as ROW is available or increasing the width of the shared use path if adjacent to or curb separated from higher speed (above 30 mph) traffic.</p> <p><u>Option 2: Acquire additional ROW to improve facilities.</u> Consider a 4-lane section. Consider a transit-only lane in both directions. Consider additional space for transit stations at intersections to maintain access for people walking and bicycling to the stations. Consider users of all ages and abilities using the widened shared use path. Obtain additional ROW to provide space for the prioritized or hierarchy of users.</p>	<p><b>Anderson Rd to Arlington Ave</b></p> <ul style="list-style-type: none"> <li>See Zone 2 Options.</li> </ul> <p><u>Additional Recommendations</u></p> <ul style="list-style-type: none"> <li>Zones 2-4: Provide RRFBs or PHBs at strategic locations. Consider RRFBs or other countermeasures, depending on the chosen speed for the corridor, at unsignalized locations to serve non-motorized crossing movements to local destinations (based on ped/bike counts and video analysis).</li> </ul>	<p><b>Arlington Ave to E. 13th Street</b> Evaluate the capacity needs of the corridor. Conduct a traffic study to evaluate 4-lane and 3-lane cross sections in combination with alternate intersection controls.</p> <p><u>Option 1: Reconstruct a 4-lane section.</u> Consider extending the reconstruction to E. 13th Street Consider a 4-lane section to match the cross section of Segment B – B, Option 1.</p> <p><u>Option 2: Provide a 4-lane section with a mill and overlay.</u> Consider a 4-lane section to maintain the current scope as a mill and overlay to E. 13th Street Provide non-motorized facilities on both sides of TH 194.</p> <p><u>Option 3: Reconstruct a 3-lane section.</u> Consider extending the reconstruction to E. 13th Street Consider a 3-lane section to match the cross section of Segment B – B, Option 3.</p> <p><u>Additional Recommendations:</u></p> <ul style="list-style-type: none"> <li>Narrow lanes to 11 feet to reduce vehicle speeds.</li> </ul>	<p><b>Arlington Ave to E. 13th Street</b></p> <ul style="list-style-type: none"> <li>See Zone 4 options.</li> </ul> <p><b>East 13th St to Mesaba Ave</b></p> <p><u>Option 1: Extend reconstruction to provide improved facilities.</u> Consider extending full reconstruction to the concrete pavement joint. Provide continuous facility for people walking and bicycling on both sides of TH 194.</p> <p><u>Option 2: Provide facilities within current project scope.</u> Maintain current mill and overlay scope. Provide continuous facility for people walking and bicycling on both sides of TH 194.</p> <p><u>Additional Recommendations:</u></p> <ul style="list-style-type: none"> <li>Narrow lanes to 11 feet to reduce vehicle speeds.</li> <li>Provide a continuous separated protected bikeway facility along TH 194 to access the trail on the south side at the intersection of E.13th Street. Consider a continuous 10-ft shared use path along the south side of TH</li> </ul>

#	Title	Zone 1: Trinity Rd to Anderson Rd	Zone 2: Anderson Rd to Basswood Ave	Zone 3: Basswood Ave to Arlington Ave/CSAH 90	Zone 4: Arlington Ave/CSAH 90 to Blackman Ave	Zone 5: Blackman Ave to Mesaba Ave
		<p>their locations. Discuss with business owners the use of local roadways as non-motorized facilities until a shared use path can be built on the north side of TH 194.</p> <p><u>Additional Recommendations</u></p> <ul style="list-style-type: none"> <li>Narrow lanes to 11 feet to reduce speeds.</li> <li>Consider median plantings for corridor place-making. Consider street trees with the understanding of clear zone requirements for the chosen speed limit. Consider pedestrian level street lighting for the paths. Discuss with the City.</li> </ul>	<p><u>Option 3: Provide improved facilities within the existing ROW.</u></p> <p>Consider a 3-lane section. As part of the traffic study, evaluate a 3-lane section in combination with the roundabout intersection evaluation. Traffic volumes are approaching FHWA and ADT threshold maximums of 25,000 ADT. A 3-lane section may be feasible if the design incorporates multi-modal improvements that reduce single occupancy vehicles, lowering ADT. Side street volumes are also low, making the high volume threshold more achievable within a 3-lane section.</p> <p><u>Additional Recommendations:</u></p> <ul style="list-style-type: none"> <li>Consider a shared bus and bicycle lane. Evaluate the safety concerns within design, and after consideration of alternative concepts including ROW acquisition.</li> <li>Provide a transit study within the project scope to determine the most efficient routing and ensure the MnDOT project does not preclude transit options.</li> <li>Consider additional ROW solely at intersections, considering a roundabout corridor.</li> <li>Zones 2-4: Provide RRFBs or PHBs at strategic locations. Consider RRFBs or other countermeasures, depending on the chosen speed for the corridor, at unsignalized locations to serve non-motorized crossing movements to local destinations (based on ped/bike counts and video analysis).</li> </ul>		<ul style="list-style-type: none"> <li>Consider median planters for corridor place-making. Consider street trees, while considering clear zone width for speeds above 35 mph. Discuss with the City.</li> <li>Provide a continuous bikeway facility between CSAH 90/Arlington Avenue to E. 13th Street for transportation purposes. Consider the origins and destinations on both sides of TH 194 within the project.</li> <li>Zones 2-4: Provide RRFBs or PHBs at strategic locations. Consider RRFBs or other countermeasures, depending on the chosen speed for the corridor, at unsignalized locations to serve non-motorized crossing movements to local destinations (based on ped/bike counts and video analysis).</li> </ul>	<p>194. Consider removing all non-compliant 5-ft sidewalk and replacing with 10-ft shared use path with trees to provide a buffer from TH 194. Upgrade the 5-ft sidewalk to 10-ft shared use path along Daybreak Overlook Road.</p>

**Central Entrance Plans Matrix - Corridor-Wide Recommendations**

#	Title	Corridor-Wide Recommendations
2	Metropolitan Bikeways Plan	NA
3	Central Entrance Corridor Study	<ul style="list-style-type: none"> <li>• Coordinate Traffic Signals</li> <li>• Develop a Streetscape Plan</li> <li>• Create Corridor “Gateways”</li> <li>• Develop an Access Management Policy               <ul style="list-style-type: none"> <li>○ Mesaba Avenue to Blackman Avenue: Promote sharing of accesses as development occurs in this area.</li> <li>○ Basswood Avenue to Blackman Avenue: This segment currently has the highest density of accesses onto Central Entrance. Crash rates are also highest in this area. To improve safety and preserve roadway capacity, no more direct accesses should be allowed along this stretch of the corridor. When development takes place, accesses should be shared with neighboring properties or connected to the backage road system where possible.</li> <li>○ Basswood Avenue to Anderson Road: New developments should be encouraged to develop their accesses on the backage roads. New accesses should be discouraged on Central Entrance in this area.</li> <li>○ Anderson Road to Trinity Road: Any new access in this area should utilize backage roads when possible.</li> </ul> </li> <li>• Create a Highway Overlay Zone District</li> </ul>
5	Central Entrance-Miller Hill Small Area Plan	<ul style="list-style-type: none"> <li>• When streets are reconstructed or new streets are added, sidewalks should be constructed on both sides of the streets.</li> <li>• When Central Entrance is reconstructed, do not pursue the option listed in the Miller Trunk Highway Implementation Plan that designates Central Entrance and Palm Street as “one-way” streets.</li> <li>• When Central Entrance is reconstructed, pursue a “context sensitive solution” as identified in the Institute for Transportation Engineers document “Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities.” The context should be a walkable, urban thoroughfare that permits comfort-able use of the street by pedestrians and transit users as well as vehicles.</li> <li>• Encourage site designs that limit curb cuts on Central Entrance, where possible, through requiring shared driveways and only allow “right-in, right-out” driveways where necessary.</li> <li>• When streets are reconstructed, look for opportunities to include space for trees and other vegetation that will shade pavement.</li> <li>• Given the right of way constrictions on Central Entrance and the existing signed bike route on Palm Street, a bike lane on Central Entrance may not be necessary.</li> <li>• Sidewalks must be provided on both sides of all bus routes in the study area in order to accommodate transit users accessing and departing buses.</li> <li>• Acquire additional right of way in strategic locations where bus shelters are needed.</li> <li>• Install and maintain landscaping in medians on Central Entrance and Maple Grove Road in order to reduce the amount of hard surfaces and to “soften” the environment.</li> <li>• Construct and maintain additional plantings in strategic locations throughout the study area.</li> </ul>
6	Miller Hill Corridor Plan	<ul style="list-style-type: none"> <li>• MnDOT's plans for a fifth lane on Central Entrance should include some related access limitations. The elimination and relocation of some curb cuts should be accomplished as part of the negotiations to acquire additional right-of-way. Some properties on Central Entrance should be designated to allow entrance only, with egress provided onto the proposed rear access road.</li> <li>• Improvements along Central Entrance and Highway #53 should be made to increase pedestrian safety, including signalized crosswalks and sidewalks.</li> </ul>
10	Pedestrian and Bicycle Recommendations Report  *see document for project assumptions	<p><u>Provide a continuous bikeway facility on or along TH 194</u></p> <ul style="list-style-type: none"> <li>• Conduct a study of the bikeway network. Discuss with the City and Duluth Superior Metropolitan Interstate Council. Consult all existing plans and studies when determining the scope of the study. Consider a project scope that includes the development from Heines Road to TH 194, TH 194 from Maple Grove Road, the project limits of Trinity Road to Rice Lake Road/Mesaba Avenue, and also local roadways including Palm St. Palm Street is currently identified as a bicycle route that parallels parts of TH 194; however, it does not provide a complete network, and does not allow access to businesses on the north side of TH 194. Also, given existing grades, Palm Street does not provide the same ease of use as the TH 194 corridor.</li> <li>• Identify the origins and destinations within the study area and how people are accessing them. Include within the study a preferred (unconstrained) concept for a continuous separated and protected network for people bicycling, its relation to the transit network, and how it accesses origins and destinations on the TH 194 corridor.</li> <li>• Evaluate the proposed roadway reconfigurations with respect to their ability to accommodate bikeway facilities within the study.</li> <li>• Plan for the maintenance of the proposed facility.</li> <li>• Utilize local roadways, including Palm Street, as well as the existing shared use path to provide a bikeway network and compliment a facility within the TH 194 corridor. If the existing shared use path will be used as the primary facility for the bicycle network, work with the City to improve the pavement conditions on these local roadways.</li> <li>• Consider bicycle boulevards or other facility types on local roads, including Palm Street. Local roads should not replace a facility within the TH 194 corridor that will provide equitable transportation access to the commercial businesses, employers, schools and other origins and destinations. Discuss with the City and stakeholders.</li> </ul> <p><u>Provide connections and complete the shared use path network</u>            Whether the project scope is a reconstruction project, or a project with more limited scope, upgrade the sidewalk on the north side of TH 194 to be a minimum 10-ft shared use path to provide connecting facilities for people walking and bicycling. Consider in combination with roadway reconfiguration options.</p> <p><u>Provide Access Management</u>            Provide access management strategies, closing or combining driveways strategically to limit conflict points with vehicles and people walking and biking along TH 194.</p>

Central Entrance Plans Matrix - Intersection Recommendations (Trinity Rd to Arlington Ave/CSAH 90)

#	Title	Trinity Rd	Mall Dr	Anderson Rd	Robin Ave	Ebony Ave	Basswood Ave	Arlington Ave/CSAH 90
3	Central Entrance Corridor Study				Create a right-in/right-out at Robin Ave	Develop a pedestrian crossing on Central Entrance at Ebony Avenue; support with advanced warning technology.		
5	Central Entrance-Miller Hill Small Area Plan				Close Robin Avenue access to Central Entrance to vehicular traffic.	Create a “right-in, right-out” intersection at Ebony Avenue, as necessary for development, including signalization of a full intersection (when warranted) to allow for better vehicle circulation to sites on both sides of Central Entrance and to provide another crossing point for pedestrians and bicycles. A median at the intersection will also allow a pedestrian refuge. [see 3-1-4 on the Recommendations Map]		
9	MnDOT ADA Group - Central Entrance Report						Potential driveway access closures just east of Basswood Ave.	
10	Pedestrian and Bicycle Recommendations Report	<p><u>Roundabout</u></p> <ul style="list-style-type: none"> <li>Consider roundabouts as control, in conjunction with suggested roadway reconfiguration options.</li> </ul> <p><u>Improvements to Existing</u></p> <ul style="list-style-type: none"> <li>Provide crosswalk markings over the free right turning movements.</li> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Consider the placement of the stop bar. Place stop bar to protect people in the crosswalk from the multiple threat crash caused by more than one lane of thru traffic.</li> <li>Provide pedestrian crossing times that allow people to cross the intersection in one signal phase. Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> <li>Connect the proposed network to the intersection of</li> </ul>	<p><u>Improvements to Existing</u></p> <ul style="list-style-type: none"> <li>Provide pedestrian crossings at the bus stops at Mall Drive. Work with the Duluth Transit Authority so that bus stops occur adjacent to crossings and new shared use path or walk.</li> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Provide pedestrian crossing times that allow people to cross the intersection in one signal phase. Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> <li>Consider the placement of the stop bar. Place stop bar to protect people in the crosswalk from the multiple threat crash caused by more than one lane of thru traffic.</li> <li>Provide sidewalk or shared use path connections to local destinations. Consider the straight line path people will</li> </ul>	<p><u>Roundabout</u></p> <ul style="list-style-type: none"> <li>Consider roundabouts as control, in conjunction with suggested roadway reconfiguration options.</li> </ul> <p><u>Improvements to Existing</u></p> <ul style="list-style-type: none"> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Minimize turning radii, considering design and control vehicles needed for local urban streets.</li> <li>Provide pedestrian facilities at signals. Provide a leading pedestrian interval.</li> <li>Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> <li>Consider the placement of the stop bars. Place stop bars to protect people in the crosswalk from the multiple threat crash caused by more than one lane of thru traffic.</li> <li>Provide shared use path connections from proposed</li> </ul>	<p><u>Improvements to Existing</u></p> <ul style="list-style-type: none"> <li>Provide shared use path connections from proposed network on TH 194 to the local street network. Consider elimination of right turn lane onto S. Robin Avenue to construct within existing ROW.</li> </ul>		<p><u>Improvements to Existing</u></p> <ul style="list-style-type: none"> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Minimize turning radii, considering design and control vehicles needed for local urban streets.</li> <li>Provide pedestrian facilities at signals. Provide a leading pedestrian interval.</li> <li>Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> <li>Consider the placement of the stop bars. Place stop bars to protect people in the crosswalk from the multiple threat crash caused by more than one lane of thru traffic.</li> <li>Provide shared use path connections from proposed network on TH 194 to the local street network.</li> </ul>	<p><u>Roundabout</u></p> <ul style="list-style-type: none"> <li>Consider roundabouts as control, in conjunction with suggested roadway reconfiguration options.</li> </ul> <p><u>Improvements to Existing</u></p> <ul style="list-style-type: none"> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Minimize turning radii, considering design and control vehicles needed for local urban streets.</li> <li>Provide pedestrian facilities at signals. Provide a leading pedestrian interval.</li> <li>Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> <li>Consider the placement of the stop bars. Place stop bars to protect people in the crosswalk from the multiple threat crash caused by more than one lane of thru traffic.</li> <li>Provide shared use path connections from proposed</li> </ul>

#	Title	Trinity Rd	Mall Dr	Anderson Rd	Robin Ave	Ebony Ave	Basswood Ave	Arlington Ave/CSAH 90
		Trinity Road/US 53 and TH 194/W Central Entrance/US 53. Balance minimum sidewalk or shared use path widths with available right-of-way and drainage needs.	walk, not always paralleling the roadway or vehicular path. Discuss with the City and property owners.	network on TH 194 to the local street network. Consider elimination of right turn lane onto S. Robin Avenue to construct within existing ROW.				network on TH 194 to the local street network.

**Central Entrance Plans Matrix - Intersection Recommendations (East of Arlington Ave/CSAH 90 to Mesaba Ave)**

#	Title	Driveway Just East of Myrtle PI	Kissell Ave	Harding Ave	Stroll Ave	Blackman Ave	Pecan Ave	East 13th St	Mesaba Ave
3	Central Entrance Corridor Study	<ul style="list-style-type: none"> <li>• Create eastbound left turn lane</li> <li>• Create right-in/right-out</li> </ul>	Develop a pedestrian crossing on Central Entrance at either Kissell Avenue or Harding Avenue; support with advanced warning technology.	<ul style="list-style-type: none"> <li>• Create a westbound left turn lane at Harding Ave</li> <li>• Create right-in/right-out</li> <li>• Develop a pedestrian crossing on Central Entrance at either Kissell Avenue or Harding Avenue; support with advanced warning technology.</li> </ul>	Create right-in/right-out	Consider a signal at Blackman Ave and Central Entrance			
5	Central Entrance-Miller Hill Small Area Plan			Create a "right-in, right-out" intersection at Harding Avenue, as necessary for development, including signalization of a full intersection (when warranted) to allow for better vehicle circulation to sites south of Central Entrance and to provide another crossing point for pedestrians and bicycles. A median at the intersection will also allow a pedestrian refuge. [see 3-I-5 on the Recommendations Map]		Establish (when warranted) a signalized intersection at Blackman Ave in order to give pedestrians, bicyclists and transit users more places to safely cross the street [see 5-A-3 on the Recommendations Map]			
9	MnDOT ADA Group - Central Entrance Report	Pedestrian crossing improvement.		Pedestrian crossing improvement.				Potential driveway access closure on north side	

#	Title	Driveway Just East of Myrtle PI	Kissell Ave	Harding Ave	Stroll Ave	Blackman Ave	Pecan Ave	East 13th St	Mesaba Ave
10	Pedestrian and Bicycle Recommendations Report					<u>Roundabout</u> <ul style="list-style-type: none"> <li>Consider roundabouts as control, in conjunction with suggested roadway reconfiguration options.</li> </ul>	<u>Roundabout</u> <ul style="list-style-type: none"> <li>Consider roundabouts as control, in conjunction with suggested roadway reconfiguration options.</li> </ul> <u>Improvements to Existing</u> <ul style="list-style-type: none"> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Minimize intersections skew as much as possible at Pecan Avenue. Minimize turning radii, considering design and control vehicles needed for local urban streets.</li> <li>Provide pedestrian facilities at signals. Provide a leading pedestrian interval.</li> <li>Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> <li>Consider the placement of the stop bars. Place stop bars to protect people in the crosswalk from the multiple threat crash caused by more than one lane of thru traffic.</li> <li>Provide shared use path connections from proposed network on TH 194 to the local street network.</li> <li>Provide shared use path connections from proposed network on TH 194 to existing shared use path on both sides of Pecan Avenue.</li> </ul>	<u>Improvements to Existing</u> <ul style="list-style-type: none"> <li>Provide pedestrian crossings, including high visibility crosswalk markings, signs, and pedestrian ramps.</li> <li>Minimize turning radii, considering design and control vehicles needed for local urban streets.</li> <li>Provide pedestrian refuge and crossing islands to accommodate slower walking speeds.</li> </ul>	