North Wenatchee Avenue Concept

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PROJECT DESCRIPTION

Objectives & Process

Transforming the North Wenatchee Avenue corridor into a unique multimodal gateway to Wenatchee.

PROJECT OBJECTIVES

The objective of the project was to utilize the North Wenatchee Avenue Transportation Master Plan and the Draft North Wenatchee Master Plan as the basis for developing alternatives for the urban form and land use planning around North Wenatchee Avenue. The study proposes aesthetics, business environment, multimodal options, land use opportunities, private property improvement recommendations, suggested code updates, gateway improvements and other considerations that need to be understood before roadway design begins. This project will set the stage for:

- Detailed engineering design, identify where there may be conflicts with the existing Transportation Plan and serve as a tool to inform the Connection Washington Funds.
- City funded McKittrick projects and provides a tool for communicating and setting expectations for agency officials and the public regarding the design and function of North Wenatchee Avenue.

The project:

- Incorporates stakeholder agencies and city staff input to create a shared vision for the North Wenatchee Avenue corridor.
- Considered a range of corridor-wide multi-modal streetscape alternatives and identified the potential for land use and redevelopment opportunities;
- Reflects the refinements of a preferred alternative chosen by stakeholders. It includes costs and phasing estimates for the preferred alternative.
- Includes highly illustrative plans, sections and three dimension perspective drawings that effectively communicate the design and urban form for the project area.

PROCESS

The project included four major tasks beginning in October 2016 and was completed in March 2017.

1. Research, Analysis, and Project Familiarization
2. Alternatives Development
3. Preferred Alternative Refinement
4. Finalize Corridor Concept

BACKGROUND INFORMATION

Existing Street Character

The current condition of N. Wenatchee Ave lacks many of the qualities of a viable multimodal complete street. It is insufficient in serving as a 'front door' passage to the city of Wenatchee and is unsafe and unappealing for pedestrians and bicyclists.

PROJECT AREA

North Wenatchee Avenue is an auto-oriented commercial corridor running through North Wenatchee, parallel to the Columbia River. This thoroughfare reaches from downtown Wenatchee to the Wenatchee River where it joins US 2 and SR 285. Improvements will occur between the intersection of North Miller Street to the south and the Wenatchee River overpass the to the north--approximately 1.5 miles of roadway. The project area also extends to include adjacent streets and properties abutting N. Wenatchee Ave.

EXISTING CHARACTER

- Corridor serves as 'gateway' entrance to Wenatchee
- Auto/truck priority--Poor pedestrian facility, no bicycle or transit facilities
- Exclusively commercial service uses
- Congestion at peak hours
- Poor aesthetics dominated by parking lots and signs
- No landscaping

EXISTING CONDITIONS

The current 70' right-of-way consists of four travel lanes (two in each direction) separated by a continuous turn lane. Sidewalks are five feet wide and are frequently interrupted by driveway entrances. There is no bicycle facility, nor is there priority given to transit in the form of signalization or dedicated lanes.

TRAFFIC FLOW

Key locations affected by poor traffic flow, traffic queues, and congestion (*as indicated in the North Wenatchee Transportation Master Plan)* include:

- North Wenatchee Avenue in the vicinity of Maiden Lane and Horse Lake Road
- North Wenatchee Avenue at Miller Street and Maple Street

TRANSIT

Congestion impacts related to transit service include:

- Lack of consistent travel speeds for buses to meet service objectives
- Lack of reliability for maintaining scheduled stop times

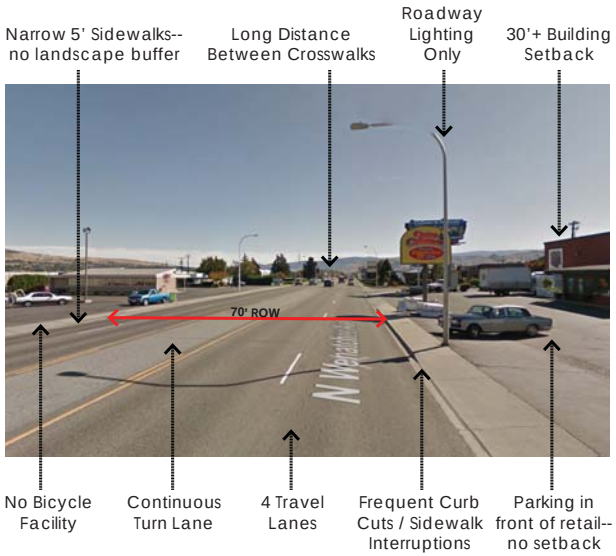
Congestion impacts related to transit service include:

- Improve pedestrian connectivity and accessibility to transit from adjacent neighborhoods and from uses along the corridor
- Imporove comfort ad safety at transit stops
- Reduce conflicts between transit vehicles and motor vehicles at congested intersections

LAND USE

Current regulations promote:

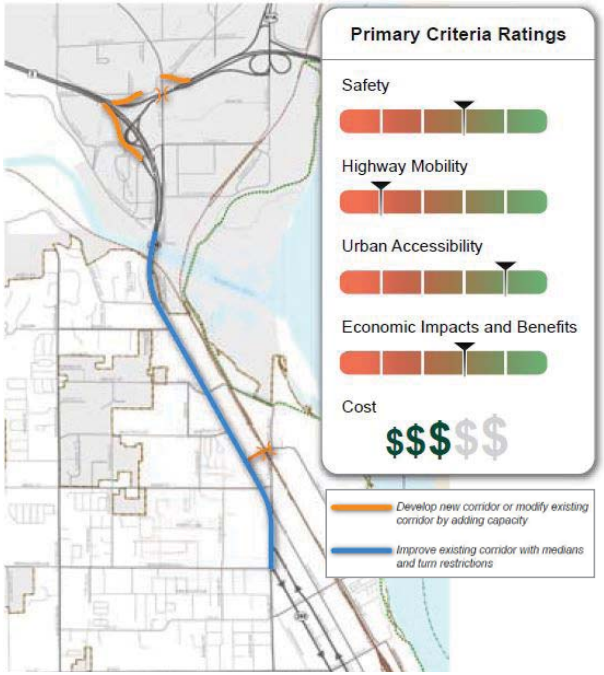
- Parking lots between street and buildings
- Large obtrusive signs, storage loading and service areas
- Auto convenience use - i.e. drive-thru windows



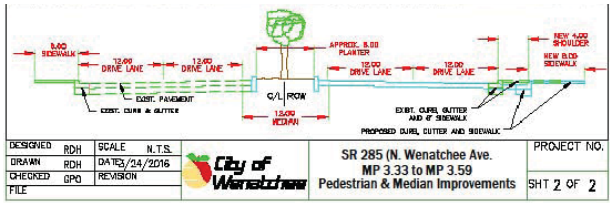
BACKGROUND INFORMATION

Planning History

Development of the concept plan includes consideration of concepts and technical information gathered from previous studies.



North Wenatchee Transportation Master Plan - Improvement Concept



N. Wenatchee Ave Pedestrian & Median Improvements

NORTH WENATCHEE TRANSPORTATION MASTER PLAN

The *North Wenatchee Transportation Master Plan* focuses on North Wenatchee Avenue between US 2 and 5th Street north of downtown Wenatchee.

Goals of the Transportation Master Plan include:

- Identify and implement strategies to improve transportation safety, traffic flow, and connectivity
- Enhance the environment for businesses and residents
- Accomodate planned growth and development within the Valley

The plan calls to modify the North Wenatchee Avenue concept to:

- Maximize capacity of the existing roadway through development of additional circulation roads and modifications along the corridor
- Add capacity at intersections
- Reconfigure access to driveways with medians, U-turn routes, and turn restrictions.
- Improve traffic flow with the addition of turn lanes, a new traffic signal, and improved traffic signal coordination

Additional improvement projects include:

- Landscaping
- Consolidating driveways
- Restricting some turns to reduce conflict
- Improved signing, markings, and lighting
- Pedestrian & bicycle enhancements - wider sidewalks, upgraded crosswalks, improved signal detection of bicycles
- Construction/upgrade of transit stops and shelters

CONFLUENCE PARKWAY

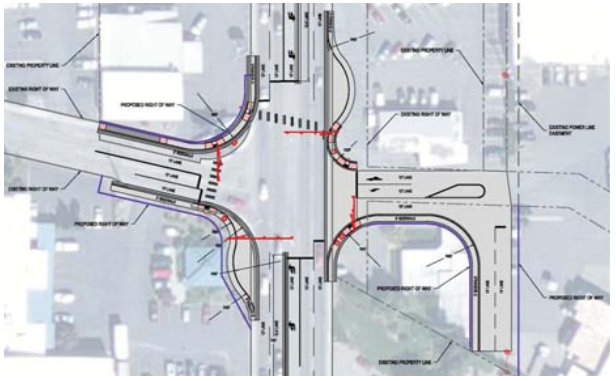
Additionally, the Transportation Master Plan includes the development of "Confluence Parkway," a proposed parallel arterial connecting Miller Street to Euclid Avenue interchange with US 2. The construction of the new arterial intends to shift traffic away from N. Wenatchee Avenue and increase overall capacity and connectivity in North Wenatchee.

NORTH WENATCHEE MASTER PLAN

The *North Wenatchee Master Plan* was completed in October 2016. The new development at North Wenatchee intends to serve as a catalyst for additional redevelopment along the North Wenatchee Avenue corridor with a 'gateway' entry at the intersection of McKittrick Street and Wenatchee Avenue in the heart of the Master Plan. The City has identified this intersection for reconstruction to include enhancements indicated in the Transportation Master Plan.

MCKITTRICK STREET INTERSECTION

- Construct new traffic signals with left-turn lanes and provide for U-turns
- Provide new crosswalks
- Incorporate bus pull-outs near intersection, as possible



N. Wenatchee Ave. & McKittrick St. Intersection Improvements - City of Wenatchee

BACKGROUND INFORMATION

Guiding Policies

Design of the street was informed by adopted City of Wenatchee and Washington Department of Transportation Complete Street Policy that applies to this corridor.

CORRIDOR FUNCTION

As stated in the *North Wenatchee Transportation Master Plan :*

The overarching issue is balancing the wide range of transportation functions that the existing North Wenatchee Avenue corridor serves, such as:

- Serving as one of only two regional access routes to/from Wenatchee including access to the hospital, state and regional parks, and downtown Wenatchee
- Providing access to retail and commercial businesses along North Wenatchee Avenue and immediately adjacent areas
- Serving truck access for fruit packing plants and other industrial and commercial uses
- Providing access to/from the Loop Trail ,waterfront parks, and Town Toyota Center for a variety of travel modes
- Providing the spine for Link's Intercity regional transit service between Wenatchee and outlying communities and local transit service in North Wenatchee area
- Providing access to residential areas, parks, and schools in and adjacent to the highway corridor

North Wenatchee Master Plan - Roadway Improvements

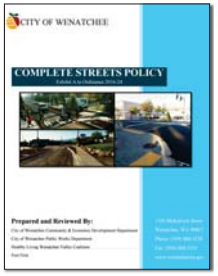
COMPLETE STREETS

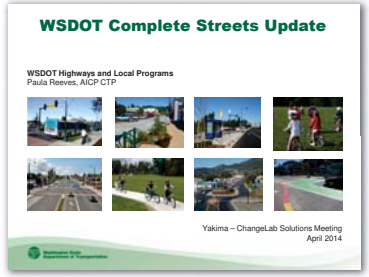
The Wenatchee Complete Streets Policy requires that implementation partners will:

- Incorporate complete streets principles into all existing plan, manual, checklists, rules, regulations and programs
- Review current design standards… which apply to new roadway construction, to ensure that they reflect the best available design standards and guidelines, and effectively implement Complete Streets
- Identify all current and potential future sources of funding for street improvements and recommend improvements to the projects selection criteria to support Complete Streets projects

Contemporary American streets have held a bias toward cars, trucks, and transit for more than 70 years. This priority is referred to as the Engineered Method. In contrast, the Complete Streets Method rebalances and recalibrates the street to prioritize pedestrians and bicycles while still accomodating motor vehicles and other essential functions. Complete Streets incorporate quality design for sidewalks, bike lanes, intersections, and crosswalks for streets emphasising mobility or destination.

North Wenatchee Avenue is a mobility emphasis street, so the intent is to reduce friction by miniming conflicts and delays. The tables shown on the following page indicate the design criteria for each mode of transportation on a mobility emphasis corridor.



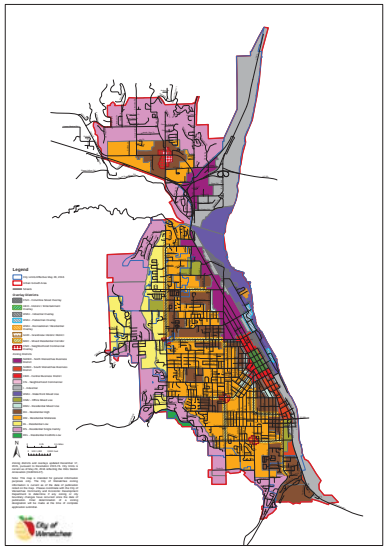


City & State Complete Streets Policy Documents-- City of Wenatchee, WSDOT

WENATCHEE ZONING CODE

The project area falls entirely within the North Wenatchee Business District zone (NWBD). This commercial type zone has few restrictions. Proposed improvements meet existing NWBD zoning requirements and recommend the adoption of more strict development standards within the Wenatchee corridor.

> ***10.26.005 Purpose.***
> *The NWBD land use classification is intended for areas suitable for retail and other services and related support facilities, including residential dwelling units not occupying grade level street frontage. The development of pedestrian destinations and improved public spaces is a goal of the NWBD. (Ord. 2010-03 § 1 (Exh. A); Ord. 2007-34 § 2 (Exh. A))*



City of Wenatchee Zoning Districts and Zoning Overlay Districts

BACKGROUND INFORMATION

Complete Streets Criteria

Wenatchee Avenue is a 'Mobility Corridor.' The following are essential criteria that address the needs of all modes of transportation for a busy roadway.

PEDESTRIAN DESIGN ELEMENTS

In order to create a safe and comfortable pedestrian environment within a complete street, the sidewalk must be widened to a minimum of eight feet to accommodate a landscape strip for separation from vehicular traffic while maintaining an unobstructed six feet of walkway. Continuity is important as well, requiring a reduction of driveway interruptions and ensuring that sidewalks continue through intersections by way of striped crosswalk. Lighting should be pedestrian scaled. Basic roadway lighting is not sufficient for the pedestrian zone.

PEDESTRIAN

DESIGN ELEMENT	MOBILITY CORRIDOR CRITERIA
Sidewalk Width	8' Minimum (Unobstructed 6')
Travel Lanes Pkwy Separation	4' Minimum, Landscaped
Sidewalk Continuity	Driveways--Limited
Development Edge	Parking Lot Impacts Minimized
Intersections	Tight Radii (25') + no curb
Crosswalks	Ladder Stripe + Refuge at Landscaped Median
Lighting	Pedestrian Scaled

EXAMPLE: Cornell Road. Hillsboro, Oregon

BICYCLE DESIGN ELEMENTS

Making accommodations for bicycle traffic requires more than merely allocating a shared lane in the roadway. For safe and inclusive bicycle travel, a complete street employs a physically separated, protected bikeway. For the Wenatchee Corridor, it is suggested that this bikeway be a multi-use path (MUP). The MUP incorporates the pedestrian and the bicycle into the same bi-directional path separate from the vehicular roadway, complete with intersection crossings. Additionally the bicycle facility will include bike racks.

BICYCLE

DESIGN ELEMENT	MOBILITY CORRIDOR CRITERIA
Travel Lanes	6' One-way / 10' Bi-directional
Safe Lanes	Physically Separated
Safe Intersections	Bike Box + Marked Crossings; Limit/ Prohibit RIght Auto Turns
Signalization	Bike Signal Phase
Parking	Covered Racks at Transit Stops
Maintenance	Swept Frequently /Plowed (Winter)
Wayfinding	Destination Distance / Trip Time

EXAMPLE: Multi-Use Path (MUP)

BACKGROUND INFORMATION

Complete Streets Criteria

Wenatchee Avenue is a 'Mobility Corridor.' The following are essential criteria that address the needs of all modes of transportation for a busy roadway.

AUTO/TRUCK DESIGN ELEMENTS

While most roadways are already designed to prioritize automobile and truck mobility, in a complete street it is important to distinguish between vehicle types. To improve roadway efficiency and pedestrian inclusivity, The Wenatchee Avenue roadway can be designed to accommodate mainly passenger vehicles and small delivery trucks, as these are the most common vehicles of travel. Larger vehicles that are less common, such as semi-trucks may still safely use the roadway, but will be directed to major intersections and roundabouts to make turns where adequate space is provided.

AUTO/TRUCK

DESIGN ELEMENT	MOBILITY CORRIDOR CRITERIA
Maximize Capacity (4 lanes)	8,000 Trips/Travel Lane
Minimize Delay	Level of Service E or Better
Travel Lane Width	Wider (10'-12' max.)
Parallel/Angled Parking	Discouraged
Access Management	Medians/U-Turns; Shared Driveways

EXAMPLE: A Avenue. Lake Oswego, Oregon

TRANSIT DESIGN ELEMENTS

The presence of transit within a complete street can look a number of ways. In this case, with a rapid bus system on Wenatchee Avenue, buses will run within regular travel lanes for most of the corridor, but also have access to queue jump lanes at major intersections. The queue jump areas are clearly marked with red paint as BUS ONLY and allow busses to pass stopped traffic with a transit priority signal. Queue jump lanes also include sheltered bus stops with seating for the comfort and safety of riders. This bus system is intended for the use of typical 40 foot bus with the option for future upgrade to 60 foot articulated bus. Other potential future transit upgrades may include a true bus rapid transit system (BRT), complete with a dedicated busway.

TRANSIT

DESIGN ELEMENT	MOBILITY CORRIDOR CRITERIA
Frequent Service	10 Minute (Peak Hours) 15 Minute (Off-Peak)
Dependable Service	All Day + Weekends
Competitive Trip Time	25 Minute Max.
Routes	Direct
Service	Major Destinations
Safe & Comfortable Stops	Shelters / Seating
Convenience	Electronic Reader Board
Vehicle	Low Floor Boaring + Bicycle Racks

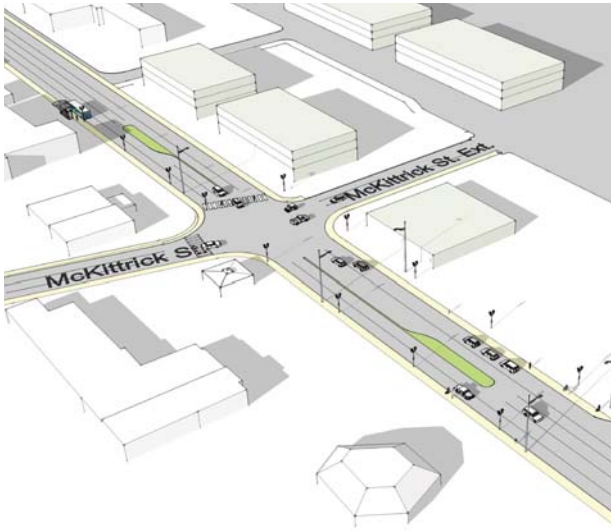
EXAMPLE: Franklin Avenue BRT. Eugene, Oregon

BACKGROUND INFORMATION

Wenatchee Corridor Alternatives: Three alternative complete street concepts were assessed and evaluated using fundamental requirements as criteria. Both 'Alt. B' and 'C' were viewed as preferable. A phased approach in which 'Alt. B' would be constructed with the possibility of not precluding 'Alt. C' in the long term was recommended for further refinement.

(A) BOULEVARD CENTER

Corridor design as desicribed in N. Wenatchee Transportation Master Plan (2011). ROW expansion to 80 feet with median and left-turn/u-turn pockets at major intersections.

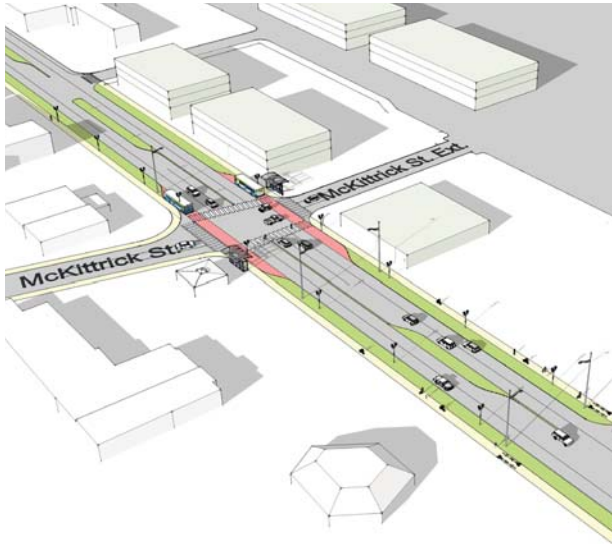


ALT. A: BOULEVARD CENTER

CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ○ ○
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ○ ○
Implementation Potential	
Cost/Financing Political Acceptance Phasing	● ● ●

(B) RAPID BUS MOD

ROW expansion to 90 feet (110 feet at intersections) with median and turn lanes. Queue jump and signal priority for buses. Substantial pedestrian and bicycle improvements with multi-use paths.

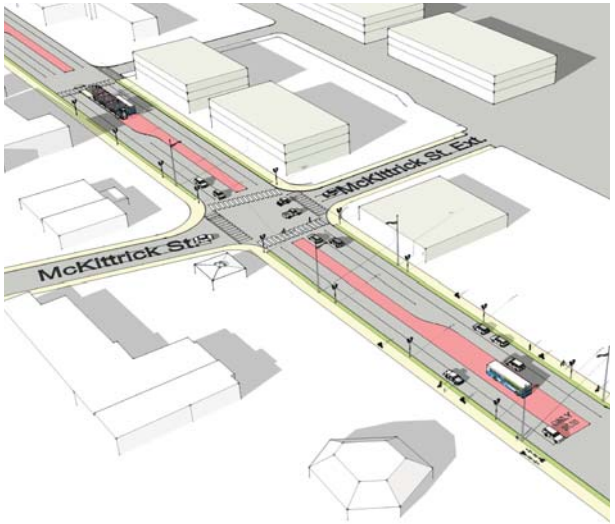


ALT. B: RAPID BUS MOD

CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ● ○
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ● ○
Implementation Potential	
Cost/Financing Political Acceptance Phasing	○ ? ○

(C) BUS RAPID TRANSIT (BRT) MOD

ROW expansion to 100 feet with dedicated central busway and multi-use paths for pedestrians and bicycles.



ALT. C: BRT MOD

CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ● ●
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ● ●
Implementation Potential	
Cost/Financing Political Acceptance Phasing	○ ? ○

PREFERRED ALTERNATIVE

B: Rapid Bus MOD

PREFERRED ALTERNATIVE: RAPID BUS MOD

Alternative B

The preferred alternative proposes substantial roadway improvements and upgrades for all modes. Key elements include landscaping, median with turn lanes, multi-use paths (MUP), and bus queue jump lanes with signal priority. The right-of-way expands to 90' and 110' at intersections.

Transportation

1. Minimize conflicts to promote safer conditions for all modes.
   - Landscaped median
   - Consolidated curb cuts
   - MUP for peds and bikes
   - Complete crosswalks and midblock crossings
2. Decrease delay and congestion.
   - Left turn/U-turn lanes at major intersections
   - Queue jump lanes with transit signal priority
3. Improve Gateway Experience into Wenatchee
   - Unique character/identiy
   - Landscaping and street trees
   - Decorative light fixtures with banners

Land Use

1. Land uses adjacent to roadway will remain commercial long term due to high traffic volume and demand.
2. Promote uses that are highest and best use.
3. Provide new site/building frontage standards that accomodate the auto but minimize their impacts.
4. Encourage design that values aesthetics, safety, and road function.

RENDERING: Proposed Typical Intersection - Alternative B

CORRIDOR DESIGN GUIDELINES

TRANSPORTATION ELEMENTS
Roadway Design Concepts

Concepts and guidelines for the North Wenatchee Corridor right-of-way and key design elements, specified by transportation mode.

1: Right-of-Way Concept

The Wenatchee Ave corridor ROW will expand to the east from the existing 70' to 90'. Maintaining the westside ROW line will minimize development impacts especially to already narrow westside lots. Major intersections will expand on both sides of the street to 110' in order to accomodate transit lanes, sheltered bus stops, turn pockets, and MUPs.

2: Motor Vehicle Channelization Concept

The improved roadway will maintain four lanes of traffic with the addition of a landscaped median extending the length of the project area. Left turn and u-turn opportunities will be provided only at identified median breaks to reduce turning conflicts. Median landscaping will also improve aesthetics and comfort in the corridor.

3: Transit Concept

Major intersections will have "far-side" bus stop shelters. In these locations, bus queue bypass lanes will be provided as well as priority signals to facilitate transit mobility and avoid or lessen congestion at major intersections.

4: Pedestrian Concept

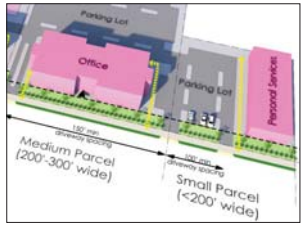
In addition to continuous MUPs and direct crosswalks at intersections, pedestrians will also have access to signalized and non-signalized crossings between major intersections. The improved pedestrian facilities will provide direct, convenient, and safe access to businesses and transit stops along the corridor as well as more frequent crossing opportunities.

5: Bicycle Concept

Bicyclists will have access to MUPs, separate from auto traffic, for the full length of the project area to provide direct, convenient, and safe access to businesses and transit stops along the corridor. Bike racks will be provided at major intersections to improve transit accessibility.

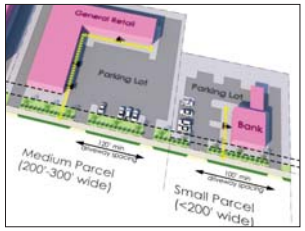
LAND USE ELEMENTS
Frontage Development Guidelines

Guidelines for the development of properties with frontage on North Wenatchee Avenue. Key design elements and standards specified by land use type (as permitted by Wenatchee Zoning Code) and parcel width.



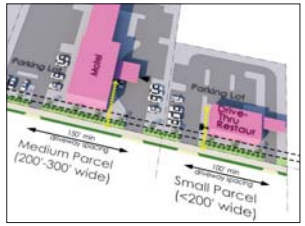
1: Commercial Office

Likely/Preferred Redevelopment Uses:
- Business offices
- Personal services



2: Commercial Retail

Likely/Preferred Redevelopment Uses:
- Banks
- Auto rental/sales
- Building materials
- Home furnishings
- Grocery
- Service stations
- General retail



3: Commercial, Service-Oriented

Likely/Preferred Redevelopment Uses:
- Restaurants
- Bars
- Auto service and repair
- Hotels/lodging

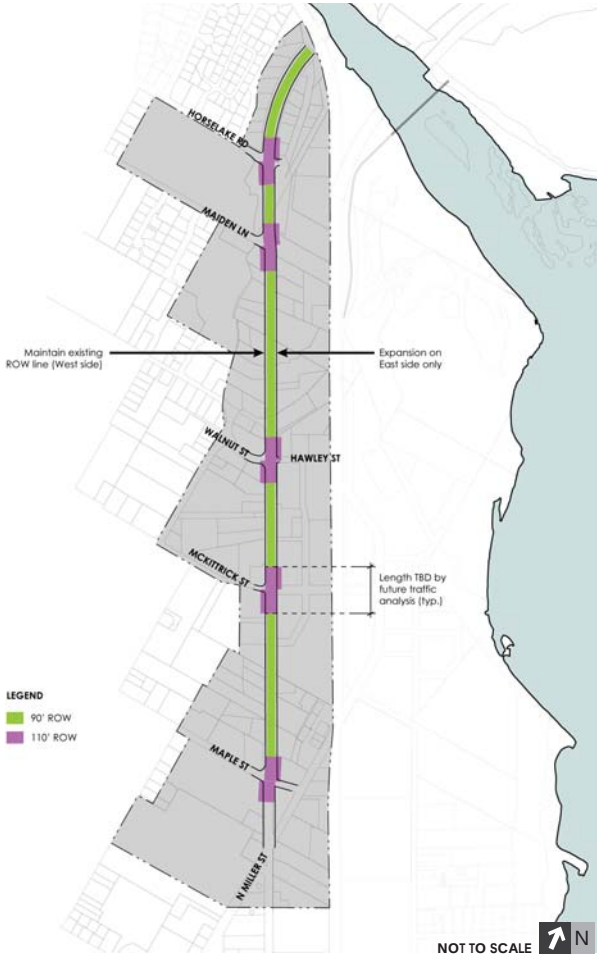
4: Medical

Likely/Preferred Redevelopment Uses:
- Medical offices
- Clinics

ROADWAY DESIGN CONCEPTS

1. RIGHT-OF-WAY CONCEPT

The Wenatchee Ave corridor ROW will expand to the east from the existing 70' to 90' to accomodate anticipated 2040 traffic increases and the improvement of alternative transportation modes. Maintaining the westside ROW line will minimize development impacts especially for already narrow westside lots. Major intersection ROWs will expand on both sides of the street to 110' in order to accomodate transit lanes, sheltered bus stops, turn pockets, and MUPs.



Existing ROW (typical)

- 70' from existing sidewalk outer edge to edge
- Width may vary slightly in some areas
- ROW includes 2 narrow sidewalks, 4 travel lanes, 1 continuous turn lane

Proposed ROW- 90' (green)

- Maintain westside ROW line
- Expand 20' to the east
- ROW includes 2 multi-use paths, 4 travel lanes, landscaping, median

Existing Intersection ROW (varies)

- 70' from existing sidewalk outer edge to edge
- Width may vary slightly at each intersection
- Intersection ROW includes incomplete crosswalks, 4 travel lanes, 2 left turn lanes

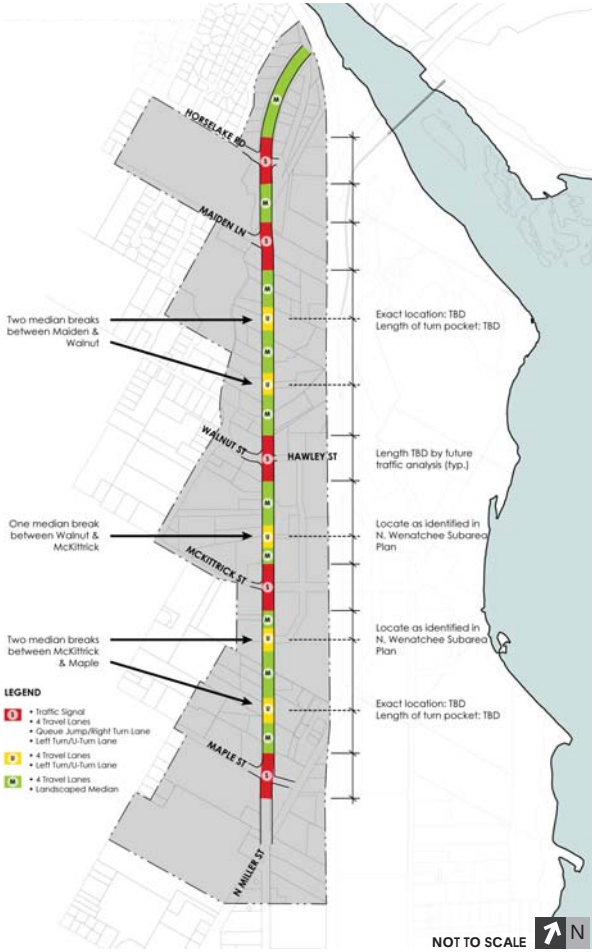
Proposed Intersection ROW- 110' min. (purple)

- ROW expanded to 110' on each side to include transit queue jump lanes and bus stop shelters
- Length of 110' ROW, TBD
- Includes complete crosswalks, 4 travel lanes, 2 left turn lanes

ROADWAY DESIGN CONCEPTS

2. MOTOR VEHICLE CHANNELIZATION CONCEPT

The improved roadway will maintain four lanes of traffic with the addition of a landscaped median extending the length of the project area. Left turn and u-turn opportunities will be provided only at identified median breaks to reduce turning conflicts. Median landscaping will also improve aesthetics and comfort in the corridor.



Existing Roadway

- 4 travel lanes separated by continuous central turn lane.

Proposed Roadway - Median Location (green)

- 4 travel lanes separated by landscaped median

Existing Turn Lane

- Continuous central turn lane used to access left side driveways

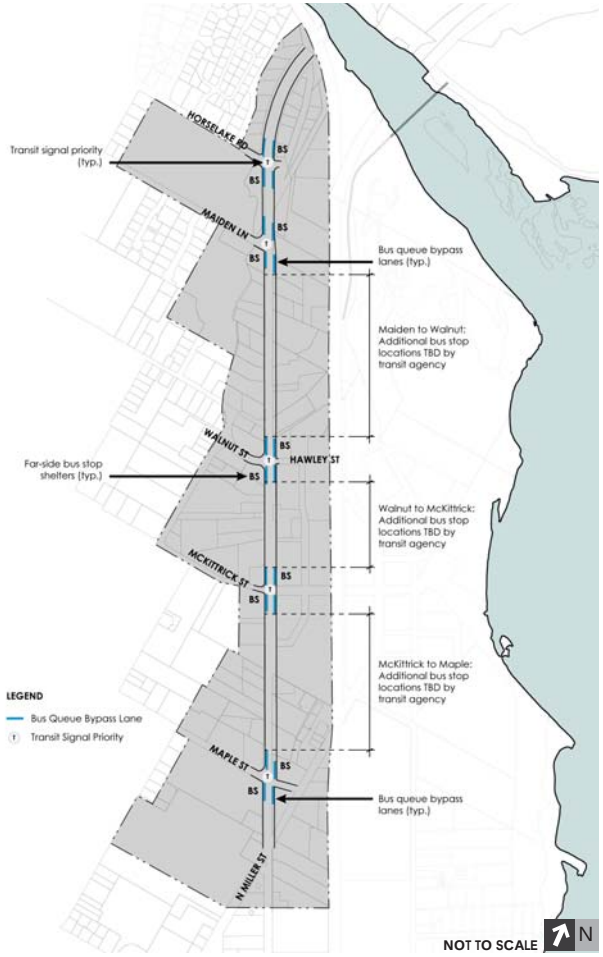
Proposed - Left Turn/U-Turn Pocket (yellow/red)

- Turn pocket in median at designated laocations for left turns/u-turns
- Turn pockets ar major intersections

ROADWAY DESIGN CONCEPTS

3. TRANSIT CONCEPT

Major intersections will have "far-side" bus stop shelters (BS). In these locations, bus queue bypass lanes will be provided as well as priority signals to facilitate transit mobility and avoid or lessen congestion at major intersections.



Existing Roadway with Bus

- No dedicated bus facility
- Bus runs in roadway with traffic

Proposed Transit Facility (blue)

- Dedicated queue jump bypass lanes at major intersections
- Transit signal prioritization at intersections
- Bus runs with traffic between intersections/stops

Existing Bus Stop

- 3 sheltered bus stops out of 8 total stops
- Located at various midblock locations

Proposed Bus Stop (BS)

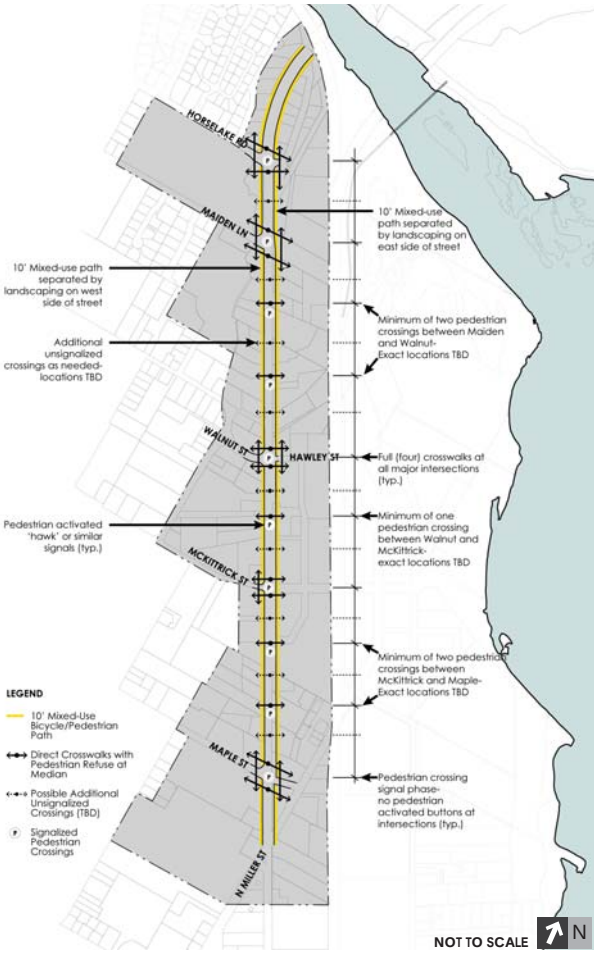
- Sheltered bus stops + bike racks at every major intersection
- Additional midblock bus stops TBD by transit agency

ROADWAY DESIGN CONCEPTS

4. PEDESTRIAN CONCEPT

In addition to continuous MUPs and direct crosswalks at intersections, pedestrians will also have access to signalized and non-signalized crossings between major intersections.

The improved pedestrian facilities will provide direct, convenient, and safe access to businesses and transit stops along the corridor as well as more frequent crossing opportunities.



Existing Pedestrian Crossings

- Incomplete crosswalks at intersections
- Long distance between pedestrian crossings

Proposed Improvements - Crossings (⟷)

- Complete, direct crosswalks at all intersections
- Midblock pedestrian crossings with and without pedestrian activated 'hawk' signal
- Pedestrian refuge at landscaped median

Existing Pedestrian Facility

- Narrow 5' wide sidewalks
- Frequent sidewalk interruptions and curb cuts
- No buffer between pedestrian and auto traffic
- No parking buffer
- Roadway lighting only

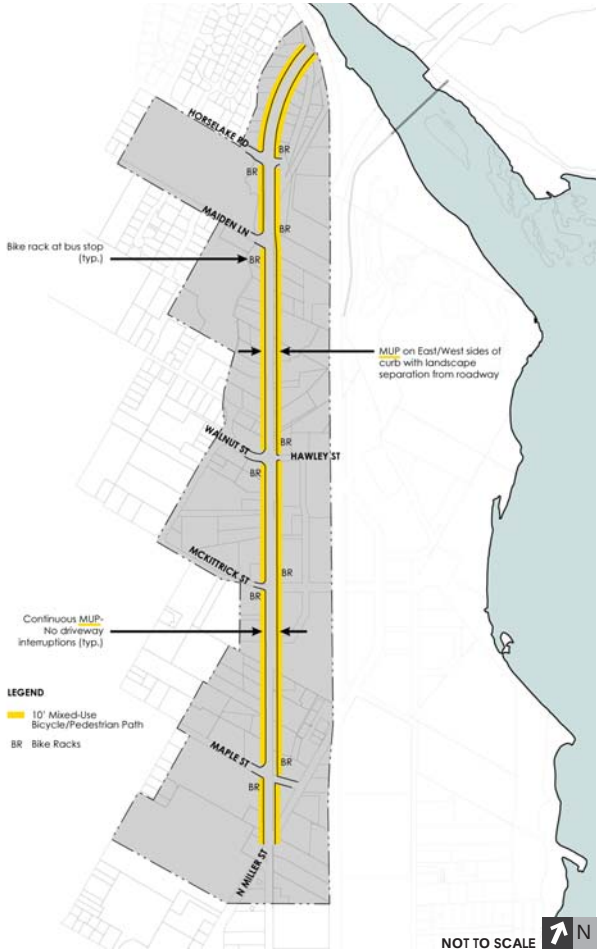
Proposed Improvements - MUP (yellow)

- 10' wide mixed use path (pedestrian + bicycle)
- Landscape buffer on both sides of path
- Minimized driveway curb cuts
- Pedestrian scale lighting

ROADWAY DESIGN CONCEPTS

5. BICYCLE CONCEPT

Bicyclists will have access to MUPs, separate from auto traffic, for the full length of the project area to provide direct, convenient, and safe access to businesses and transit stops along the corridor. Bike racks (BR) will be provided at major intersections to improve transit accessibility.



Existing

- No bicycle facility
- Bicyclists ride on sidewalks or in roadway

Proposed Improvements - MUP (yellow)

- Protected multi-use path for bicycles and pedestrians on each side of Wenatchee Ave

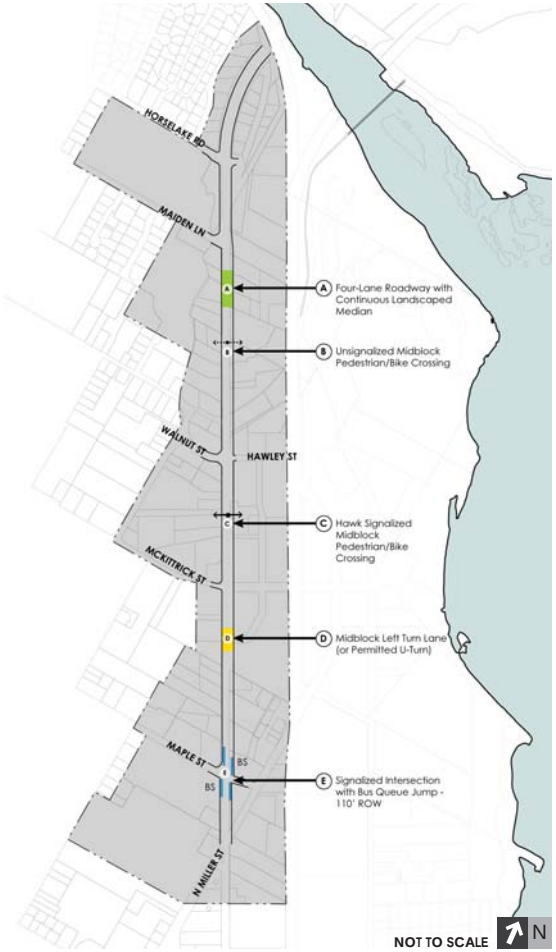
Proposed Improvements - Bike Racks (BR)

- Bike racks provided at intersections/bus stop locations
- Bike racks at other major destinations (TBD)

ROADWAY DESIGN ELEMENTS

CORRIDOR DETAILS - TYPICAL STREET CONDITIONS

There are five typical street conditions that occur at various locations along the corridor. These conditions are introduced in the key plan and thumbnails below, and are shown in detail on the following pages.



A: Four Lane Roadway with Continuous Landscaped Median

Base roadway condition, occuring in areas where there are no intersections, crossings, or turn pockets.

B: Unsignalized Midblock Pedestrian/Bike Crossing

Allows peds and bikes to cross the roadway and rest at the median refuge area while oncoming traffic yields.

C: Hawk Signalized Midblock Pedestrian/Bike Crossing

Provides peds and bikes with a push-button signal alerting auto traffic to stop for their safe crossing.

D: Midblock Left-Turn/U-Turn Lane

Landscaped median becomes turn lane for driveway access and/or u-turns.

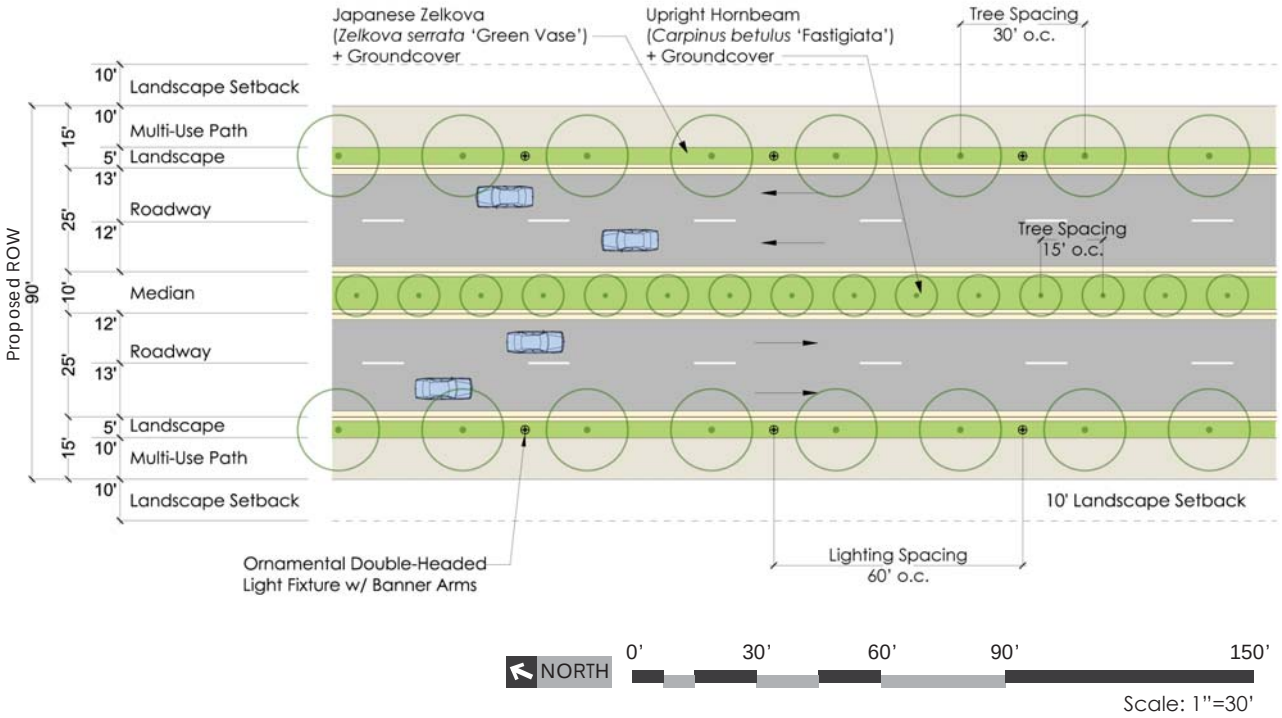
E: Signalized Intersection with Bus Queue Jump

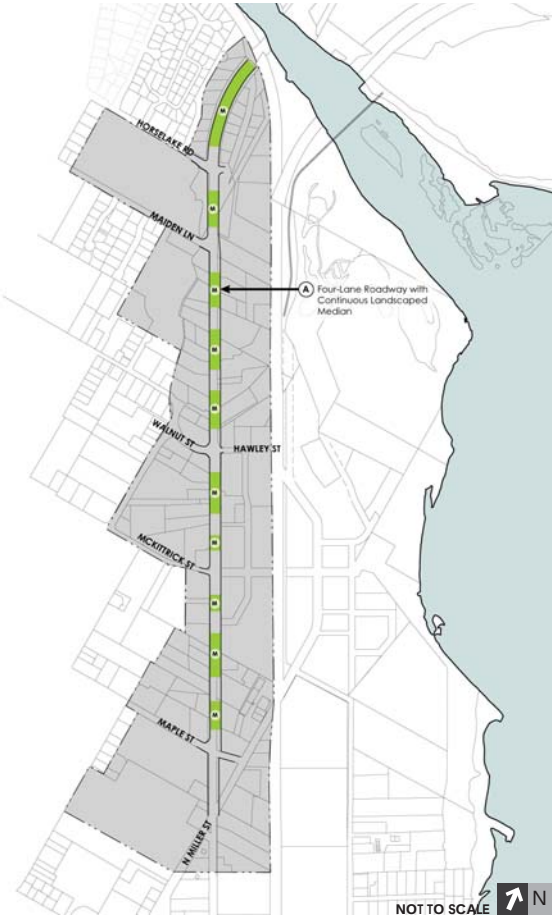
Expanded ROW allows for bus queue jump bypass lane and bus stop shelters for riders.

TYPICAL ROADWAY SEGMENTS

(A) Four-Lane Roadway with Continuous Landscaped Median - 90' ROW

Base roadway condition, occuring in areas where there are no intersections, crossings, or turn pockets.





Key Plan

The base roadway condition at a width of 90 feet includes four travel lanes at 12'-13'. Separating directional traffic is a landscaped median at 10 feet in width, planted with Japanese Zelkova trees (*Zelkova serrata* 'Green Vase') and groundcover providing shade and softening the surrounding hardscape.

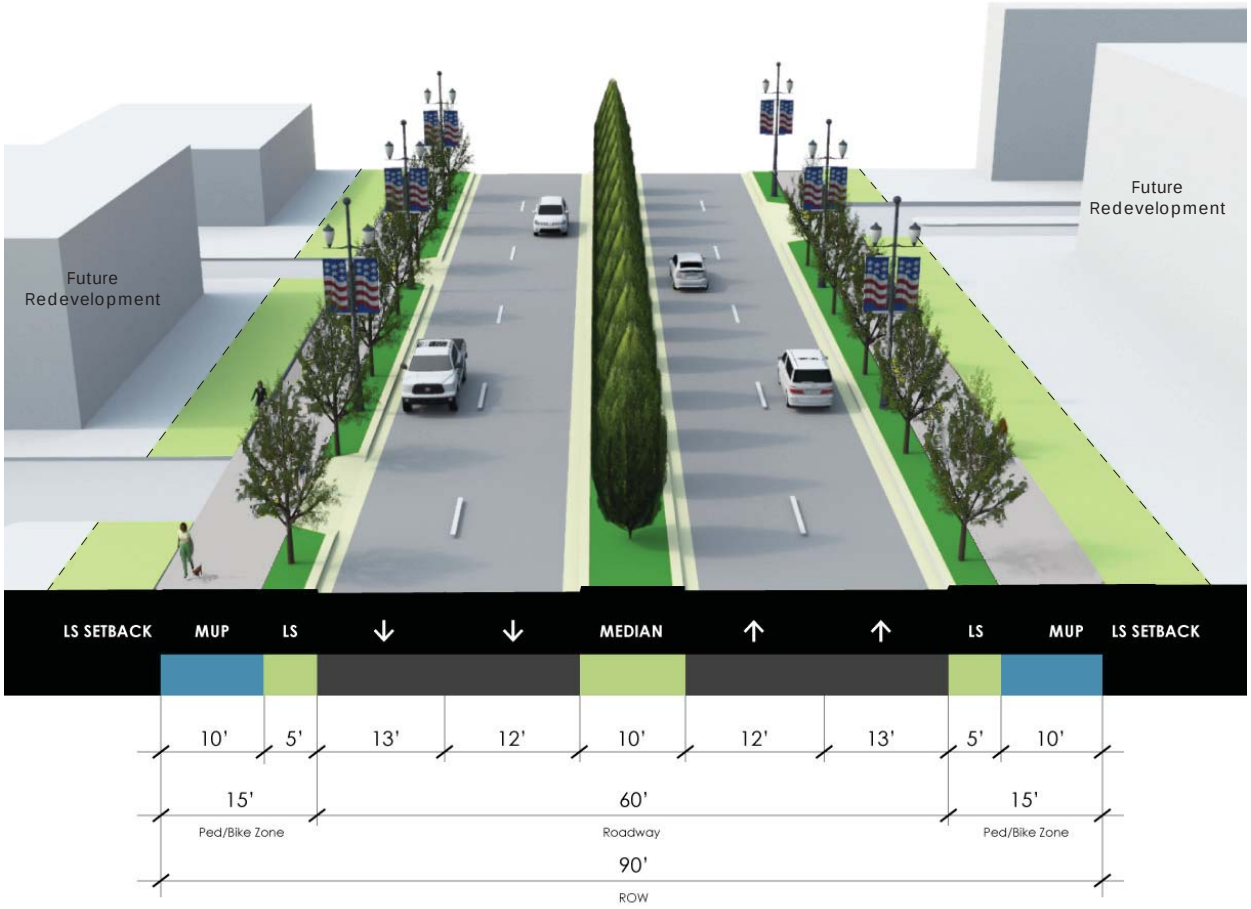
Landscape zones separate the vehicular travel lanes from the multi-use paths on eitherside of the roadway. These landscape strips are planted with Upright Zelkova Canopy trees and groundcover provding a safe separated area for pedestrians and bicycles. Additionally the canopy trees ehance the street character and sense of enclosure while providing shade and rainwater diversion. The landscape zone is where other furnishings such as street signage and light fixtures are placed. The ornamental double-headed light fixtures shown provide lighting to both the multi-use path and the roadway. Complete with banner arms, the oranmental fixtures contribute to the improved aesthetic of the corridor.

The 10-foot wide asphalt multi-use path (MUP) is bi-directional and marked with two lanes to be shared by pedestrians and bicycles.

TYPICAL ROADWAY SEGMENTS

(A) Four-Lane Roadway with Continuous Landscaped Median - 90' ROW

Base roadway condition, occuring in areas where there are no intersections, crossings, or turn pockets.



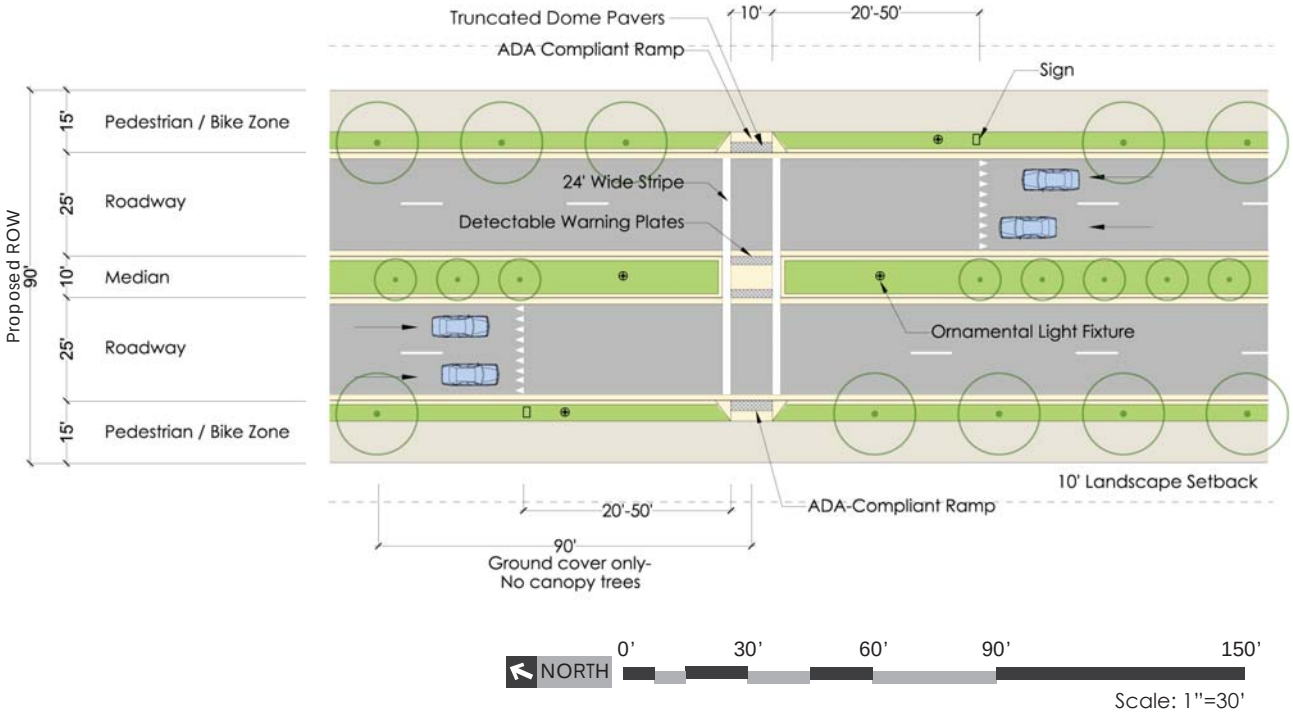
EXAMPLE: Landscaped Median
[Image: http://depts.washington.edu/hhwb/Thm_SafeStreets.html]

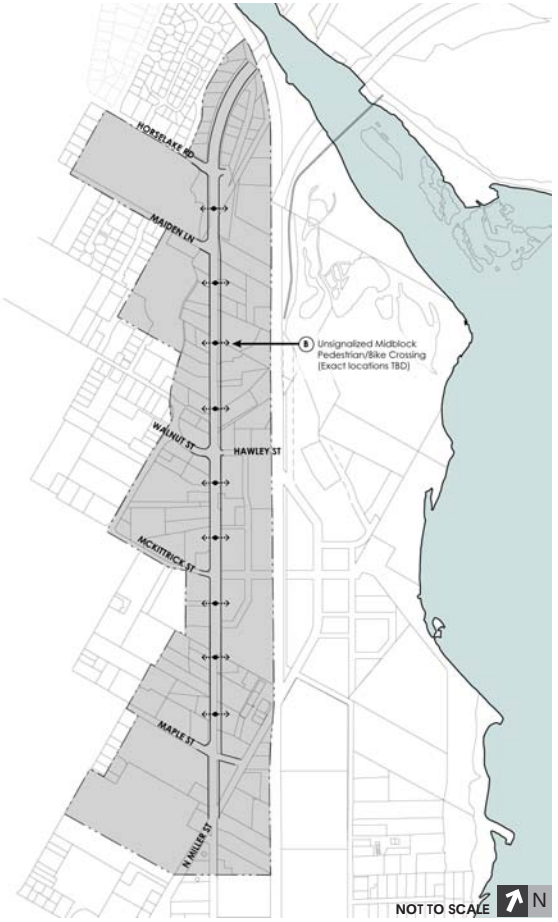
PROPOSED: Typical Streetview

TYPICAL ROADWAY SEGMENTS

(B) Unsignalized Midblock Pedestrian/Bike Crossing

Allows peds and bikes to cross the roadway between signalized intersections. The median refuse area lets those crossing wait safely while oncoming traffic yields.





Key Plan

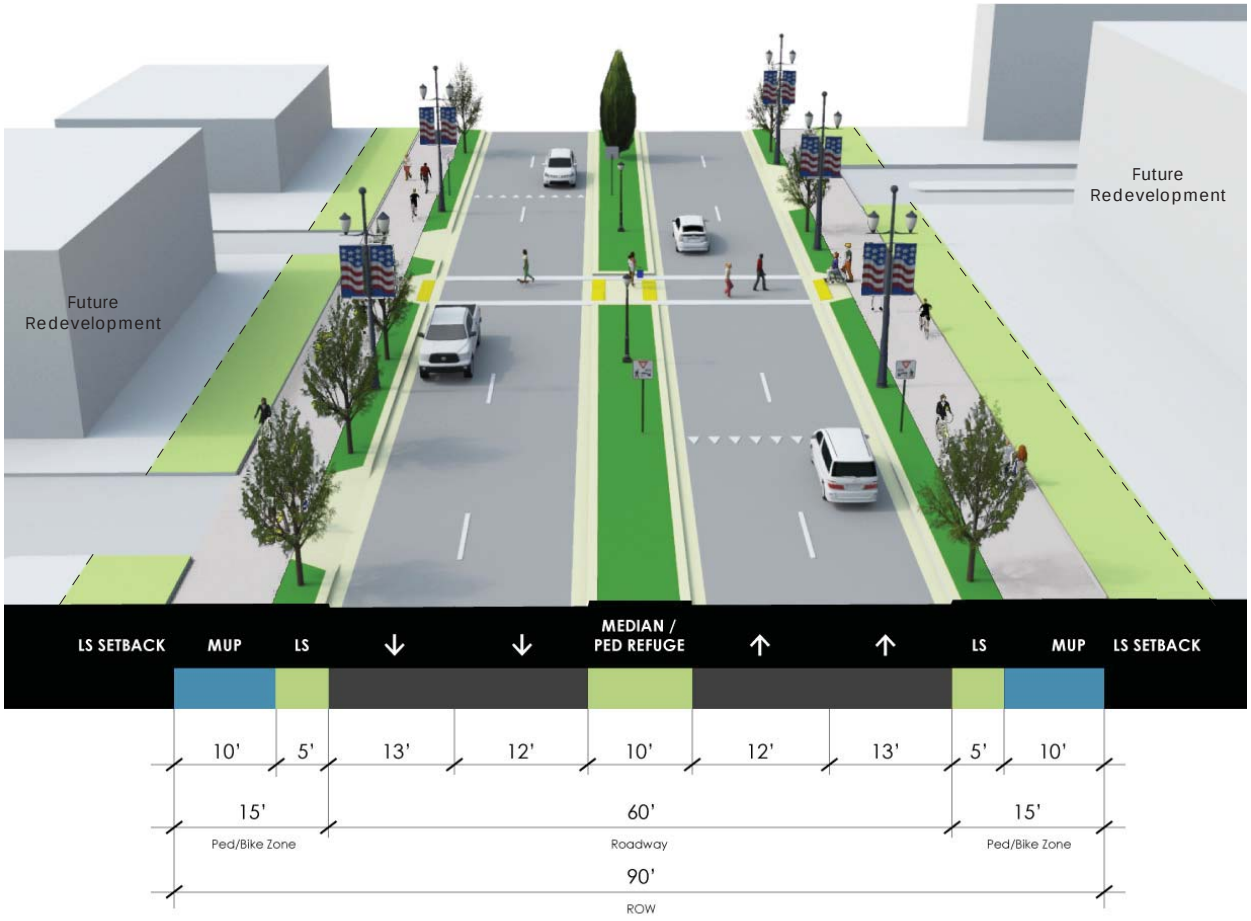
Between intersections, pedestrians and bikes have the opportunity to cross the roadway from MUP to MUP. At these select locations (TBD), oncoming traffic will yield at the sawtooth line as indicated by the crossing signs on either side of the roadway.
For the safety of pedestrians, the median may be used as a refuge midway through crossing. The crossing is marked with a single 24 inch wide stripe along each side as well as detectable warning plates (truncated dome pavers) and pedestrian scale light fixtures.

Note: This type of uncontrolled crossing is not recommended by Transportation Consultants, Fehr & Peers for its lack of compliance with FHWA guidance on crosswalk safety. Due to the conditions of N. Wenatchee Ave, a multilane corridor with a speed limit for 35 mph and average daily trips over 40,000, marked crosswalks alone are insufficient and may increase pedestrian crash risk. Pedestrian Hybrid Beacons (HAWK Signals) would be the preferred option for all midblock crossing locations (see page 24-25)

TYPICAL ROADWAY SEGMENTS

(B) Unsignalized Midblock Pedestrian/Bike Crossing

Allows peds and bikes to cross the roadway between signalized intersections. The median refuse area lets those crossing wait safely while oncoming traffic yields.



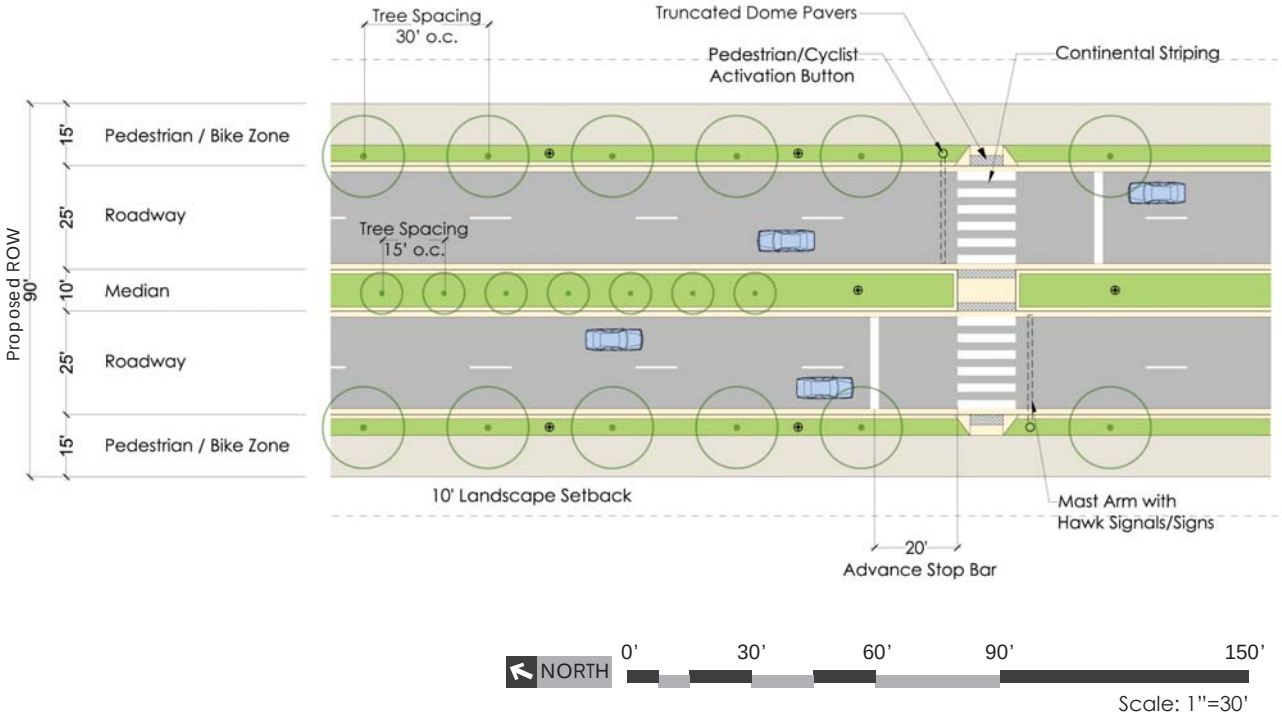
EXAMPLE: Pedestrian Crossing with Refuge. Palo Alto, CA
[image: Janet L.]

PROPOSED: Streetview at Pedestrian Crossing

TYPICAL ROADWAY SEGMENTS

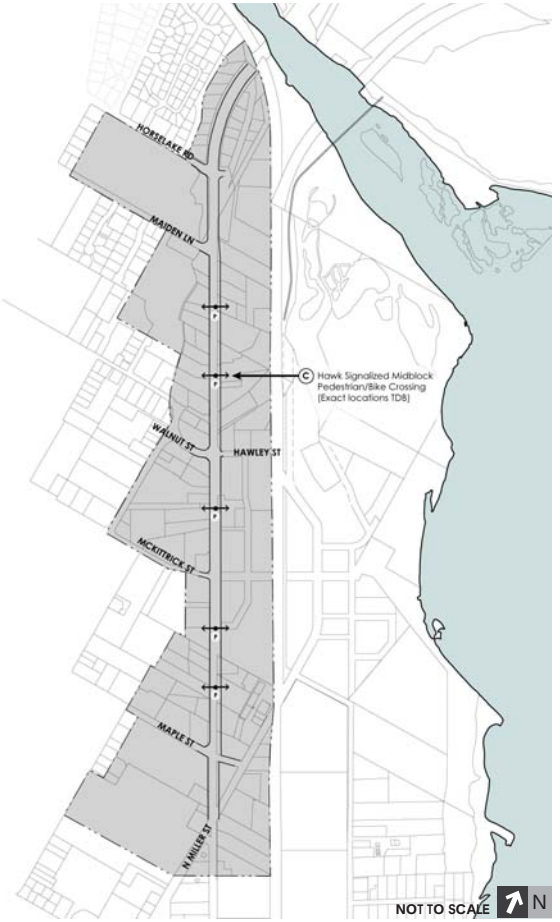
Ⓒ HAWK Signalized Midblock Pedestrian/Bike Crossing

Provides peds and bikes with a push-button signal alerting auto traffic to stop for their safe crossing.



Another type of crossing occuring between signalized intersections is the HAWK (High Intensity Activated CrossWalK). At these select locations (TBD), pedestrians and bicycles have the opportunity to cross the roadway from one MUP to the other by way of a striped crosswalk. At these locations, the pedestrian or bicyclist activates the HAWK signal with a push button that illuminates a flashing beacon over the roadway to stop oncoming traffic allowing their safe crossing.

The crossing is marked with continental striping for its entire length as well as detectable warning plates (truncated dome pavers) and pedestrian scale light fixtures.

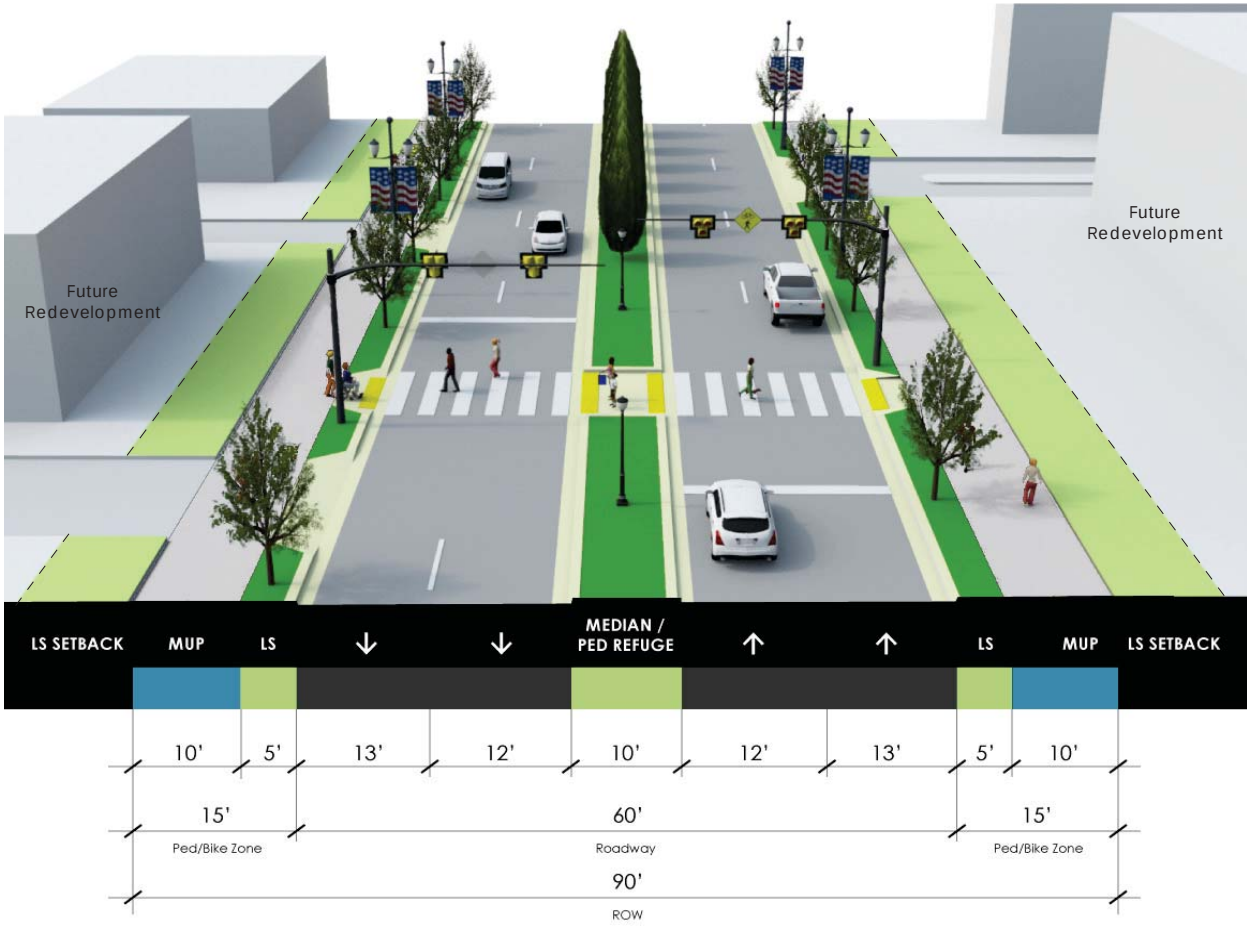


Key Plan

TYPICAL ROADWAY SEGMENTS

Ⓒ Hawk Signalized Midblock Pedestrian/Bike Crossing

Provides peds and bikes with a push-button signal alerting auto traffic to stop for their safe crossing.



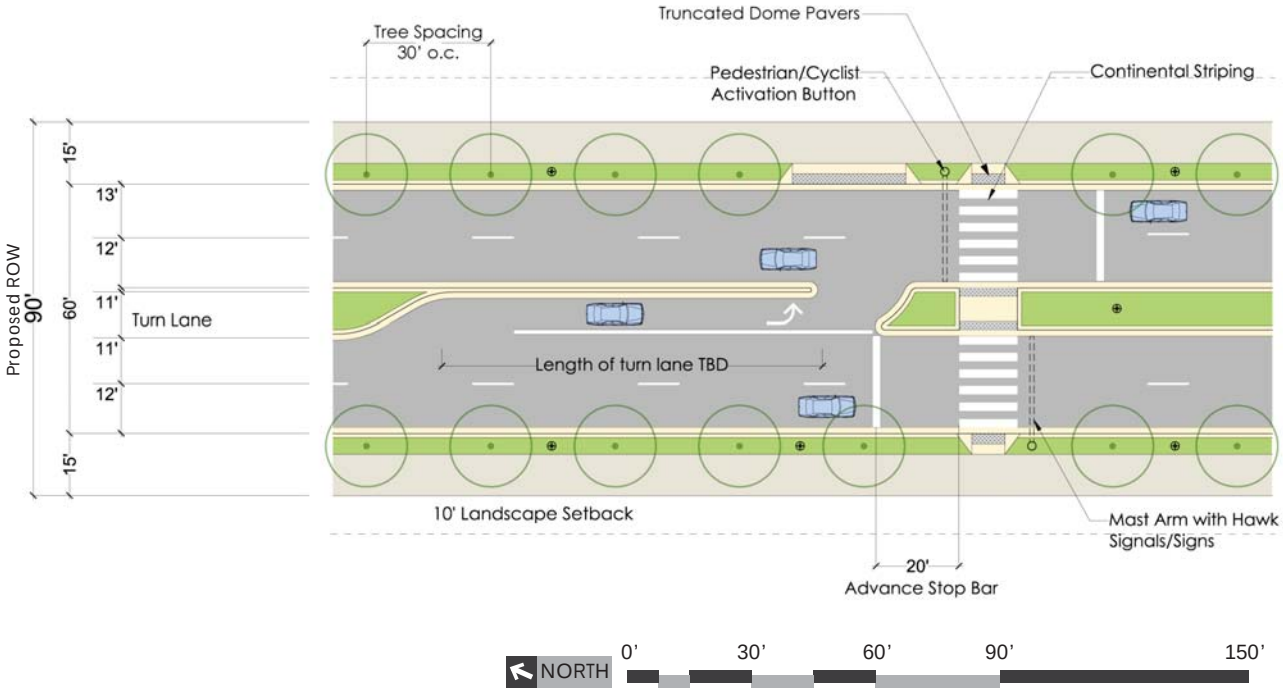
EXAMPLE: Hawk Crossing. Phoenix, AZ
[image: Federal Highway Administration, Mike Cynecki]

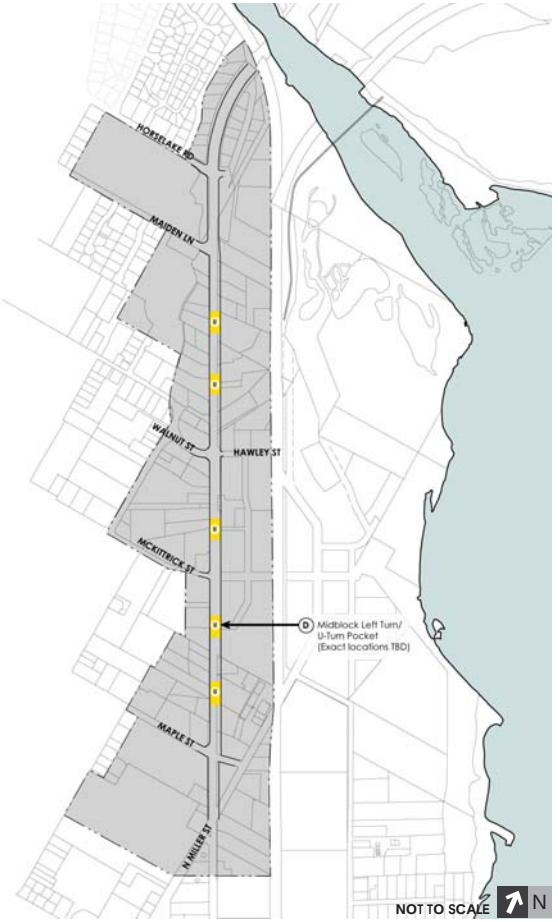
PROPOSED: Streetview at Hawk Crossing

TYPICAL ROADWAY SEGMENTS

(D) Midblock Left Turn Pocket

Landscaped median breaks to become a turn lane for far-side driveway access and possible U-turns.





Key Plan

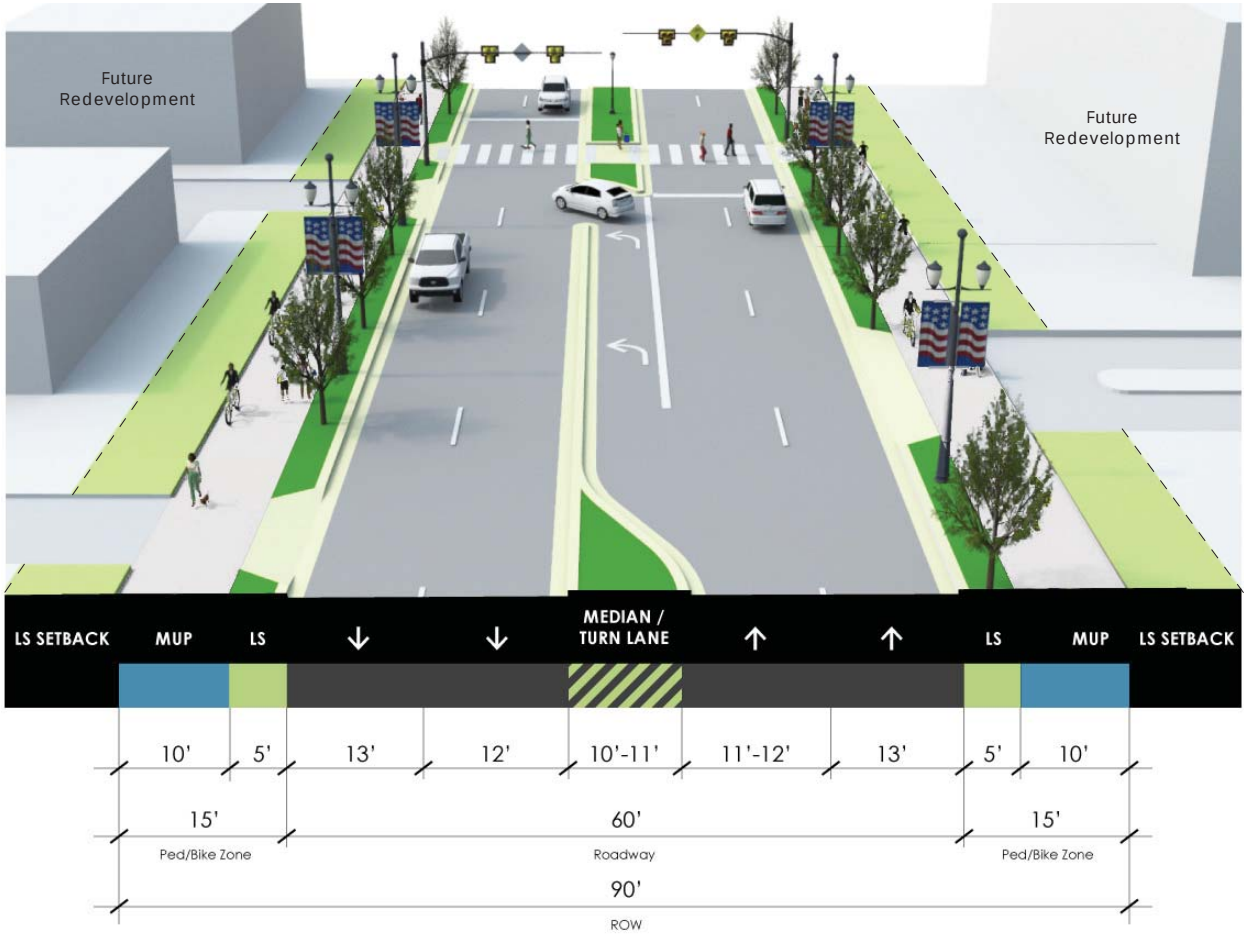
At designated areas (TBD), the median may break to allow left turns into major driveways. The turn lane in these areas is designed to accomodate the turn of a passenger vehicle. Larger trucks will be directed to major signalized intersections to make u-turns and left turns (see pages 28-31). Median turn pockets may or may not occur in the same area as pedestrian crossings as shown in the above plan.

Note: This turn pocket does not meet the WSDOT design standards for a complete U-turn which requires a clearance of 52 feet where the above design provides 36 feet. See page 26 for an alternative roadway plan for U-turns meeting WSDOT standards.

TYPICAL ROADWAY SEGMENTS

(D) Midblock Left Turn Lane

Landscaped median breaks to become a turn lane for far-side driveway access and/or u-turns.



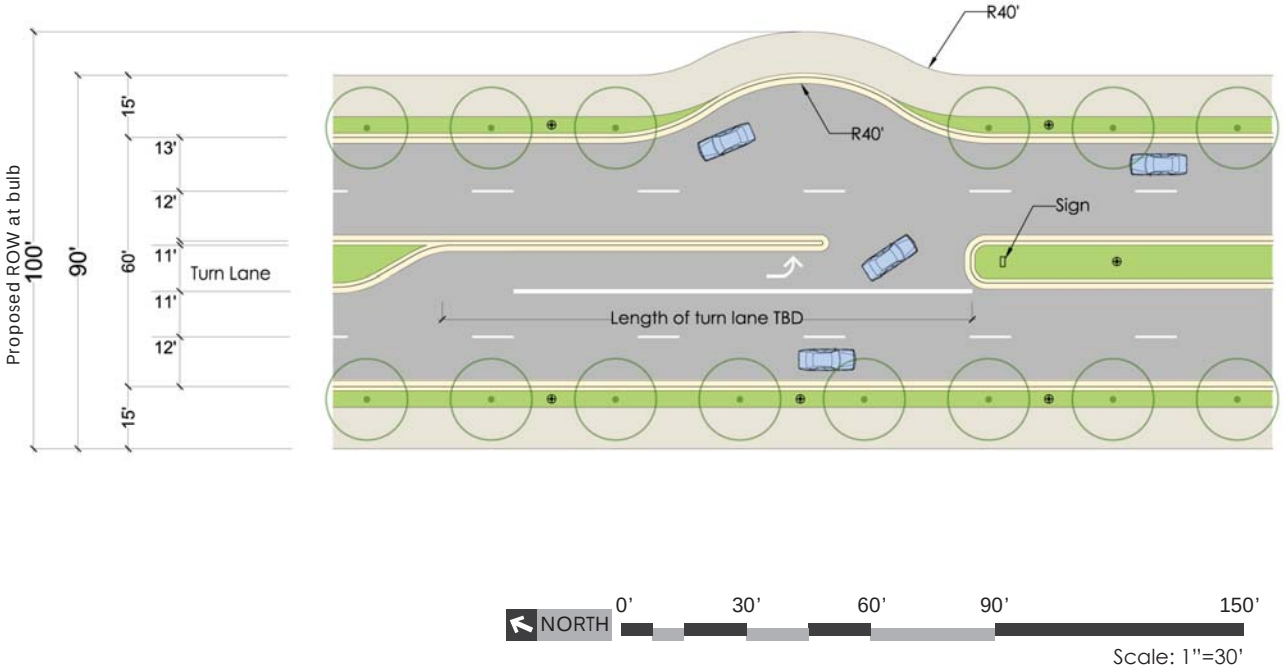
EXAMPLE: U-Turn Median Pocket. Seattle, WA (above two)
[image: Federal Highway Administration]

PROPOSED: Streetview at U-Turn Pocket

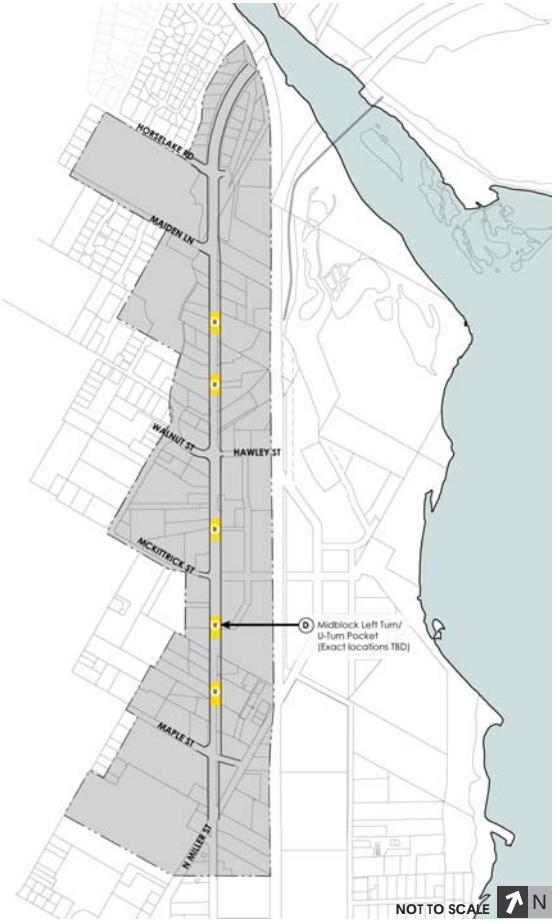
TYPICAL ROADWAY SEGMENTS

(D) Midblock U-Turn Pocket

Landscaped median breaks to become a U-turn pocket. Far-side MUP and curb flex to accomodate.



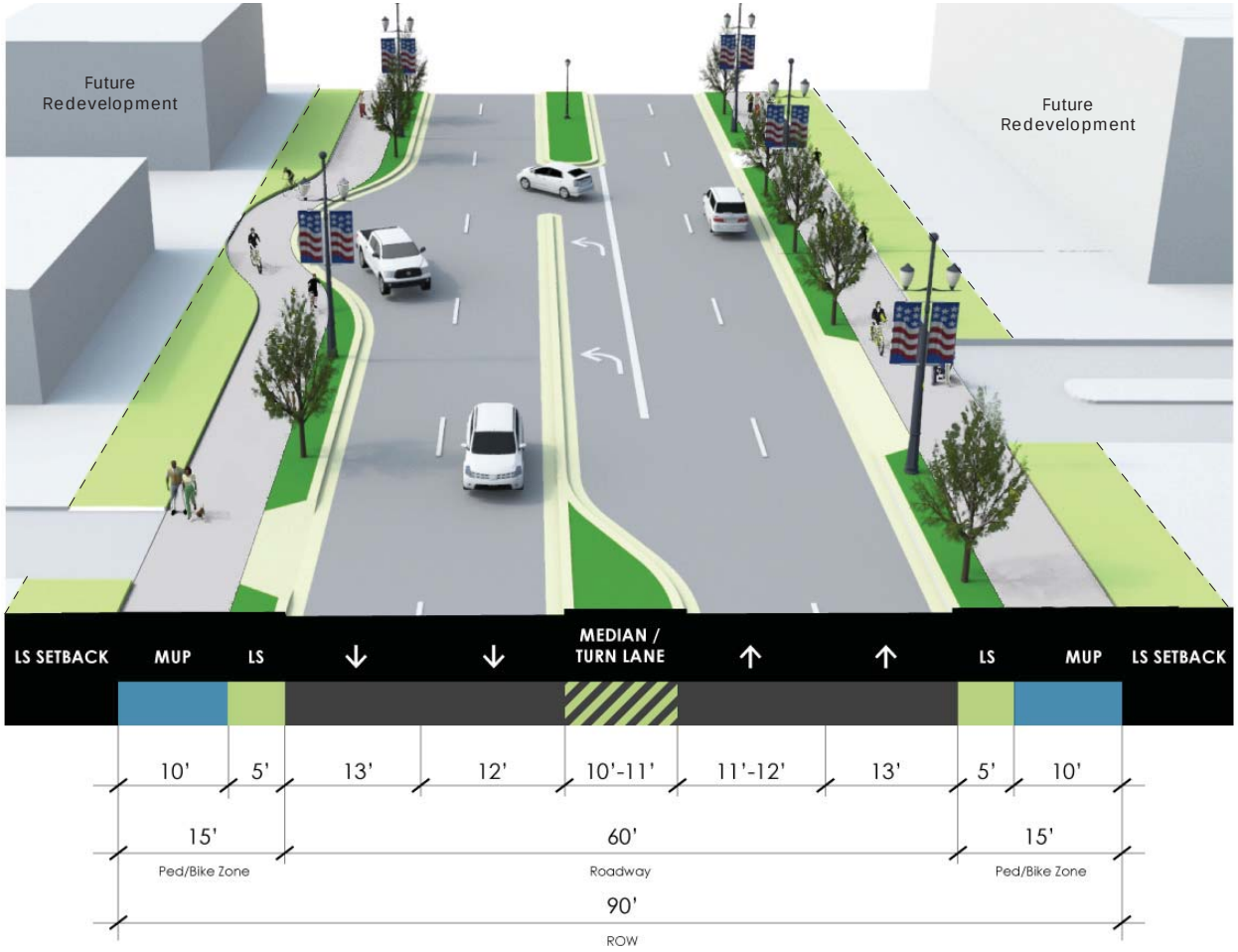
At designated areas (TBD), the median may break to allow U-turns. At these locations, the farside MUP and curb will also shift 10' creating a bulb to accomodate the full U-turn of a passenger vehicle per WSDOT standards. Larger vehicles and trucks will be directed to major signalized intersections to make U-turns and left turns (see pages 28-31).



Key Plan

TYPICAL ROADWAY SEGMENTS

Ⓓ Midblock Left Turn Lane



EXAMPLE: U-Turn Median Pocket. Seattle, WA (above two)
[image: Federal Highway Administration]

PROPOSED: Streetview at U-Turn Pocket

TYPICAL ROADWAY SEGMENTS

(E) Signalized Intersection with Bus Queue Jump - 110' ROW (No U-turn Bulbs)

Expanded ROW at major intersections allows for bus queue jump bypass lane, bus stop shelters for riders, and turn pockets.

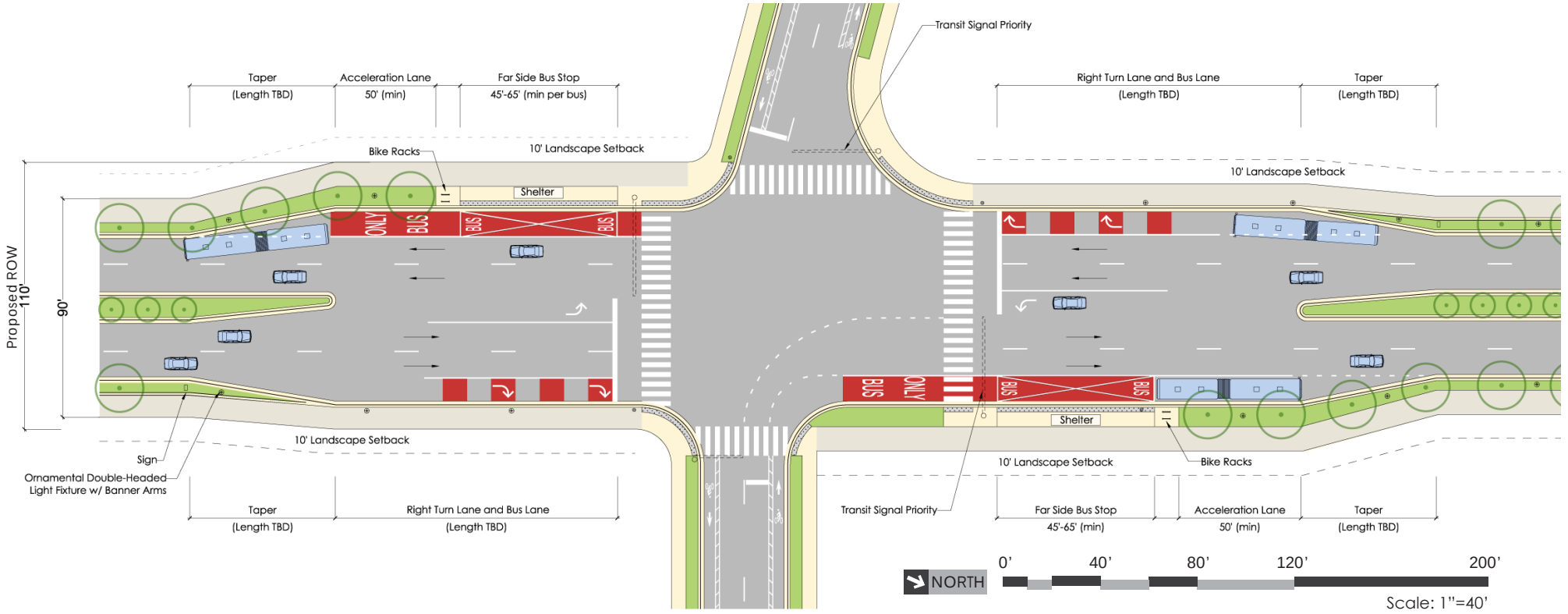
Major intersections are carefully planned to accomodate mobility, safety, and efficiency of all modes. Expanding the ROW an additional ten feet on either side of the proposed 90' typical ROW will ensure adequate space for the following (from outside-in):

- Two MUPs (each side of street)
- Far-side bus stop with shelter and seating
- Bus queue jump bypass lane (with signal priority)
- Four travel lanes
- Left and right turn pockets

Bus Queue Jump Bypass Lane:
Red paint marks bus zones on both sides of the traffic light. On the nearside of the intersection, this lane is shared with general traffic as a right turn lane. With priority signal, buses can advance through the intersection to the BUS ONLY pick-up zone and bus stop on the farside where the bus will out of general traffic to avoid congestion.

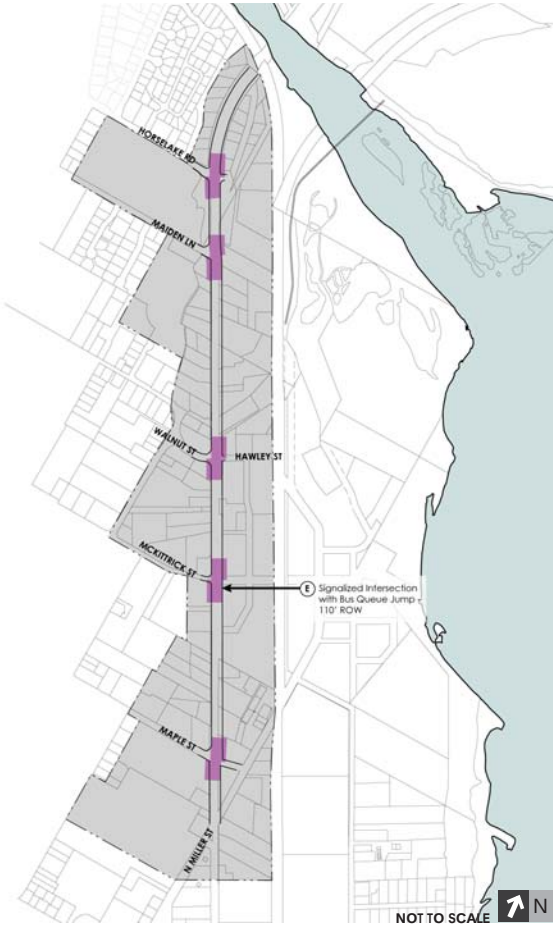
Additionally, all major intersections will have complete crosswalks for pedestrians and bicycles.

Note: Though U-turns may be permitted, this design does not meet the WSDOT standards for U-turn of a passenger vehicle, requiring a clearance of 52 feet where the design below provides 47 feet. See page 30 for an intersection design which meets WSDOT U-turn standards.

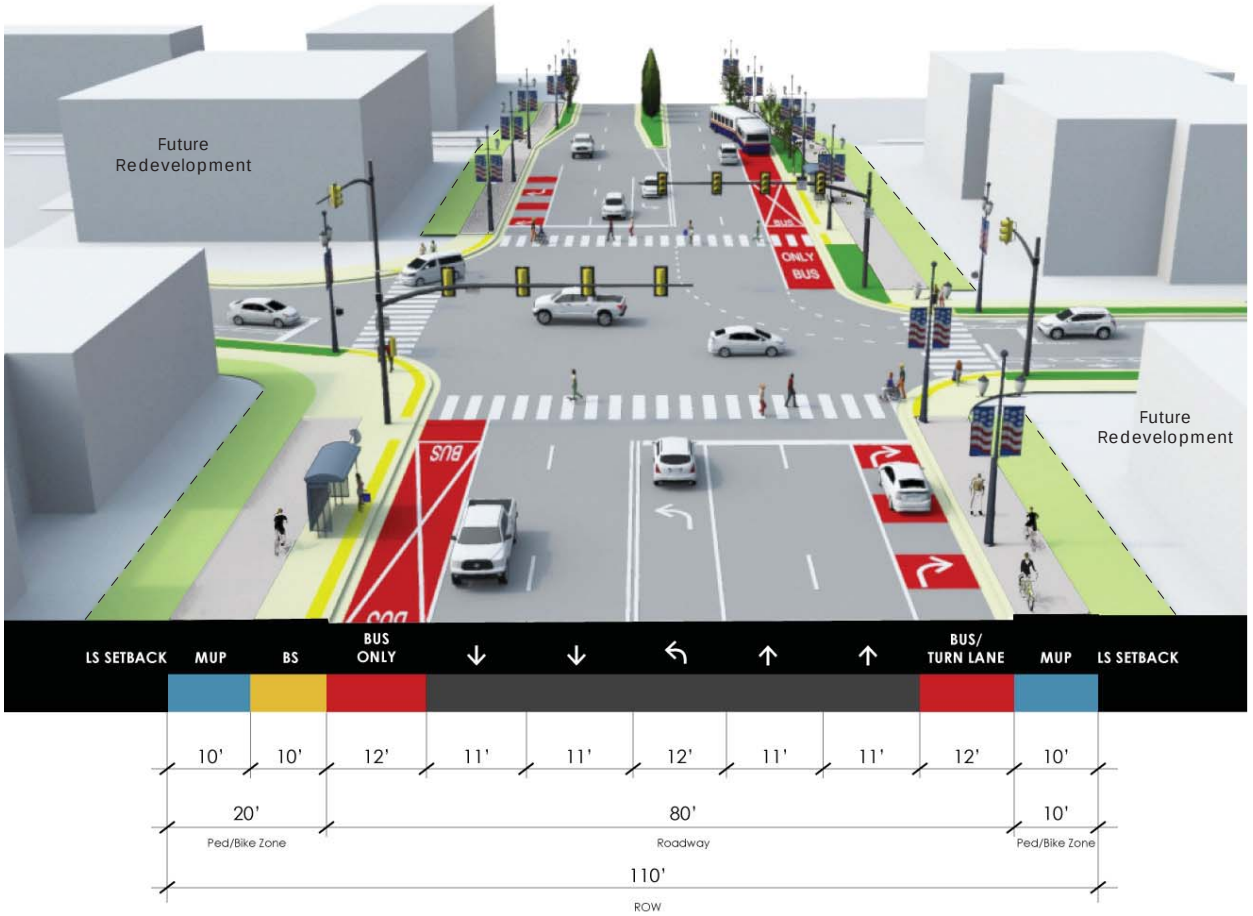


TYPICAL ROADWAY SEGMENTS

(E) Signalized Intersection with Bus Queue Jump - 110' ROW



Key Plan



TYPICAL ROADWAY SEGMENTS

(E) Signalized Intersection with Bus Queue Jump - 110' ROW (with U-turn Bulbs)

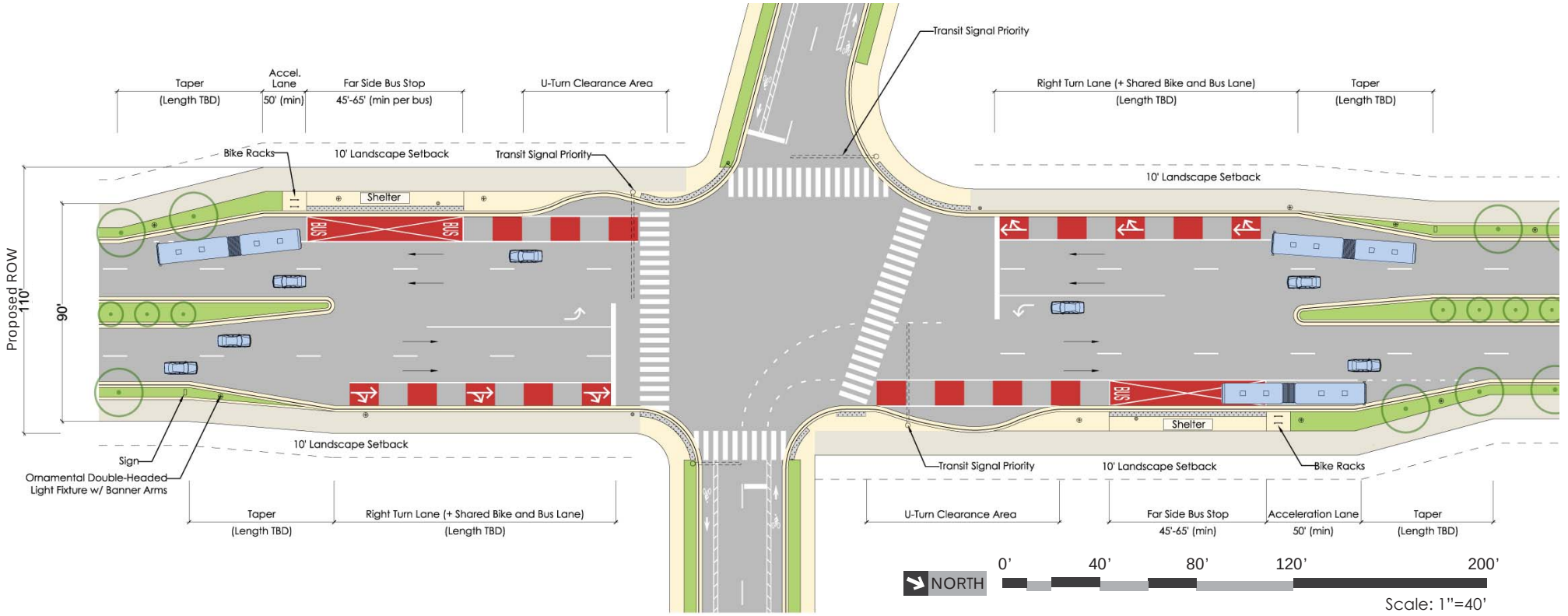
Expanded ROW at major intersections allows for bus queue jump bypass lane and bus stop shelters for riders.

Major intersections are carefully planned to accomodate mobility, safety, and efficiency of all modes. Expanding the ROW an additional ten feet on either side of the proposed 90' typical ROW will ensure adequate space for the following (from outside-in):

- Two MUPs (each side of street)
- Far-side bus stop with shelter and seating
- Bus queue jump bypass lane (with signal priority)
- Four travel lanes + U-turn bulb
- Left and right turn pockets

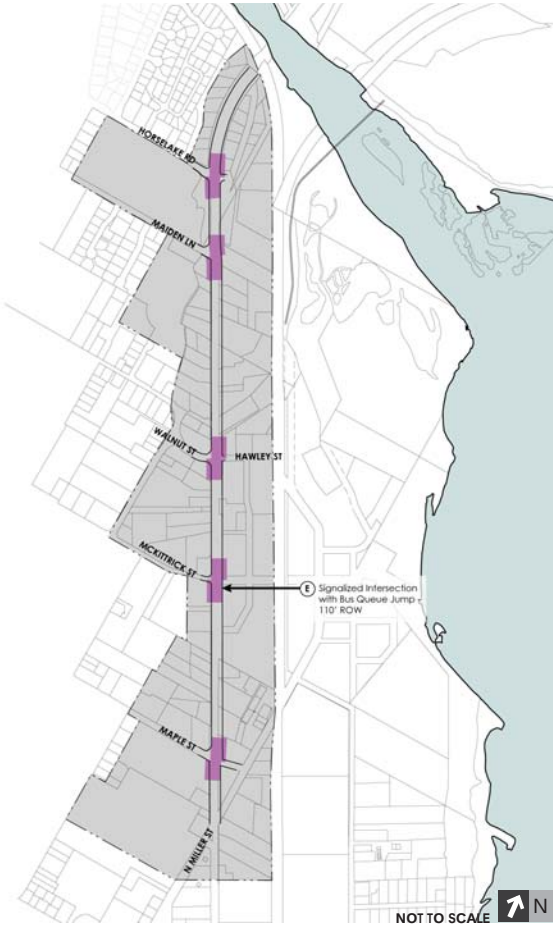
Bus Queue Jump Bypass Lane:
Red paint marks bus zones on both sides of the traffic light. On the nearside of the intersection, this lane is shared with general traffic as a right turn lane. With priority signal, buses can advance through the intersection to the BUS ONLY pick-up zone and bus stop on the farside where the bus will out of general traffic to avoid congestion.

Additionally, all major intersections will have complete crosswalks for pedestrians and bicycles. U-turns by passenger vehicles are permitted at these intersections and meet WSDOT standards. Larger trucks will be directed to roundabouts to the north and south of the project area to make desired turnarounds.

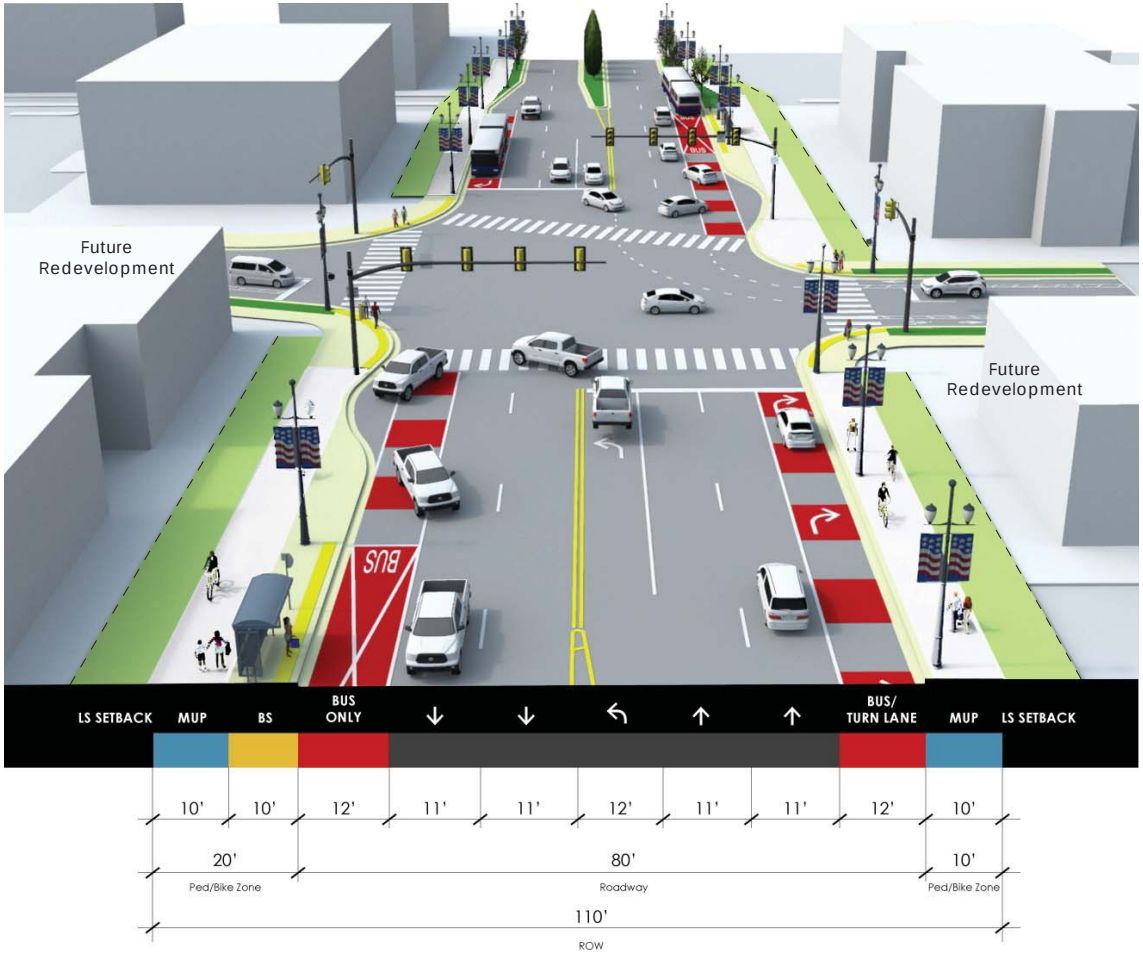


TYPICAL ROADWAY SEGMENTS

(E) Signalized Intersection with Bus Queue Jump - 110' ROW



Key Plan



FRONTAGE DEVELOPMENT

Existing Land Use

The corridor is dominated by auto-oriented commercial uses, occuring on parcels of various sizes fronting N. Wenatchee Ave.

Commercial Office & Retail

The existing corridor is comprised mainly of various scales of retail and "big box" stores, drive-thru restaurants, commerical services, and hotels. These uses promote an auto-dominant commercial corridor where buildings are set back far from the street with large parking lots in front and an abundance of driveway/entry points.

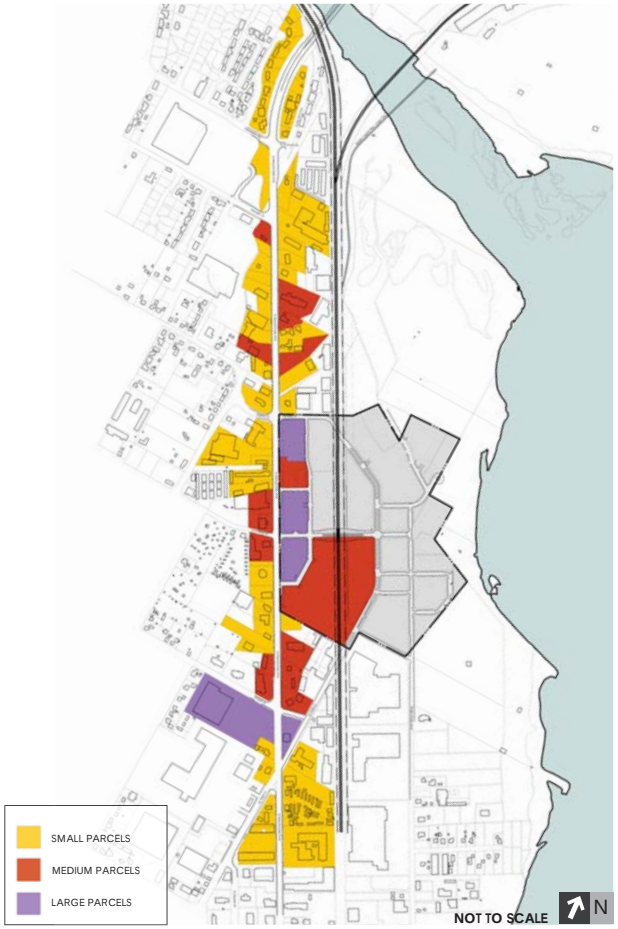
Frontage Length

With the large range of parcel sizes along this corridor, some lots may have more or less of a presence on the street. The proposed development guidelines are intended to benefit any size of parcel and allow for incremental improvements lot by lot throughout the corridor. The frontage length is used to categorize the parcels as small, medium, and large, determining appropriate setback treatment.

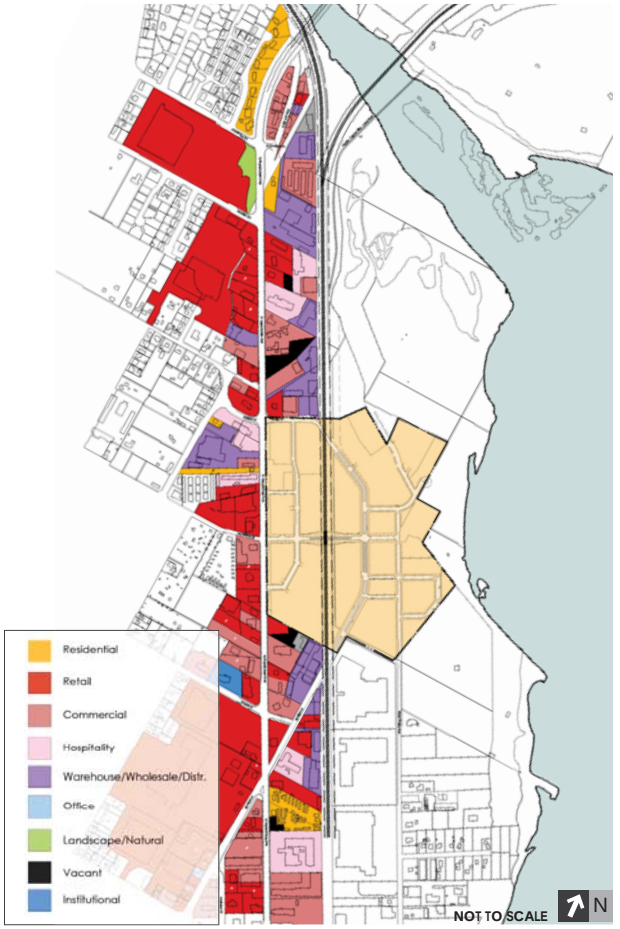
SMALL PARCELS:
<200 ft wide

MEDIUM PARCELS:
200-300 ft wide

LARGE PARCELS:
>300 ft wide



Wenatchee Corridor Parcel Sizes



Wenatchee Corridor Existing Land Uses

FRONTAGE DEVELOPMENT

Existing Zoning

The entire project area is within the existing zone of *North Wenatchee Business District*.

Permitted Uses

Currently within the North Wenatchee Business District, there are few restrictions on what uses are permitted, allowing nearly any type of commercial use. To promote positive growth of this corridor, it is recommended that commercial uses be limited to some degree to discourage uses that require large, open lots and industrial-sized garages. These less desirable uses may be changed from "permitted use" to "conditional use" in the future.

Development Standards

Proposed development guidelines address a number of design considerations in efforts to:

- Improve gateway experience into Wenatchee
- Discourage auto-dominance / improve walkability & bikability
- Encourage landscaping and greenery for comfort and aethetics

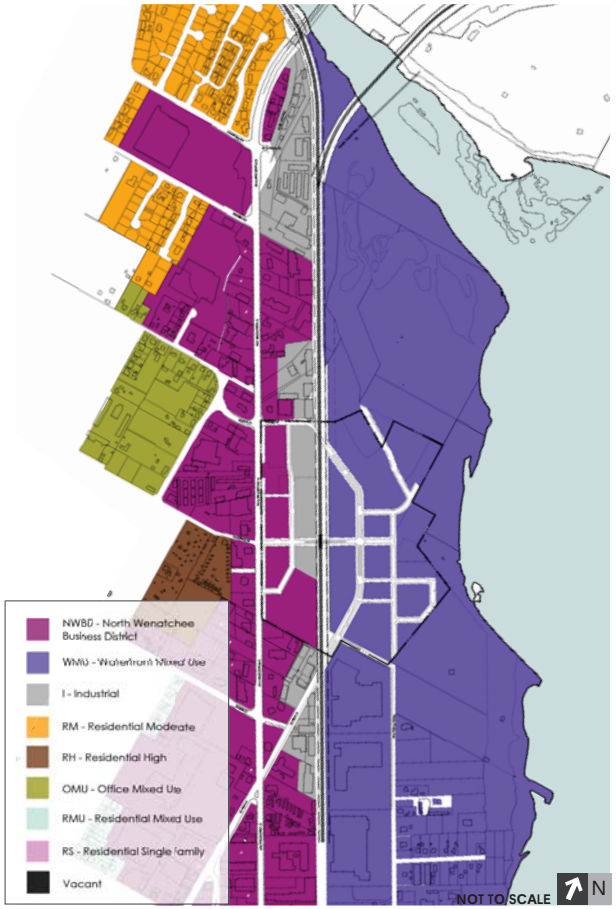
This proposal specifically addresses the treatment of frontage development and front setbacks along N. Wenatchee Avenue. The design elements in consideration include:

- Landscape Setback
- Build-to Line
- Parking Setback
- Driveway Spacing

Side and rear setbacks are not impacted by the proposed guidelines.

EXISTING: Business District Character

EXISTING: Business District Character



Wenatchee Zoning Code Map (existing)

FRONTAGE DEVELOPMENT CRITERIA

Design Elements

Measurable qualities of frontage parcels

Landscape Setback

The space between the sidewalk's edge and the building face is primarily paved and/or used for parking on Wenatchee properties today. It is recommended that this setback area instead be used for landscaping, outdoor seating, or other gathering areas.

EXISTING: Paved Setback / Parking Lot at Sidewalk Edge

EXAMPLE: Landscaped Setback

Build-To Line

Currently with no build-to line requirement, buildings and storefronts are often set very far back from the street, typically prioritizing parking in the front of the lot. This approach is not pedestrian-friendly, nor is it beneficial for businesses. Benefits of enforcing a build-to line include:

- Improved pedestrian and bicycle access from street
- Less auto-dominance
- Encouraged pedestrian/bicycle travel
- More continuity/uniformity along corridor
- Improved character/aesthetic of the area

EXISTING: No Build-to Line Requirement

EXAMPLE: Build-to Line, Side Parking, Front Door Facing Street

FRONTAGE DEVELOPMENT CRITERIA

Design Elements

Measurable qualities of frontage parcels

Parking Setback

Throughout the corridor, the sidewalk is met with parking lots. This creates an unfavorable pedestrian environment-- one that is narrowly squeezed between moving traffic and parked cars. To improve the pedestrian experience, the sidewalk will become much wider, but also parking will be set back from the sidewalk's edge. Within this setback could be groundcover landscaping up to hedges and trees, a screen wall, or any of type of visual separation to soften the harsh appearance of a parking lot.

EXISTING: Auto-Dominated, Parking Meets Sidewalk

EXAMPLE: Parking Set Back from Sidewalk with Landscape Strip

Driveway Spacing

Today, thoughout this auto-oriented corridor, there are large driveways and curb cuts entering parking lots and drive-thrus nearly every step of the sidewalk. A recent study shows that along this seven-block stretch of the corridor, there are 84 sidewalk interruptions. This is not conducive to safe pedestrian and bike travel, nor is it clear to vehicles where turn-off is appropriate. By enforcing a standard spacing for driveways, conflicts will be minimized and properties will be encouraged to share entries. This will create a safer and more consistent roadway.

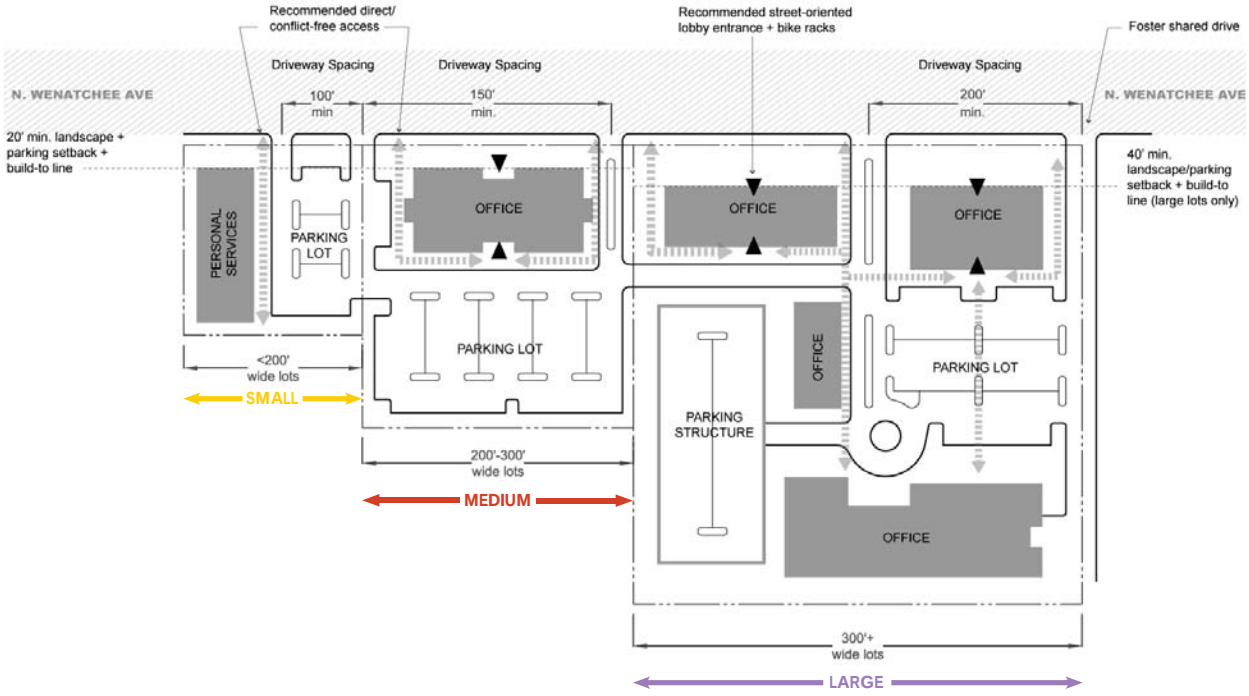
EXISTING: Auto-Dominated, Frequent Large Driveways/Curb Cuts

EXAMPLE: Combined Driveways and Parking Lots to Minimize Sidewalk Impacts

FRONTAGE DEVELOPMENT GUIDELINES

Commercial Office Use

PERMITTED USES: business offices, personal services



PLAN: Hypothetical office development under proposed guidelines [not to scale]

EXISTING: Commercial Office

TYPICAL FRONTAGE DEVELOPMENT GUIDELINES

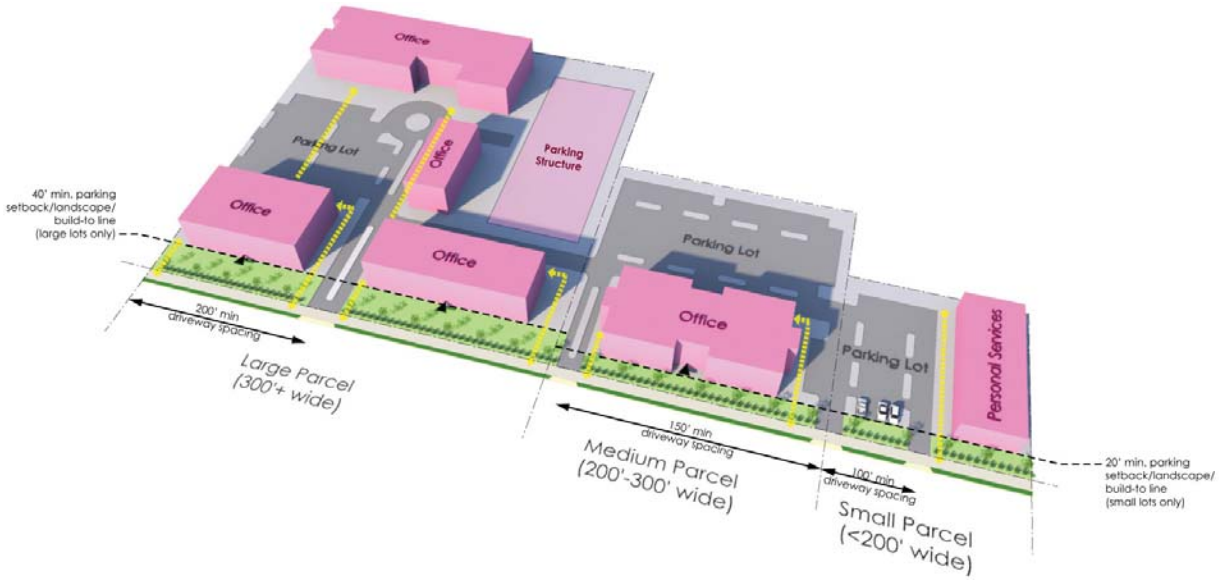
Land Use	Landscape Setback (min.)	Parking Setback (min.)	Build-To Line	Driveway Spacing (min)
COMMERCIAL OFFICE				
SMALL (<200')	20'	20'	20'	100'
MEDIUM (200'-300')	20'	20'	20'	150'

PROPOSED GUIDELINES: Recommended front setbacks for office type uses

The proposed development guidelines for office type uses are intended to

FRONTAGE DEVELOPMENT GUIDELINES

Commercial Office Uses



PROPOSED: 3D illustration of hypothetical new office development under proposed guidelines

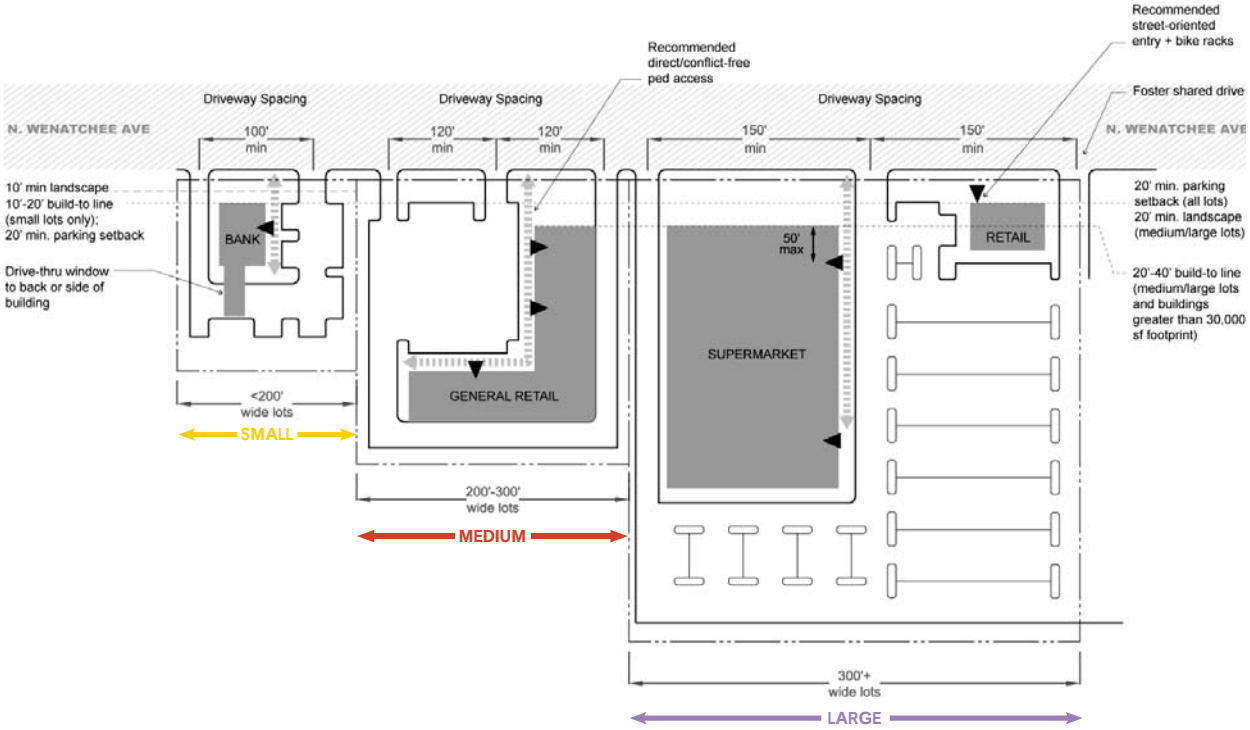
EXAMPLE: Office Built Near Sidewalk

EXAMPLE: Offices with Parking Behind

FRONTAGE DEVELOPMENT GUIDELINES

Commercial Retail Uses

PERMITTED USES: auto rental/sales, **banks** with/without drive-through, boat sales and rentals, building materials, equipment rental services, exercise facilities, farmers market, furniture/home furnishings, **general retail**, liquor stores, motor vehicle sales or supply, **neighborhood grocery**, office supplies, commerical printing, service stations, **supermarket**



PLAN: Hypothetical retail development under proposed guidelines [not to scale]

EXISTING: Commercial Retail

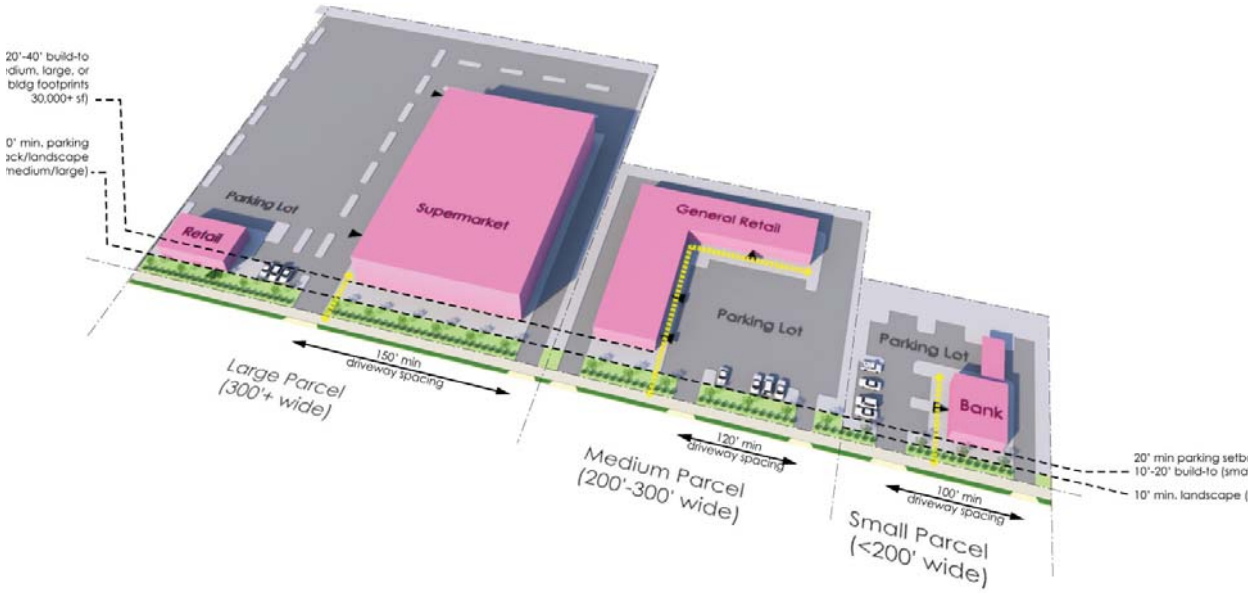
TYPICAL FRONTAGE DEVELOPMENT GUIDELINES

Land Use	Landscape Setback (min.)	Parking Setback (min.)	Build-To Line	Driveway Spacing (min)
COMMERCIAL RETAIL				
SMALL (<200')	10'	20'	10'-20'	100'
MEDIUM (200'-300')	20'	20'	20'-40'	120'
LARGE (300'+)	20'	20'	20'-40'	150'

PROPOSED GUIDELINES: Recommended front setbacks for retail type uses

FRONTAGE DEVELOPMENT GUIDELINES

Commercial Retail Uses



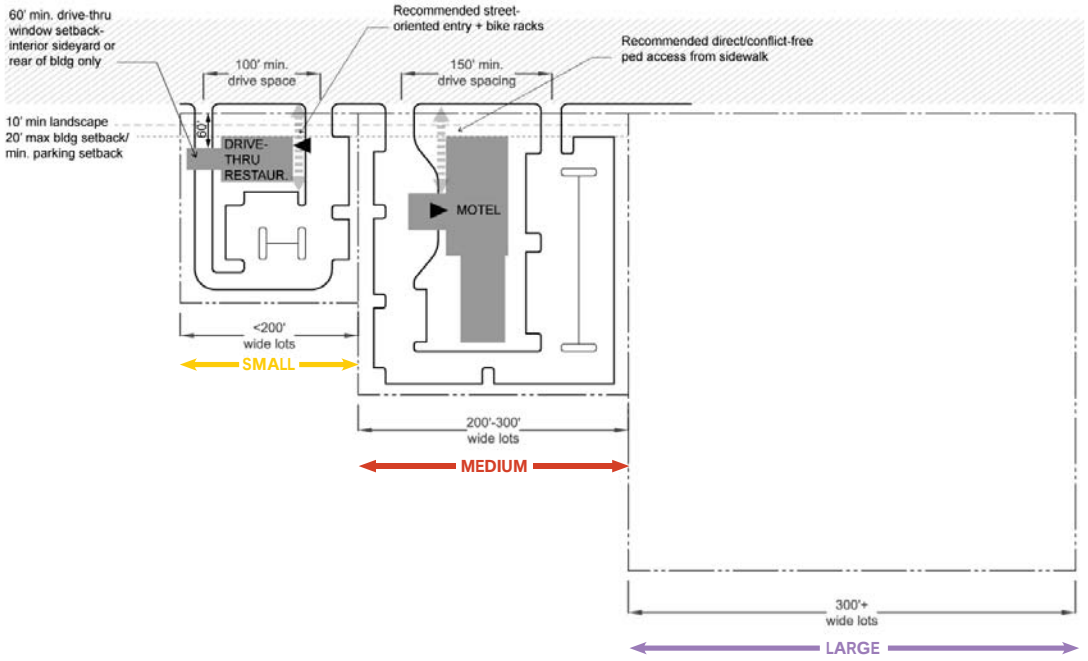
PROPOSED: 3D illustration of hypothetical new retail development under proposed guidelines

EXAMPLE: General Retail, Parking to Side

FRONTAGE DEVELOPMENT GUIDELINES

Commercial Service-Oriented Uses

PERMITTED USES: Delivery services, **drinking establishments**, **hotels/motels**, laundromat, lodging, micro brewery/distillery/winery, TV/radio studios, **restaurants** with/without drive-thru, service and repair (motorized/nonmotorized)



PLAN: Hypothetical service-oriented development under proposed guidelines [not to scale]

EXISTING: Commercial Service - Hotel

TYPICAL FRONTAGE DEVELOPMENT GUIDELINES

Land Use	Landscape Setback (min.)	Parking Setback (min.)	Build-To Line	Driveway Spacing (min)
COMMERCIAL SERVICE				
SMALL (<200')	10'	20'	20'	100'
MEDIUM (200'-300')	10'	20'	20'	150'
LARGE (300'+)	---	---	---	---

PROPOSED GUIDELINES: Recommended front setbacks for service type uses

FRONTAGE DEVELOPMENT GUIDELINES

Commercial Service-Oriented Uses

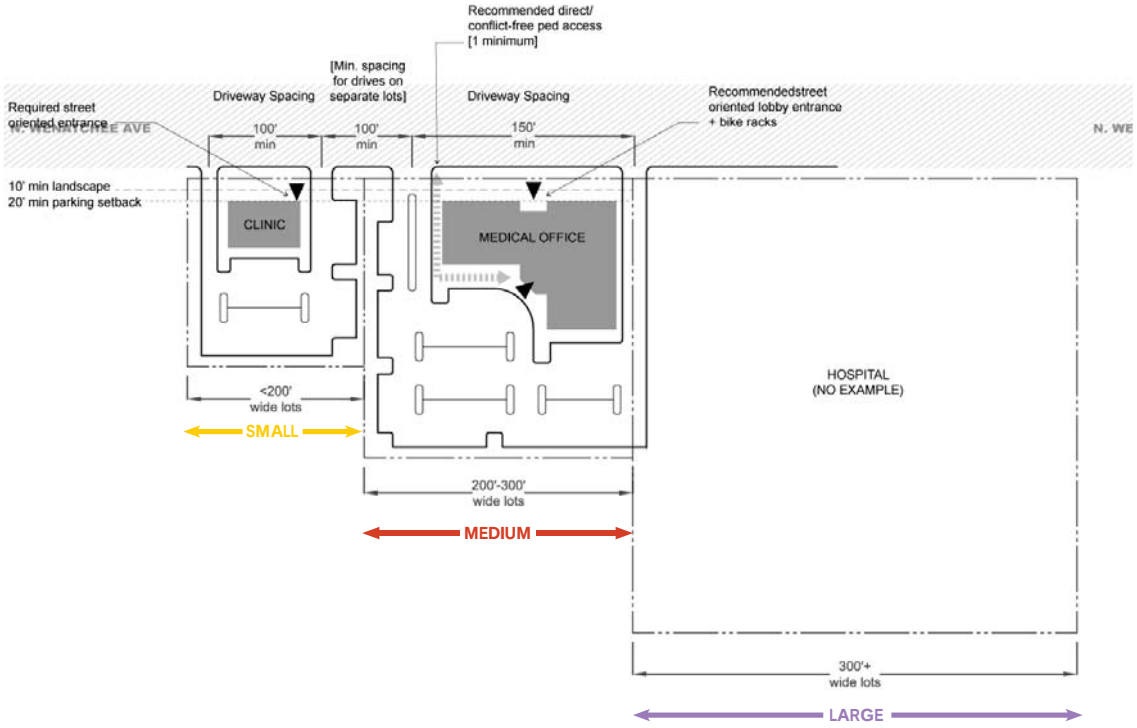
PROPOSED: 3D illustration of hypothetical new service-oriented development under proposed guidelines

EXAMPLE: Street-Oriented Motel

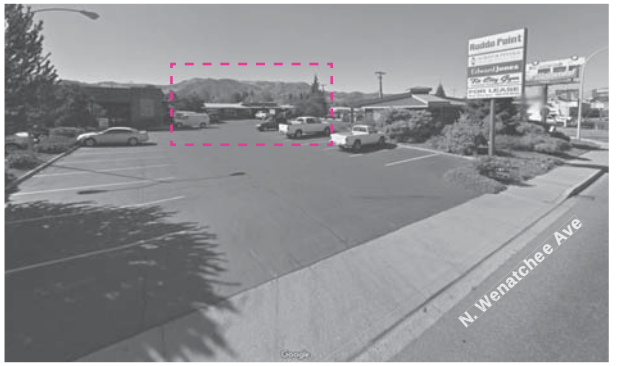
FRONTAGE DEVELOPMENT GUIDELINES

Medical Uses

PERMITTED USES: **Clinic**, hospital planned development, **medical office**, veterinary offices/clinics



PLAN: Hypothetical medical development under proposed guidelines
[not to scale]



EXISTING: Medical Facility

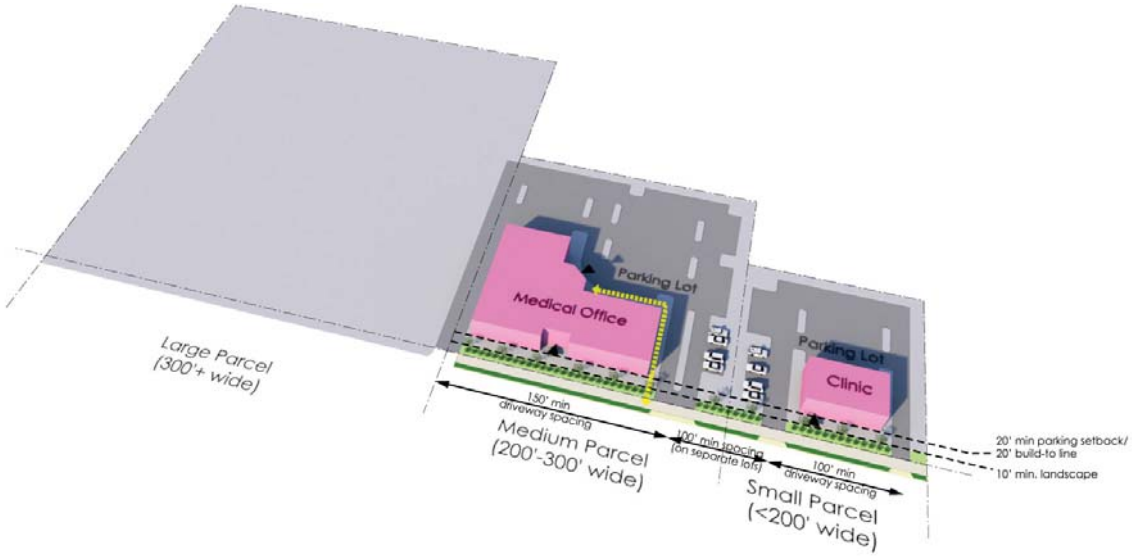
TYPICAL FRONTAGE DEVELOPMENT GUIDELINES

Land Use	Landscape Setback (min.)	Parking Setback (min.)	Build-To Line	Driveway Spacing (min)
MEDICAL				
SMALL (<200')	10'	20'	20'	100'
MEDIUM (200'-300')	10'	20'	20'	150'

PROPOSED GUIDELINES: Recommended front setbacks for medical type uses

FRONTAGE DEVELOPMENT GUIDELINES

Medical Uses



PROPOSED: 3D illustration of hypothetical new medical development under proposed guidelines

EXAMPLE: Street-Oriented Clinic

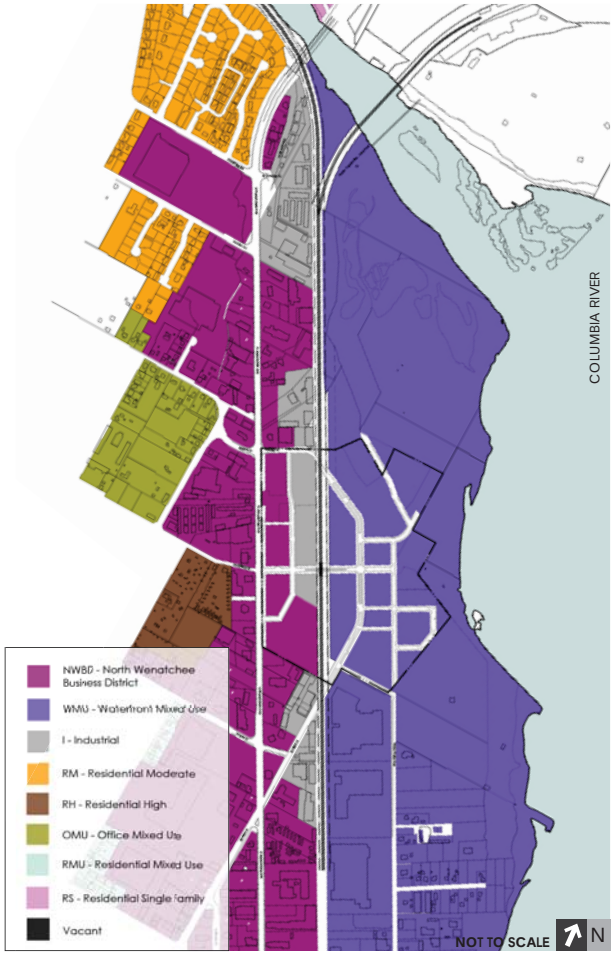
APPENDIX

SITE & CORRIDOR ANALYSIS

Zoning and Land Use

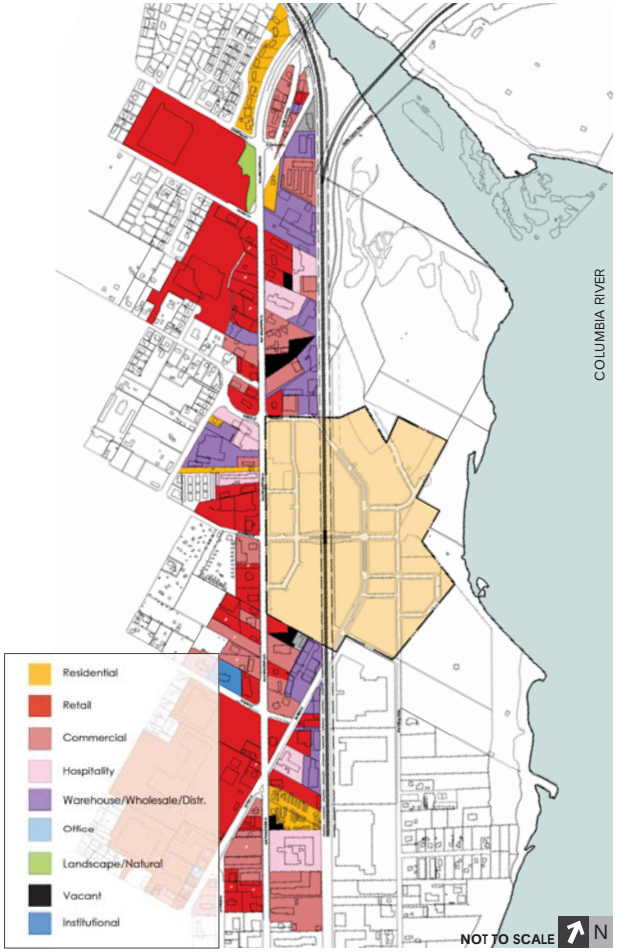
EXISTING ZONING

The project area exists entirely within the North Wenatchee Business District.



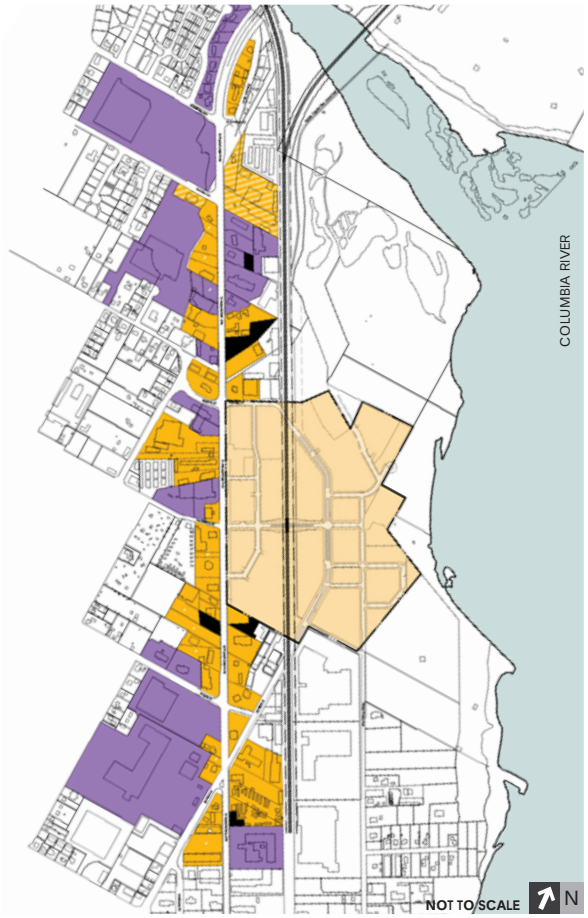
EXISTING LAND USE

The corridor is dominated by auto-oriented commercial uses: various scales of retail and "big box" stores, drive-thru restaurants, commerical services, and hotels.



DEVELOPMENT POTENTIAL

Purple parcels containing stable retail tenants or new development are considered stable and unlikely to undergo drastic change. Yellow parcels have been deemed redevelopable or could benefit from redevelopment. Black parcels are vacant.



SITE & CORRIDOR ANALYSIS

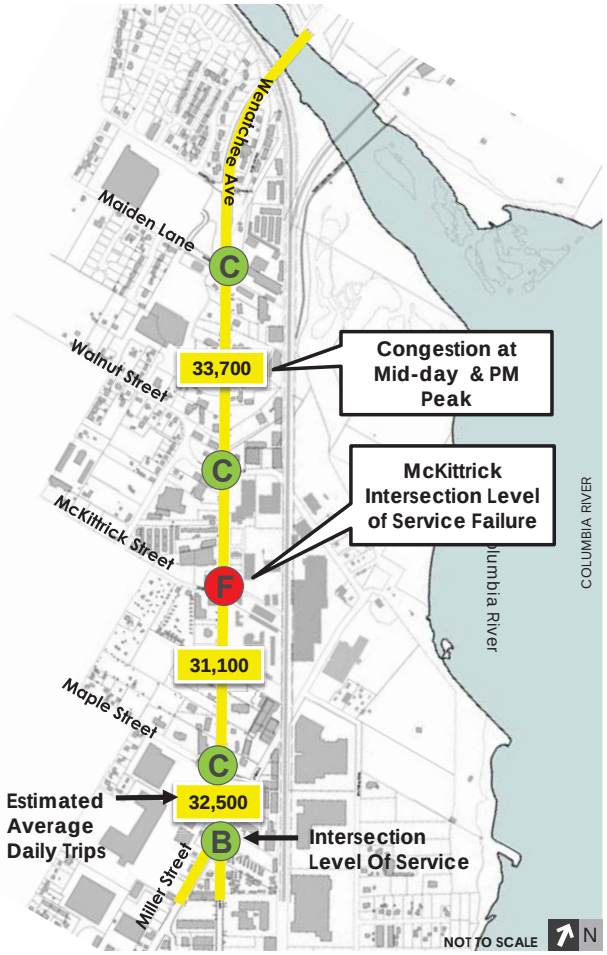
Complete Streets Criteria Assessment - *Car/Truck*

ACCESS ASSESSMENT

As indicated by the green zone, autos have unrestricted access to driveways on either side of the street via central turn lane for the majority of the project area.

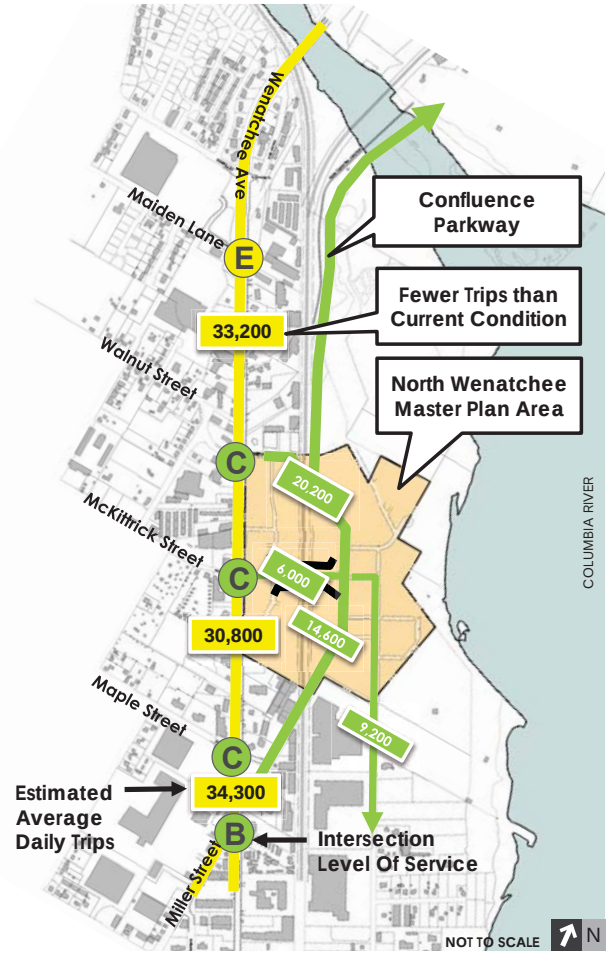
EXISTING TRAFFIC CONDITIONS 2016

Average daily trips in 2106



DISTRICT BUILD OUT WITH CONFLUENCE PARKWAY

Decrease in average daily trips with the construction of Confluence Parkway intended to lessen traffic and relieve congestion on Wenatchee Ave.

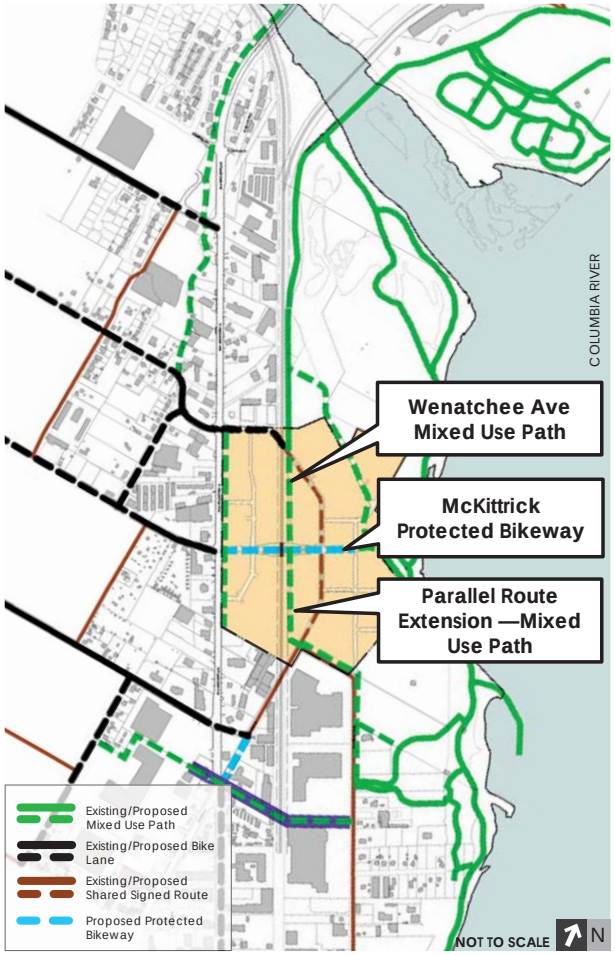


SITE & CORRIDOR ANALYSIS

Complete Streets Criteria Assessment - *Bicycle and Pedestrian*

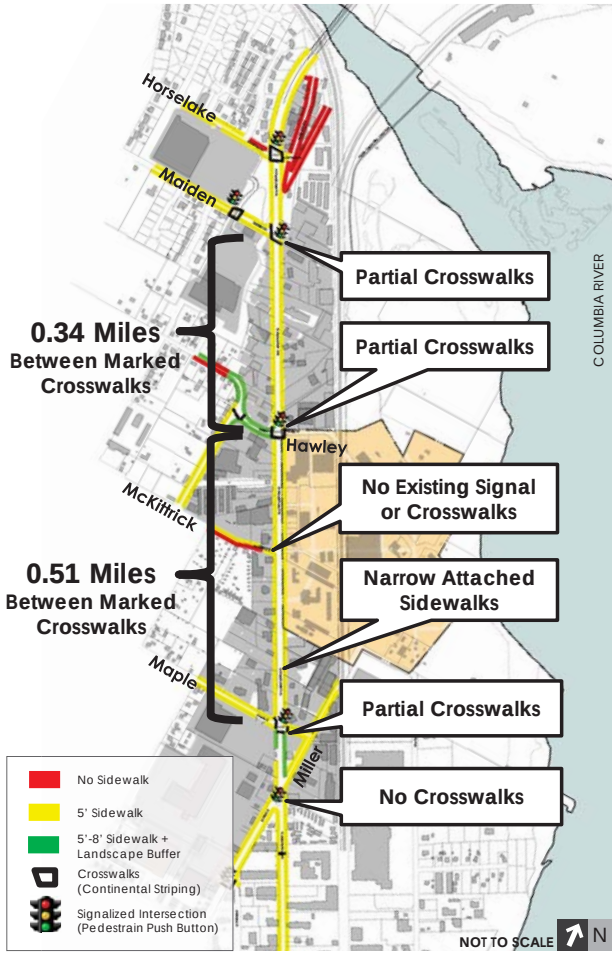
EXISTING & PROPOSED (SUBAREA PLAN) BICYCLE FACILITIES

Currently there is no bicycle facility on Wenatchee Ave and proposed routes currently only include new developement area at North Wenatchee.



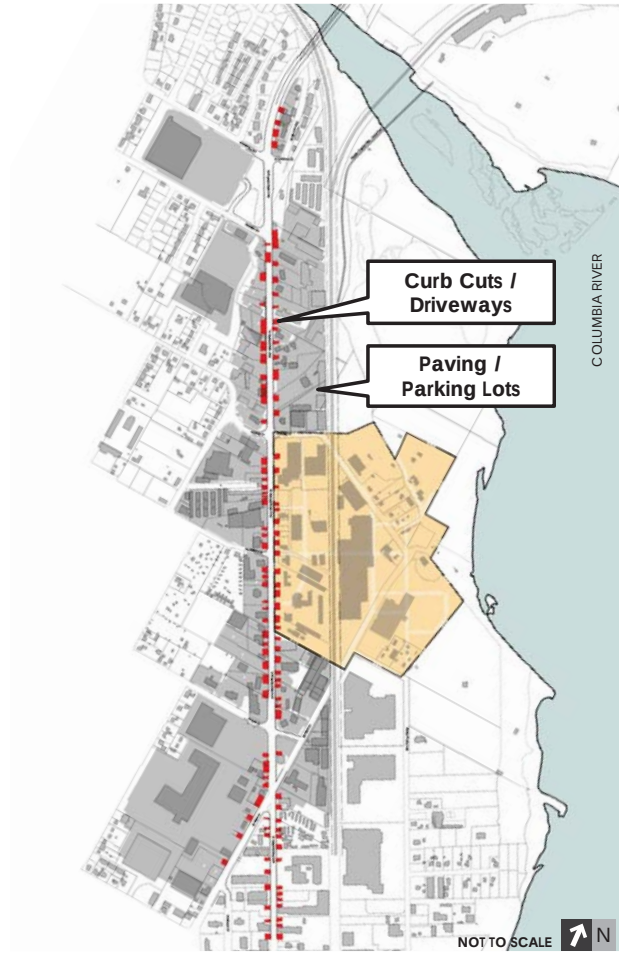
EXISTING SIDEWALK CONDITIONS & CROSSINGS

Sidewalks on Wenatchee Ave are narrow at five feet wide and unprotected from traffic. Signalized crosswalks at intersection are far apart and are typically incomplete.



EXISTING SIDEWALK CONDITIONS - INTERRUPTIONS

Curb cuts and large driveways cut through nearly every step of the sidewalk. This seven-block stretch of the corridor contains 84 sidewalk interruptions.

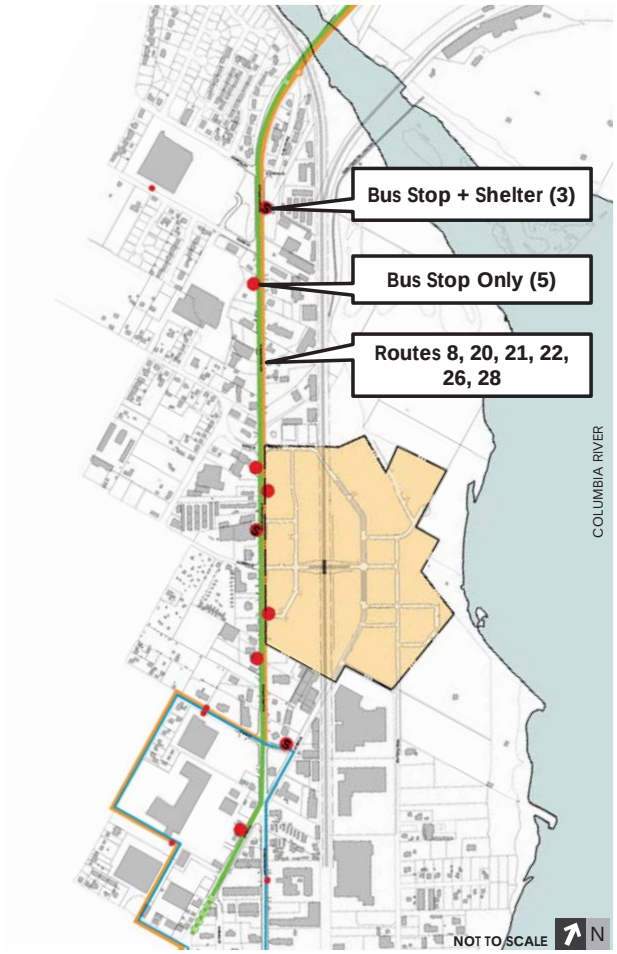


SITE & CORRIDOR ANALYSIS

Complete Streets Criteria Assessment - *Transit*

LINK TRANSIT BUS ROUTES

Bus service runs somewhat consistently through the corridor, but lacks quality sheltered bus stops and convenient access to these stops.



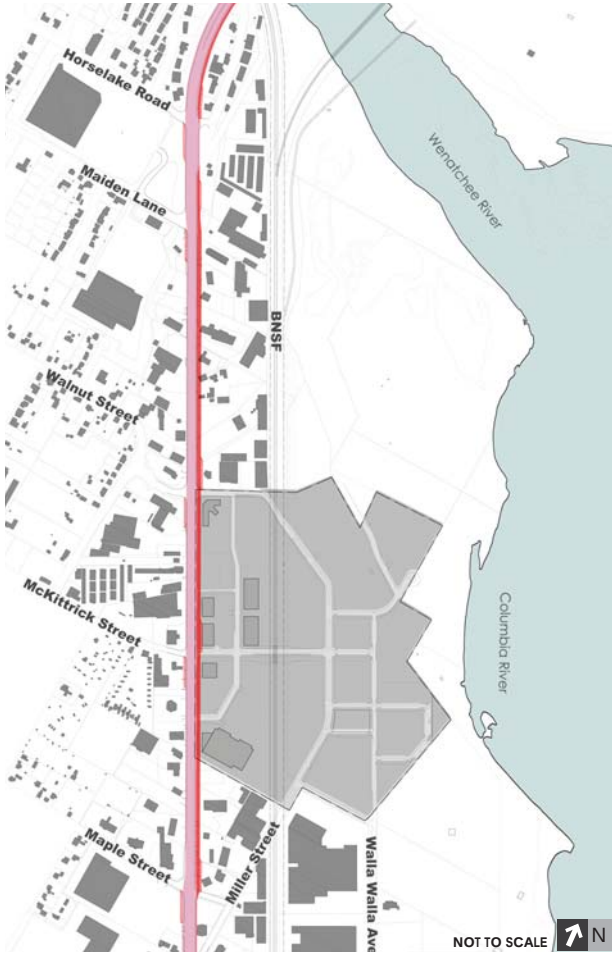
Bus Line	Study Area	Hours of Operation	Frequency
8 20, 21, 22, 26, 28	Olds Station > Columbia Station	4:30am - 10:00pm Limited Sat/No Sun	Peak: 5-15 min Off Peak: 15-30
C Line	Valley North Center > Columbia Station	6:30am - 8:00pm Limited Sat/No Sun	15 min

WENATCHEE CORRIDOR ALTERNATIVES

ROW Expansion Studies

100' ROW - EAST SIDE EXPANSION

Maintain west side ROW line and expand to the east to become 100'. Major intersections expand to 110', including acquisition of 5' to the west (at intersections only).



90' ROW - EAST SIDE EXPANSION

Maintain west side ROW line and expand to the east to become 90'. Major intersections expand to 110', including acquisition of 5' to the west (at intersections only).

90' ROW - SPLIT EAST/WEST EXPANSION

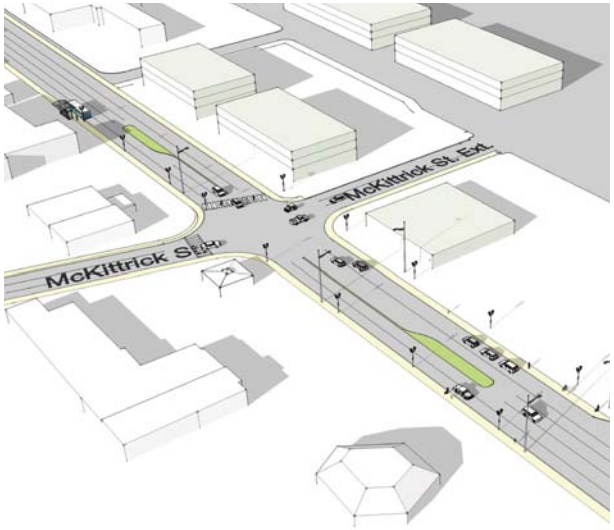
Expand ROW to 90' with acquisition evenly split on east and west sides of street.

WENATCHEE CORRIDOR ALTERNATIVES

Wenatchee Corridor Alternatives: Three alternative complete street concepts were assessed and evaluated using fundamental requirements as criteria. Both 'Alt. B' and 'C' were viewed as preferable. A phased approach in which 'Alt. B' would be constructed with the possibility of not precluding 'Alt. C' in the long term was recommended for further refinement.

(A) BOULEVARD CENTER

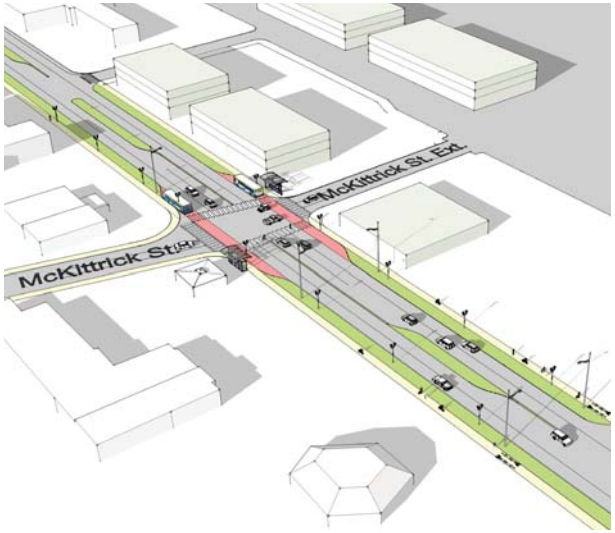
Corridor design as desicribed in N. Wenatchee Transportation Master Plan (2011). ROW expansion to 80 feet with median and left-turn/u-turn pockets at major intersections.



ALT. A: BOULEVARD CENTER CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ○ ○
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ○ ○
Implementation Potential	
Cost/Financing Political Acceptance Phasing	● ● ●

(B) RAPID BUS MOD

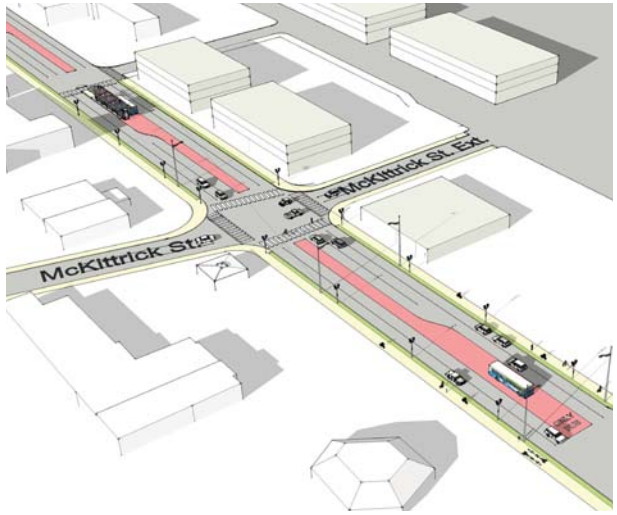
ROW expansion to 90 feet (110 feet at intersections) with median and turn lanes. Queue jump and signal priority for buses. Substantial pedestrian and bicycle improvements with multi-use paths.



ALT. B: RAPID BUS MOD CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ● ○
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ● ○
Implementation Potential	
Cost/Financing Political Acceptance Phasing	○ ? ○

(C) BUS RAPID TRANSIT (BRT) MOD

ROW expansion to 100 feet with dedicated central busway and multi-use paths for pedestrians and bicycles.

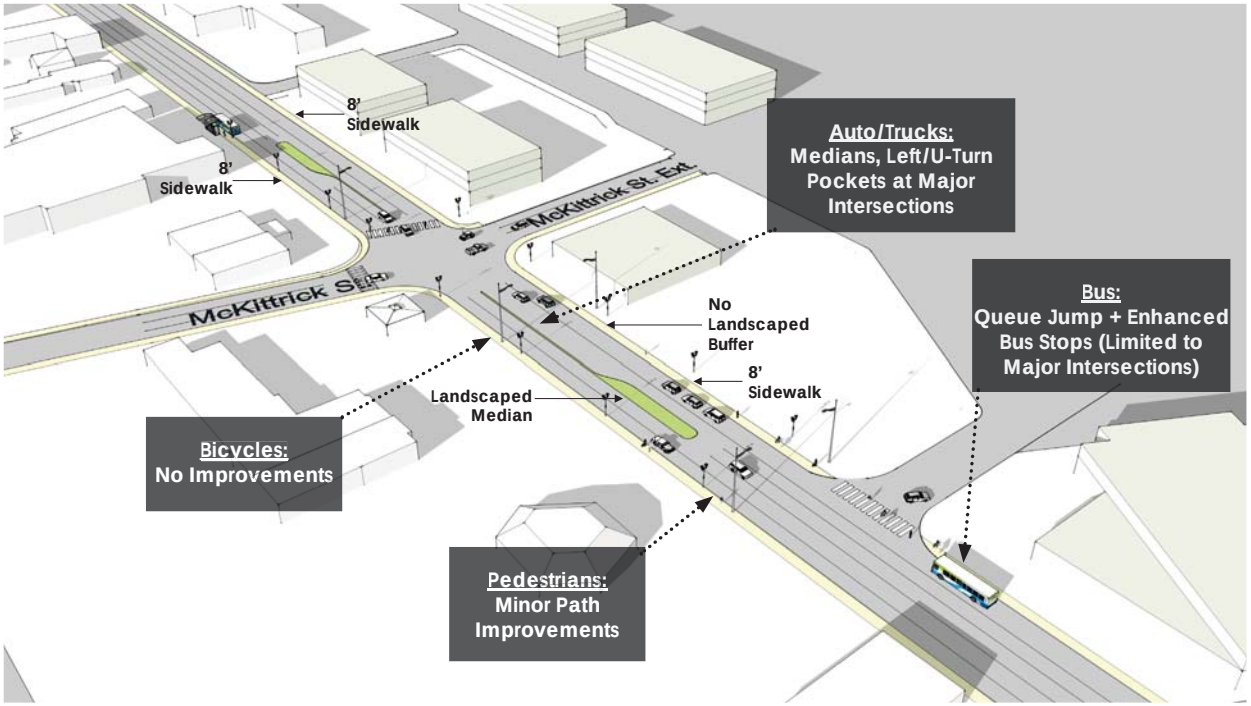


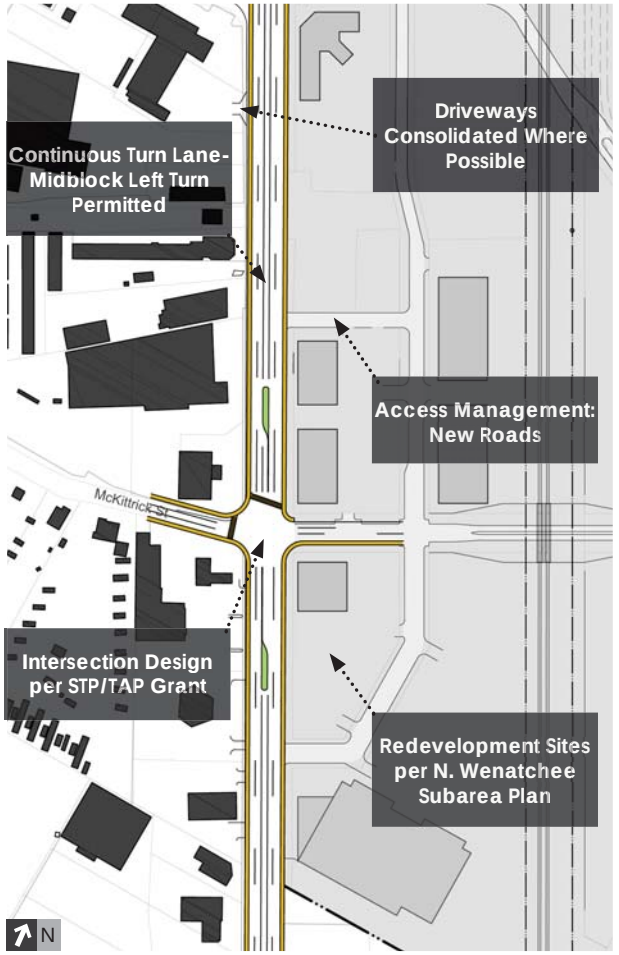
ALT. C: BRT MOD CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ● ●
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ● ●
Implementation Potential	
Cost/Financing Political Acceptance Phasing	○ ? ○

WENATCHEE CORRIDOR ALTERNATIVES

(A) Boulevard Center

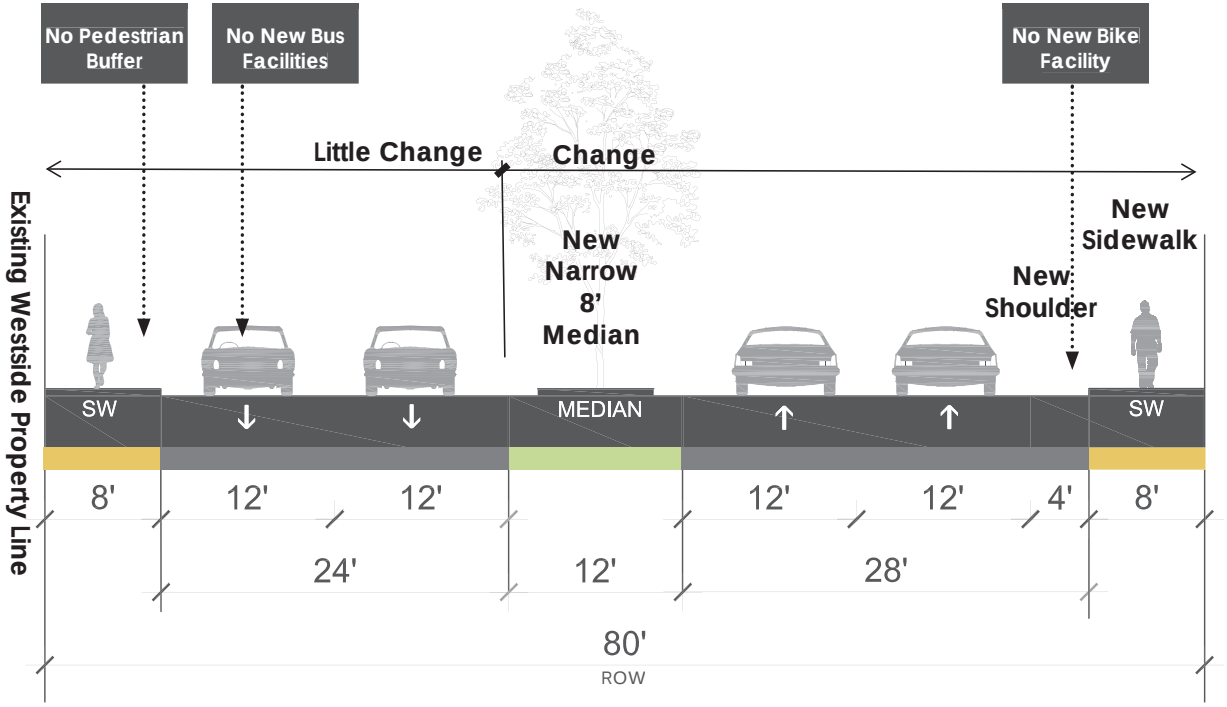
Corridor design as desicribed in N. Wenatchee Transportation Master Plan (2011). ROW expansion to 80 feet with median and left-turn/u-turn pockets at major intersections.





WENATCHEE CORRIDOR ALTERNATIVES

Ⓐ Boulevard Center



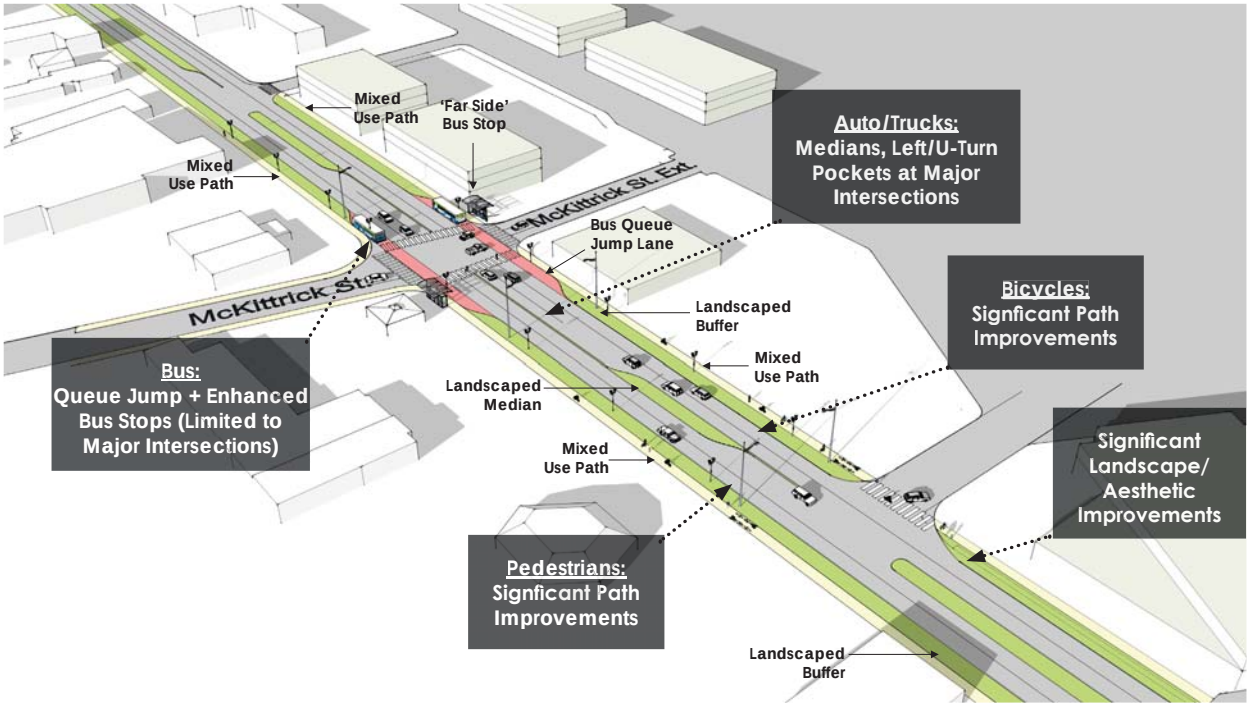
ALT. A: BOULEVARD CENTER

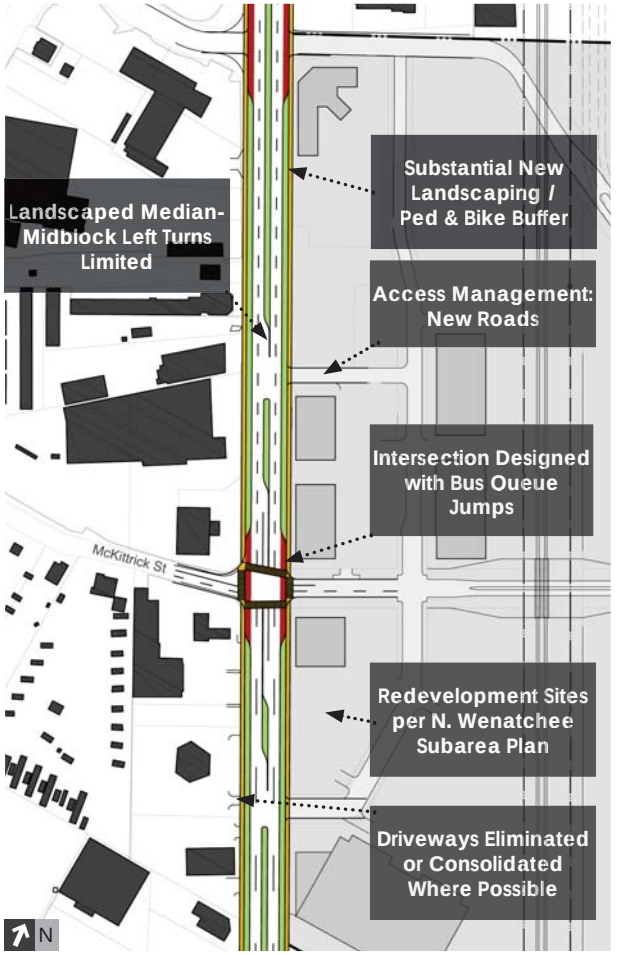
CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ○ ○
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ○ ○
Implementation Potential	
Cost/Financing Political Acceptance Phasing	● ● ●

WENATCHEE CORRIDOR ALTERNATIVES

(B) Rapid Bus MOD - Preferred Alternative

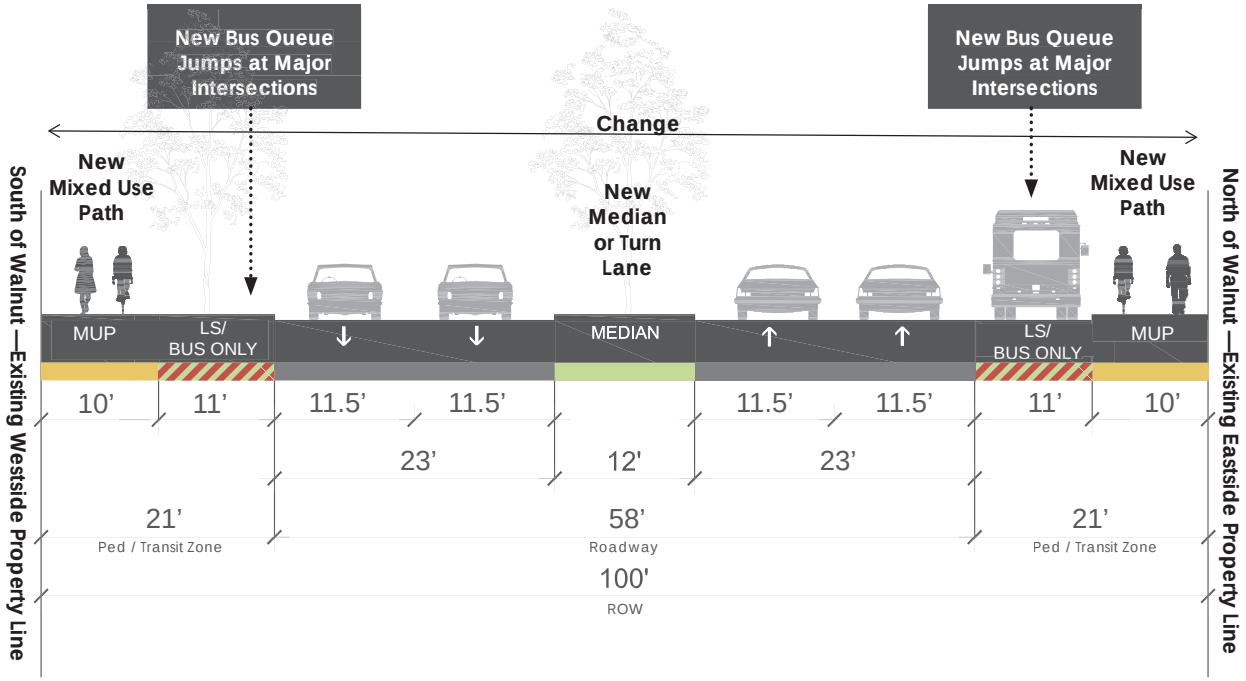
ROW expansion to 90 feet (110 feet at intersections) with median and turn lanes. Queue jump and signal priority for buses. Substantial pedestrian and bicycle improvements with multi-use paths.





WENATCHEE CORRIDOR ALTERNATIVES

Ⓑ Rapid Bus MOD



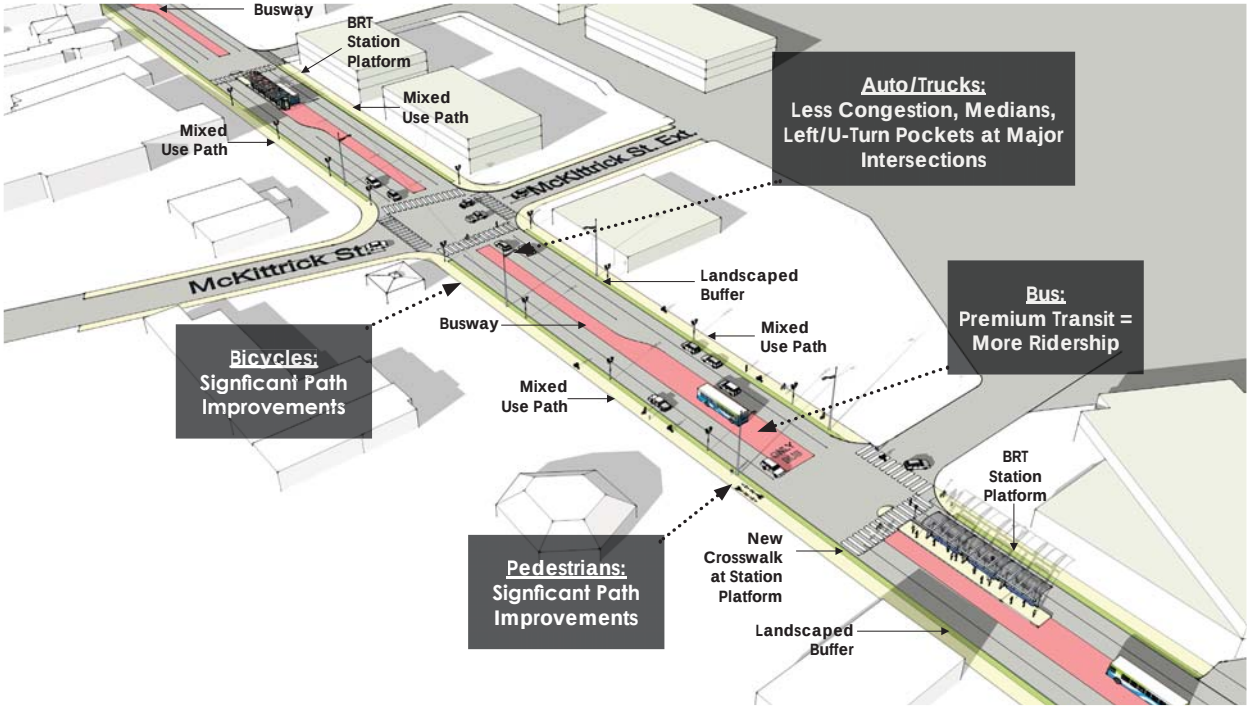
ALT. B: RAPID BUS MOD

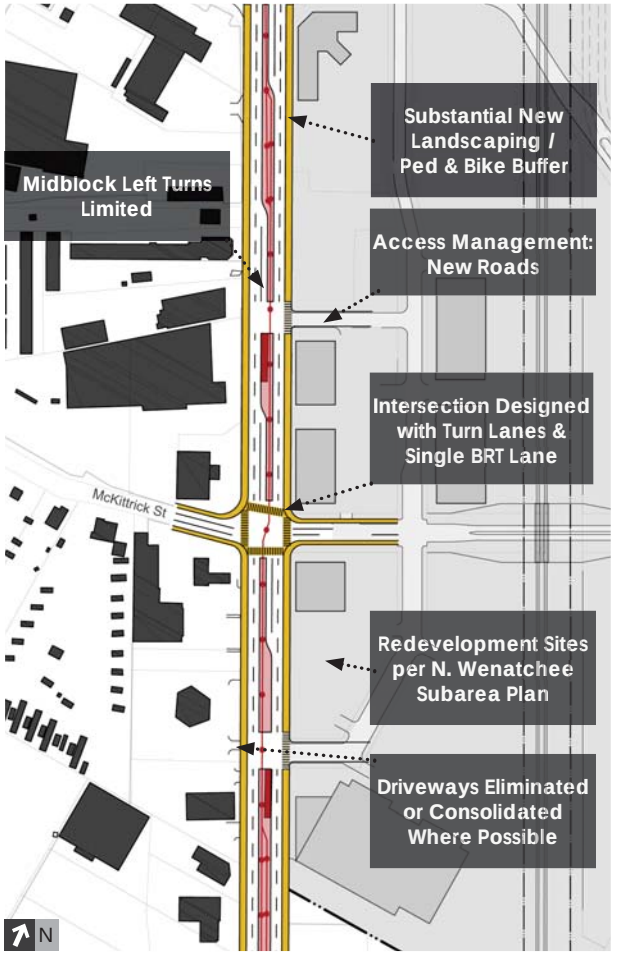
CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ● ○
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ● ○
Implementation Potential	
Cost/Financing Political Acceptance Phasing	○ ? ○

WENATCHEE CORRIDOR ALTERNATIVES

Ⓒ Bus Rapid Transit (BRT) MOD

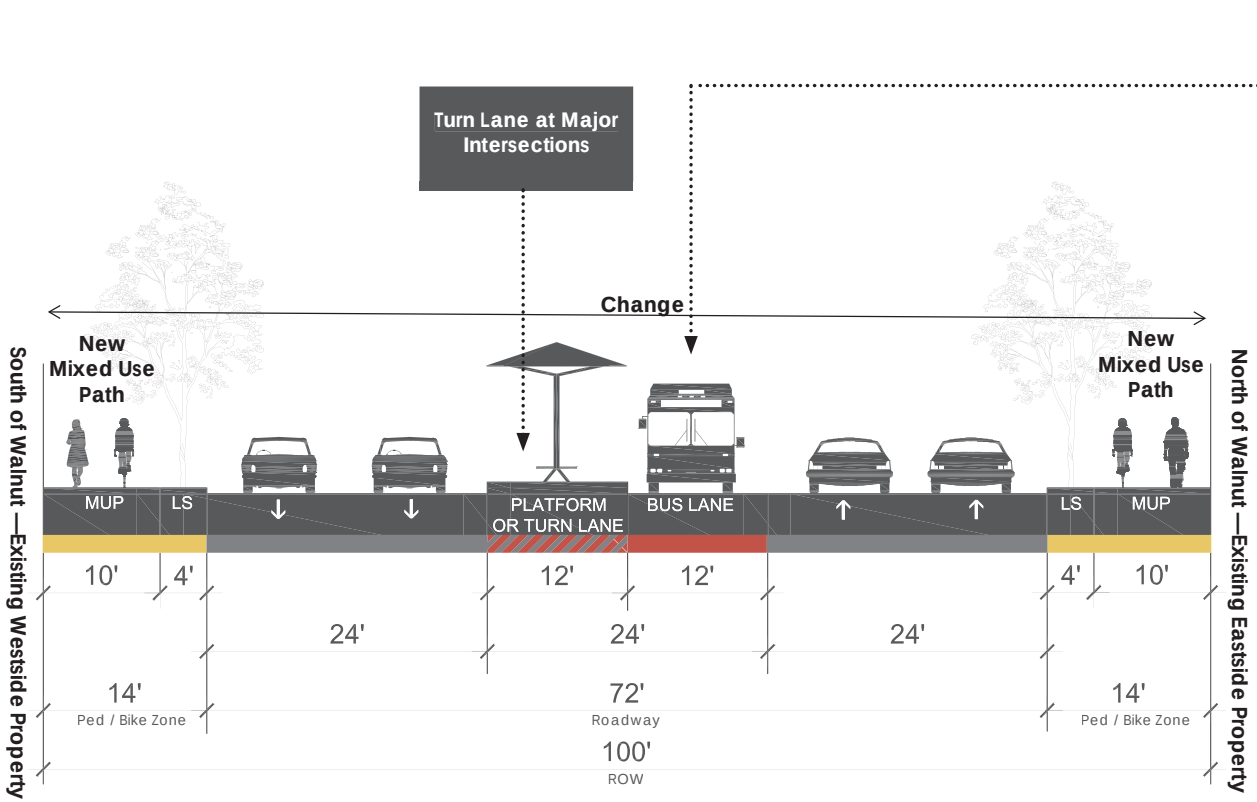
ROW expansion to 100 feet with dedicated central busway and multi-use paths for pedestrians and bicycles.

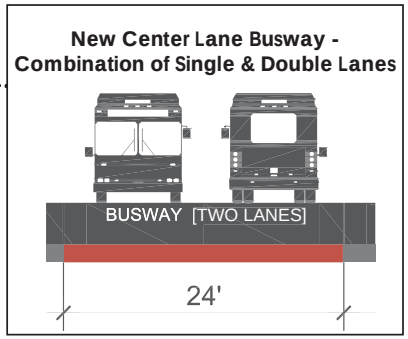




WENATCHEE CORRIDOR ALTERNATIVES

Ⓒ Bus Rapid Transit (BRT) MOD





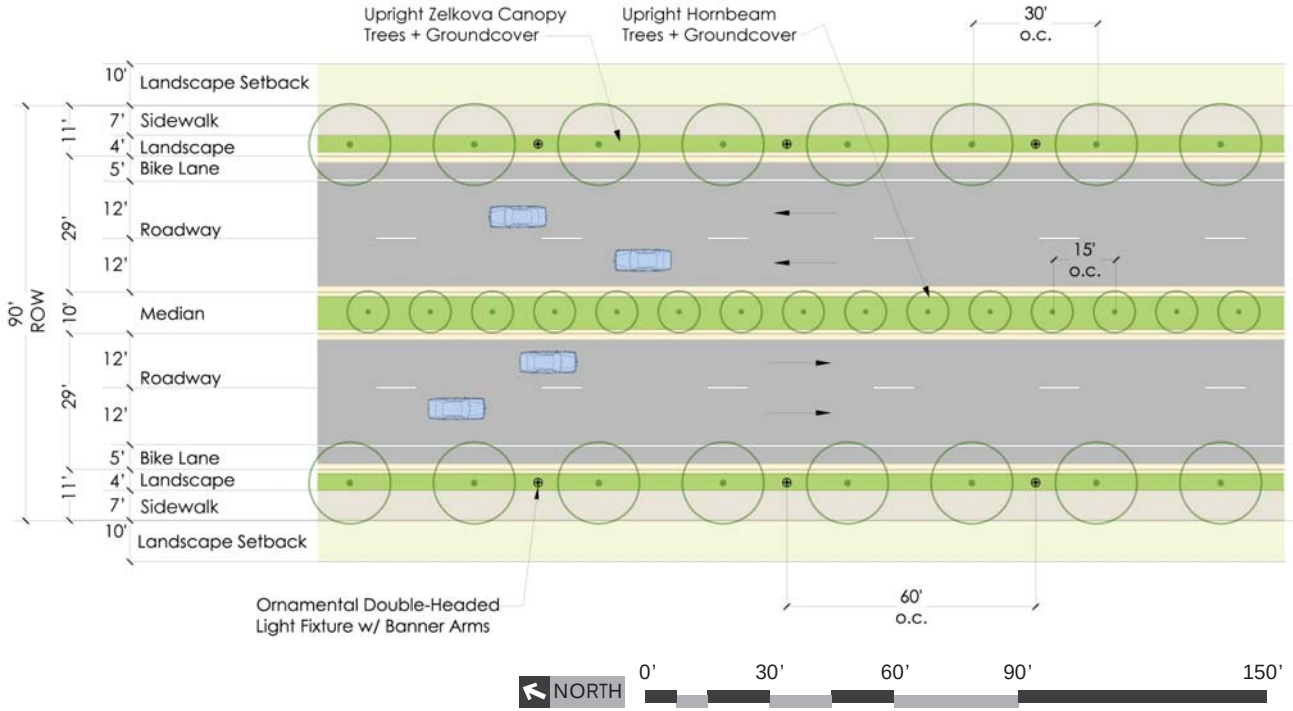
ALT. C: BRT MOD

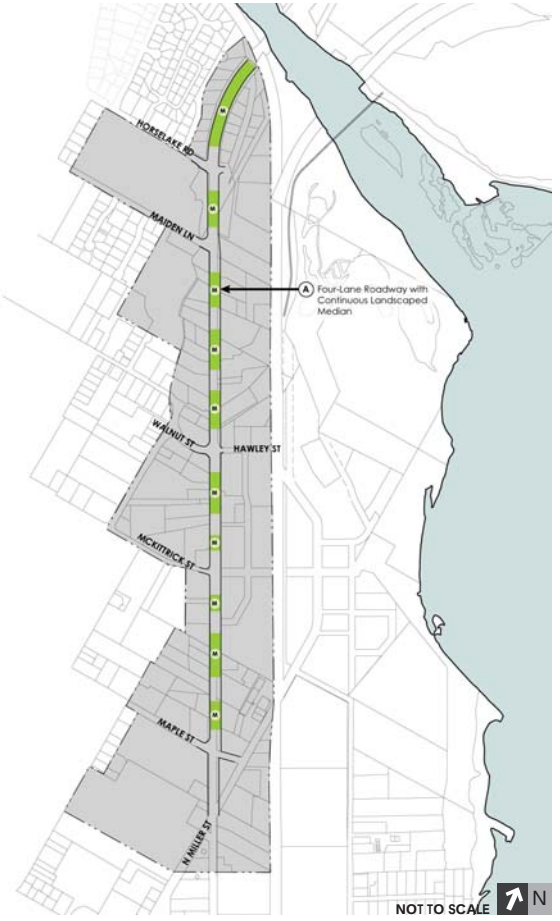
CRITERIA	RATING
Complete Street Potential	
Pedestrian Bicycle Transit Auto/Truck	● ● ●
MOD Potential	
Existing Stable Use Supportive Redevelopment Potential	● ● ●
Implementation Potential	
Cost/Financing Political Acceptance Phasing	○ ? ○

ALTERNATIVE ROADWAY SEGMENTS

Four-Lane Roadway with Shoulder Bicycle Lane - 90' ROW

An alternative four-lane roadway with on-street bike lanes was considered within a 90' ROW. This alternative provides a wider roadway for emergency vehicle access. However, the minimal 5' bike lanes will do little to support bicycle usage and pose safety concerns for cyclists within a high traffic volume, high speed and heavy vehicle corridor.





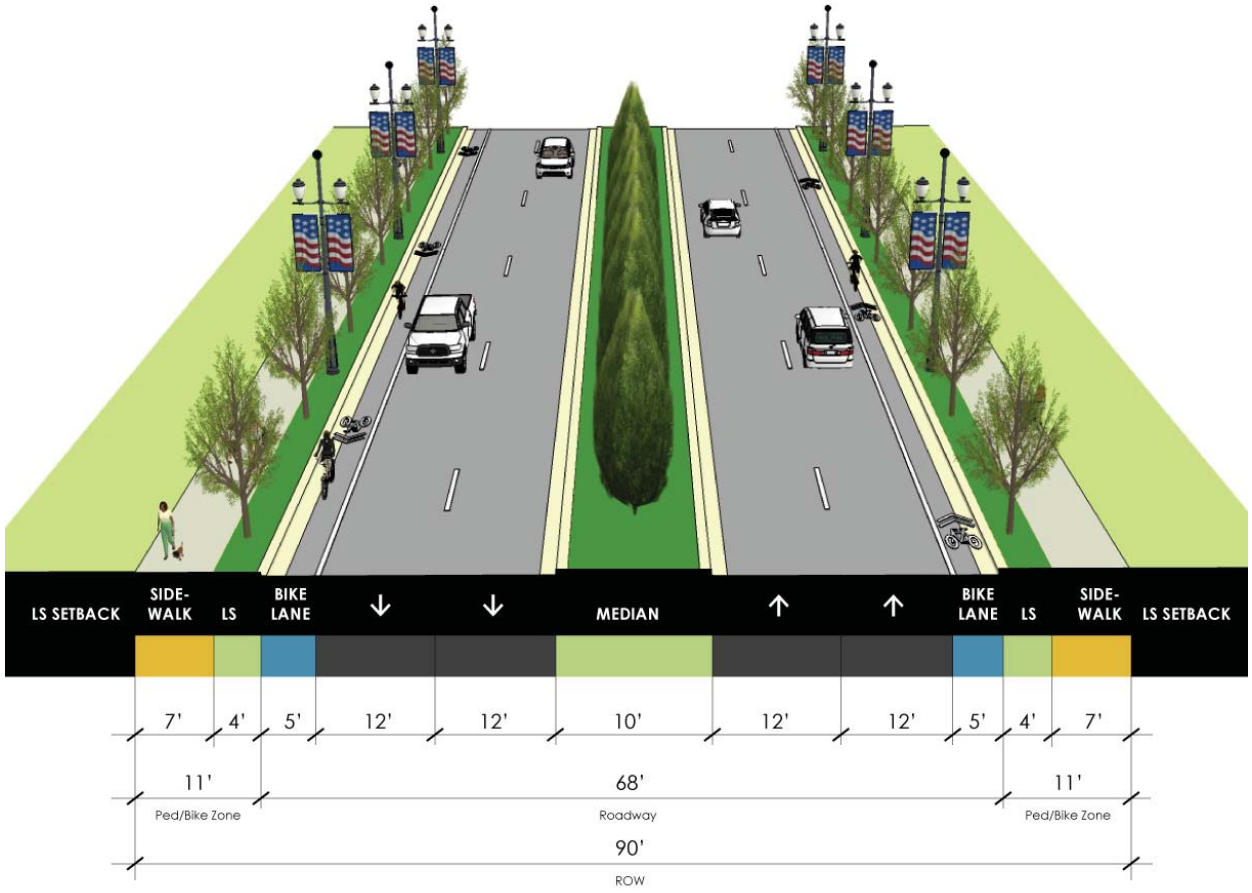
Key Plan

The base roadway condition at a width of 90 feet includes four travel lanes at 12' and two 5' bike lanes adjacent to the curb and inclusive of the gutter. Separating directional traffic is a landscaped median at 10 feet in width, planted with Japanese Zelkova trees (*Zelkova serrata* 'Green Vase') and groundcover providing shade and softening the surrounding hardscape.

Landscape zones separate the vehicular travel lanes from the multi-use paths on either side of the roadway. These landscape strips are planted with Upright Zelkova Canopy trees and groundcover provding a safe separated area for pedestrians and bicycles. Additionally the canopy trees ehance the street character and sense of enclosure while providing shade and rainwater diversion. The landscape zone is where other furnishings such as street signage and light fixtures are placed. The ornamental double-headed light fixtures shown provide lighting to both the sidewalk and the roadway. Complete with banner arms, the oranmental fixtures contribute to the improved aesthetic of the corridor.

ALTERNATIVE ROADWAY SEGMENTS

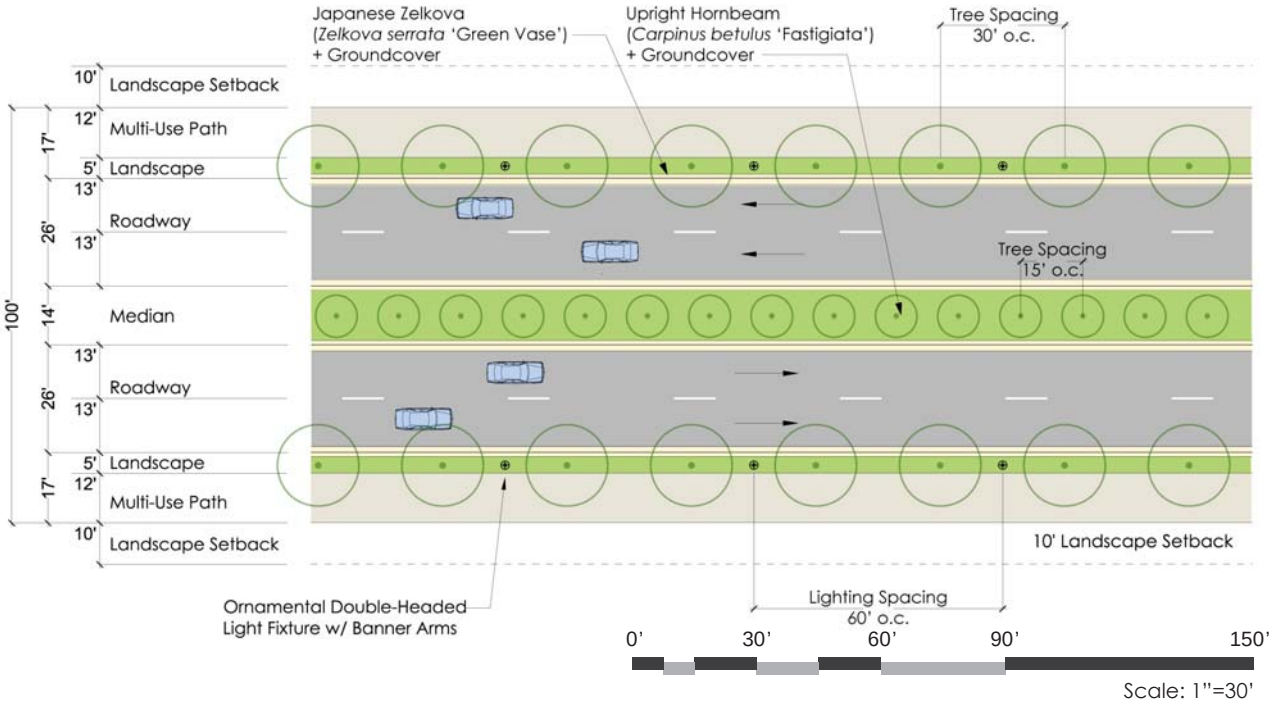
Four-Lane Roadway with Shoulder Bicycle Lane - 90’ ROW



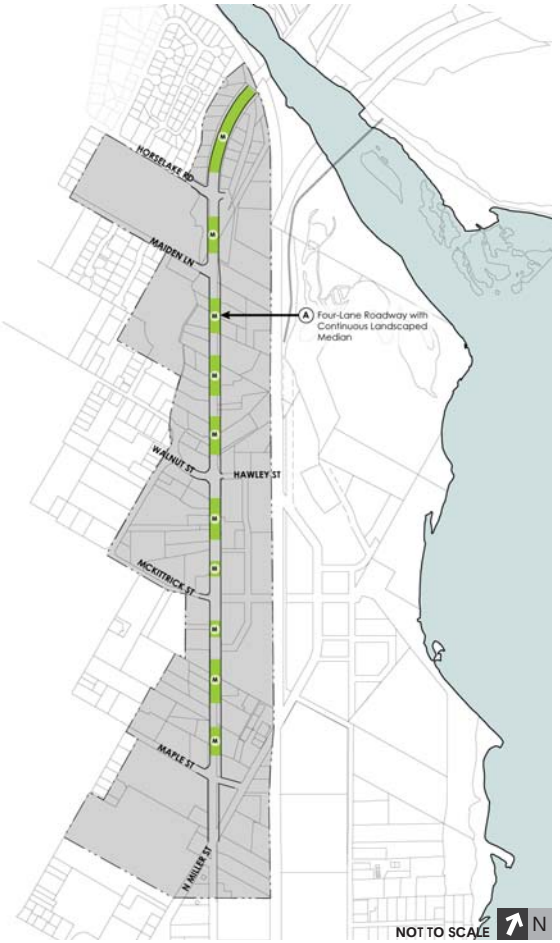
ALTERNATIVE ROADWAY SEGMENTS

Four-Lane Roadway - 100' ROW

An alternative four-lane roadway was considered within a 100' ROW. This alternative gives the MUPs a full width of 12' (rather than 10'), and widens the median to 14' (from the proposed 10'). However, this 100' ROW impacts more properties than the proposed 90' ROW.



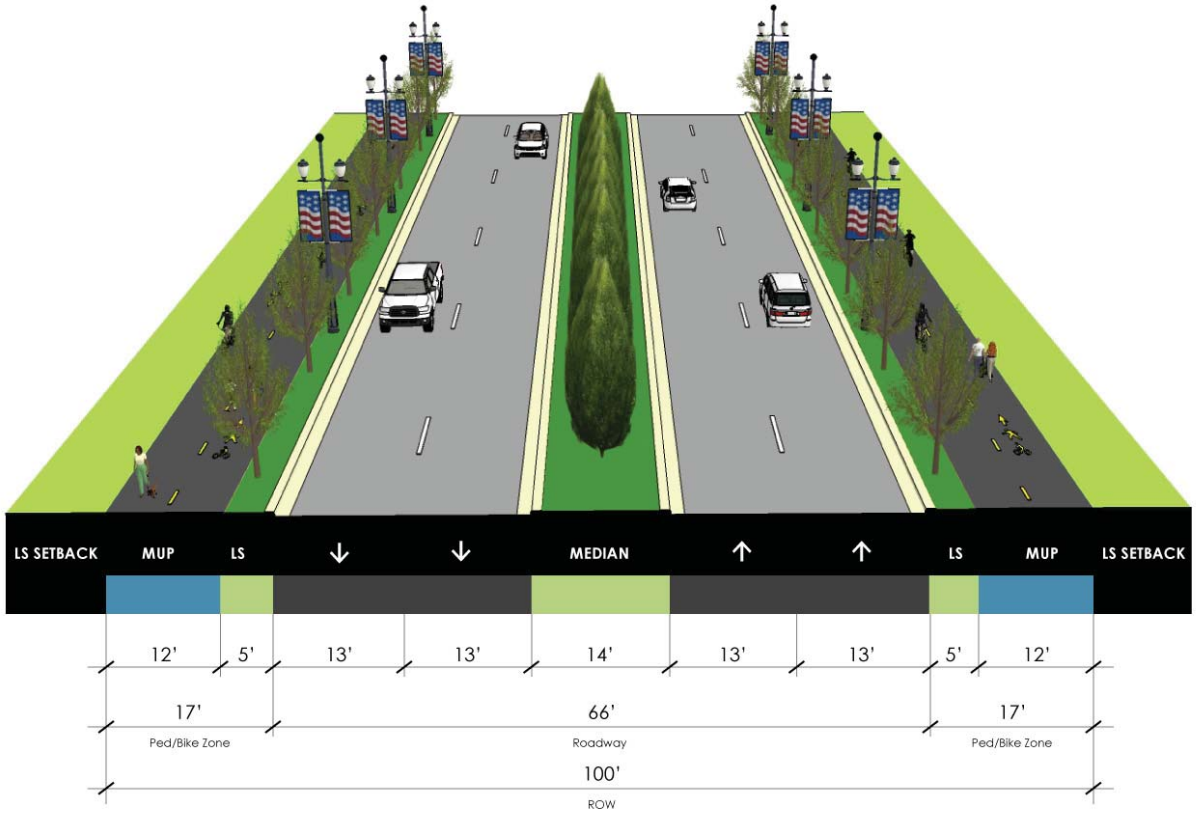
Scale: 1"=30'



Key Plan

ALTERNATIVE ROADWAY SEGMENTS

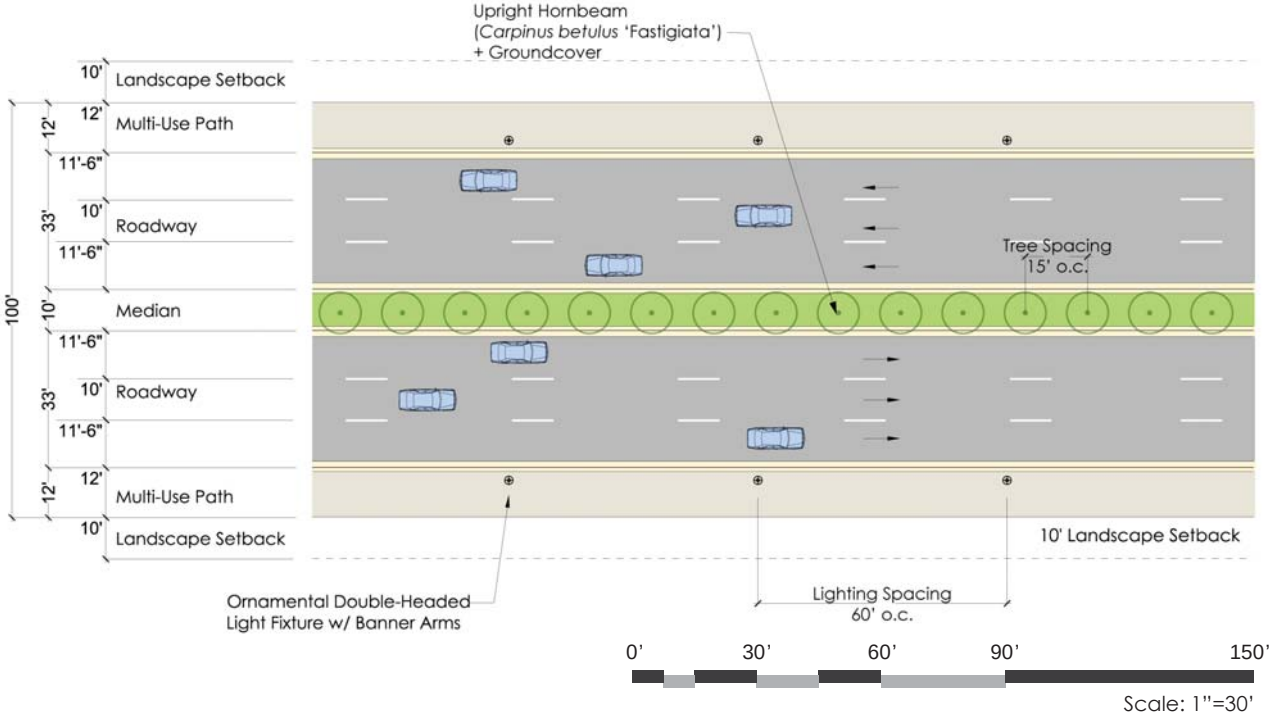
Four-Lane Roadway - 100’ ROW



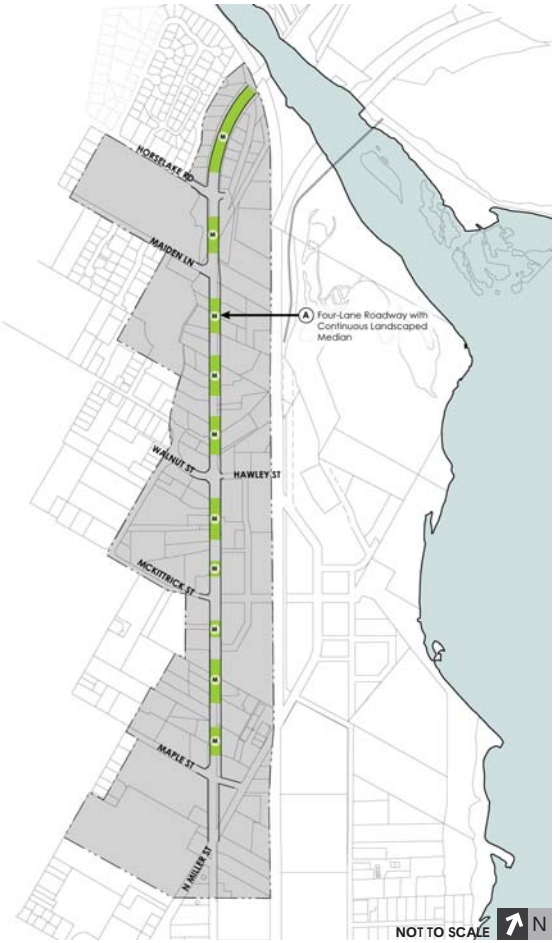
ALTERNATIVE ROADWAY SEGMENTS

Six-Lane Roadway - 100' ROW

An alternative six-lane roadway was considered within a 100' ROW. This alternative gives the MUPs a full width of 12' (rather than 10'), but does not include landscaping and street trees as a buffer separation along the edge of the roadway. However, this 100' ROW impacts more properties than the proposed 90' ROW.



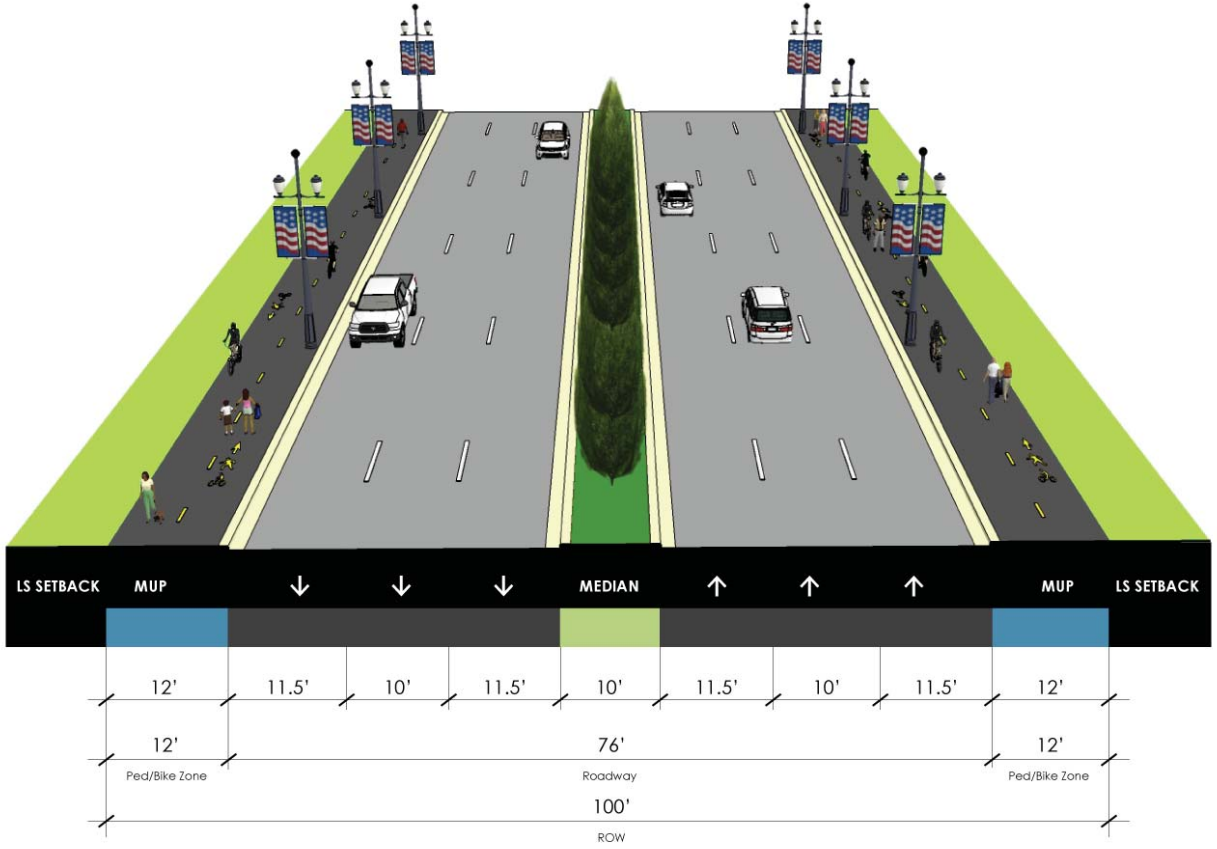
Scale: 1"=30'



Key Plan

ALTERNATIVE ROADWAY SEGMENTS

Six-Lane Roadway - 100’ ROW



INTELLIGENT TRANSPORTATION SYSTEM (ITS) TECHNOLOGY

ITS Enhanced Bus Rapid Transit Systems

Bus Rapid Transit (BRT) combined with Intelligent Transportation System (ITS) technology has significant advantages for addressing urban congestion and pollution, optimizing traffic operations as well as support emergency vehicles and for providing efficient and effective transportation options. ITS is needed for a BRT system regardless if it operates on city streets or its own dedicated R.O.W. The key to BRT and ITS is to focus upon the marginal benefit that one technology may provide to a certain BRT system.

As the BRT design for North Wenatchee Avenue does not include a dedicated guideway the ITS technology that is essential for the BRT to function with a higher level of efficiency than the traditional bus is the use of signal prioritization.

The ITS technologies that can be integrated into BRT systems include:

- **Vehicle Prioritization—**This technology provides preference or priority BRT vehicles at intersections. Signal Timing / Phasing and Signal Priority help BRT vehicles minimize delay caused by having to stop for traffic at intersections. Access Control provides the BRT vehicles with unencumbered entrance to and exitfrom stop locations. All prioritization for BRT vehicles reduces travel delay and increases reliability of the BRT operation.

- **IVI Technology—**This technology group includes Intelligent Vehicle Initiatives which provide automated controls for a BRT vehicle. Use of the Collision Warning function assists a driver to operate a BRT vehicle safely. Use of Collision Avoidance, Lane Assist, and Precision Docking functions provides for direct control of the BRT vehicle when making avoidance, guidance or docking maneuvers. All IVI functions help to reduce frequency and severity of crashes and collisions and provide reduced travel or boarding times.

- **Fare Collection—**This technology group includes some method of electronic fare collection which provides a fast, cashless interface for the passenger. Use of magnetic stripe and smart card technologies are proven and the benefits of electronic payment systems are known. Use of either station-based or vehicle-based fare collection helps to reduced dwell times and increase passenger convenience.

- **Operations Management—**This includes automation methods which provide for enhanced operations management for a BRT fleet. Use of an Advanced Communication support various functions of fleet operational management. Use of Automated Scheduling Dispatch System and a Vehicle Tracking method assists BRT management to best utilize the BRT vehicles. Use of Vehicle Mechanical Monitoring and Maintenance assists in minimizing downtime of the BRT vehicles. All Operations Management functions improve operating efficiencies which supports a reliable service and reduced travel times.

- **Passenger Information—**This includes various methods of providing information to passengers so they can make the best use of their time. Information about the vehicle schedule can be provided at the station / stop and / or on the vehicle. All the Passenger Information functions improve passenger satisfaction, help to reduced wait times, and can increase ridership.

- **Other Technology—**This includes unique enhancements for a BRT system. Use of Archived Data and automatic Passenger Counters can support operations and planning efforts for operating a BRT fleet. Use of Silent Alarms and Monitoring systems can increase the security of the operation. All of these functions can help to support passenger satisfaction.

WAYFINDING AND CORRIDOR SIGNAGE

Wayfinding and Corridor Signage Considerations

The North Wenatchee Avenue Concept Plan is intended to make the main north/south travel route (SR 285) through Wenatchee more attractive, functional and inviting. The plan aims to use the design of the corridor to improve the economic vitality of North Wenatchee Avenue, enhance the aesthetics of the roadway and adjacent land uses and ensure a balanced multi-modal design that supports enhanced transit functions and accessibility for pedestrian and bicycles.

The plan recommends that wayfinding signage be improved to aid in the revitalization of the North Wenatchee Avenue corridor and ensuring visibility and access to businesses.

Recommendations relevant to signage are listed below.

Gateways and Districts

1. Develop community entrances that convey a sense of arrival and reflect the character of Wenatchee

   a) *Community Gateways*
   - SR 285 Bridge Crossing
   - N Miller and Wenatchee Ave Intersection

   b) *District Gateways*
   - Wenatchee Avenue at McKittrick Street

2. Encourage property owners to work together with the City to develop a district identity, improve property appearance and market their district as a desirable shopping and/or business location.

3. Use the district concept as an element in a coordinated wayfinding system and in related visitor brochures and maps.

4. Establish gateway character areas and provide guidelines for the development of landscaping and hardscaping of these gateways in a manner that is consistent with the Wenatchee Avenue Concept Plan.

Signage

1. Reduce Sign Clutter: Implement strategies such as a moratorium and phasing out of billboards, electronic sign boards, inflatable air dancers etc.. and develop coordinated signage standards for highway, directional, business, community/district, and route markers wayfinding.

2. Plan and Install Wayfinding Signs: Establish a coordinated wayfinding system that helps the user find their destination and understand where they are in the system.

3. Implement Commercial Signage Plan: Plan for and implement low key commercial signage along the corridor that reinforces Wenatchee's identity

4. Highway Guide Signage: Work with WSDOT to coordinate business access and highway directional signage

Wayfinding Program

1. Signs will be readily identifiable with Wenatchee and distinctive to the North Wenatchee corridor

2. Exhibit common characteristics that will help create a "brand" for the North Wenatchee corridor

3. Include new community gateway signs that welcome visitors to Wenatchee and reflect the unique character of the community

4. Incorporate trailblazer signs that reinforce "place-making" by directing visitors to major attractions, businesses and shopping areas

5. Customize pedestrian and street level destination signage to orient the visitor/customer to their location. Consider use in medians and at the head of each block/intersection.

Examples of wayfinding signs include:

Trailblazer Signs-

Consolidated Business Sign-

Pedestrian/Street Level Sign-

Community/District Sign in Median-