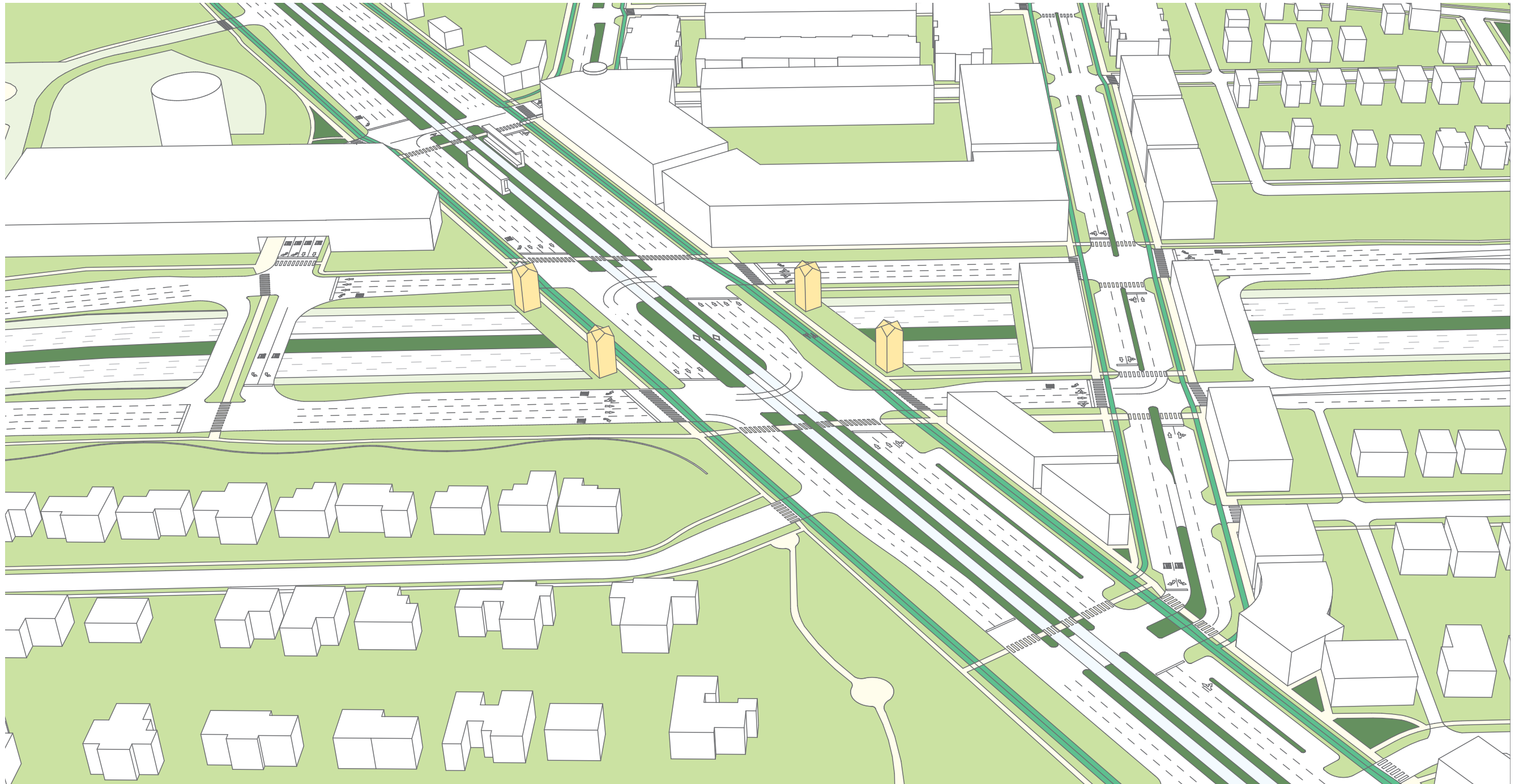


Woodward-696 Conceptual Complete Streets Study

Huntington Woods • Pleasant Ridge • Royal Oak, Michigan

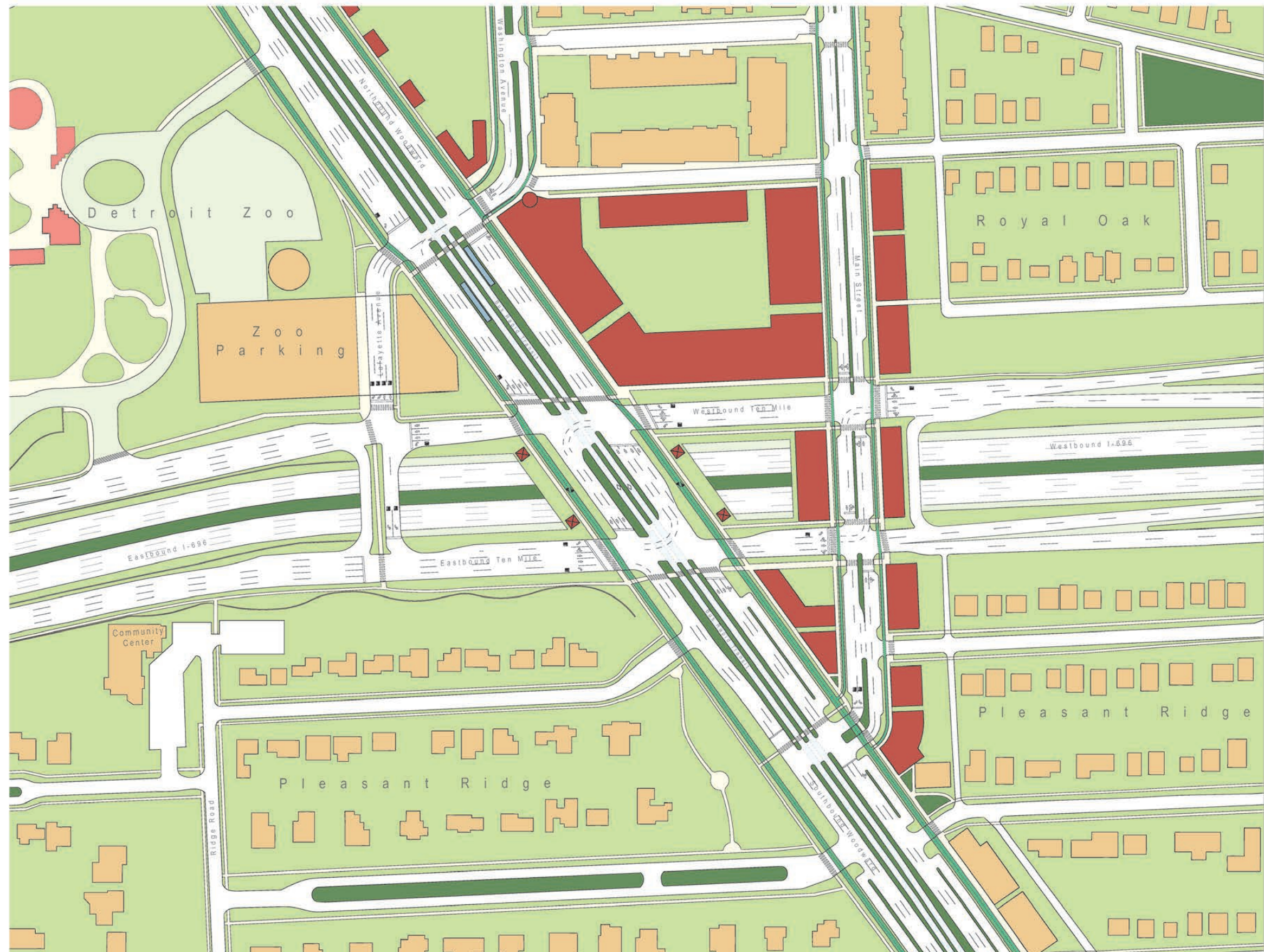


Prepared For: Woodward Avenue Action Association, City of Huntington Woods, City of Pleasant Ridge and City of Royal Oak

Consulting Team: Gibbs Planning Group, Inc., Nelson\Nygaard Consulting Associates, Peter Swift, and Associates, PE., The Street Plans Collaborative and TND Engineering.

04 June 2015

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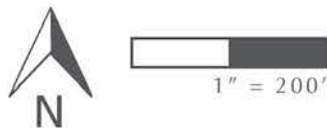


Woodward & I-696 Conceptual Complete Streets Study *Long-Term Concept*

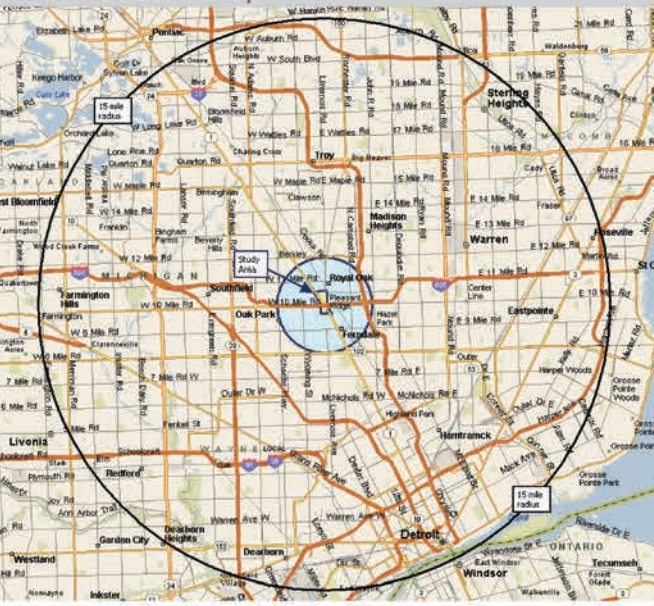
Huntington Woods, Pleasant Ridge, Royal Oak, Michigan

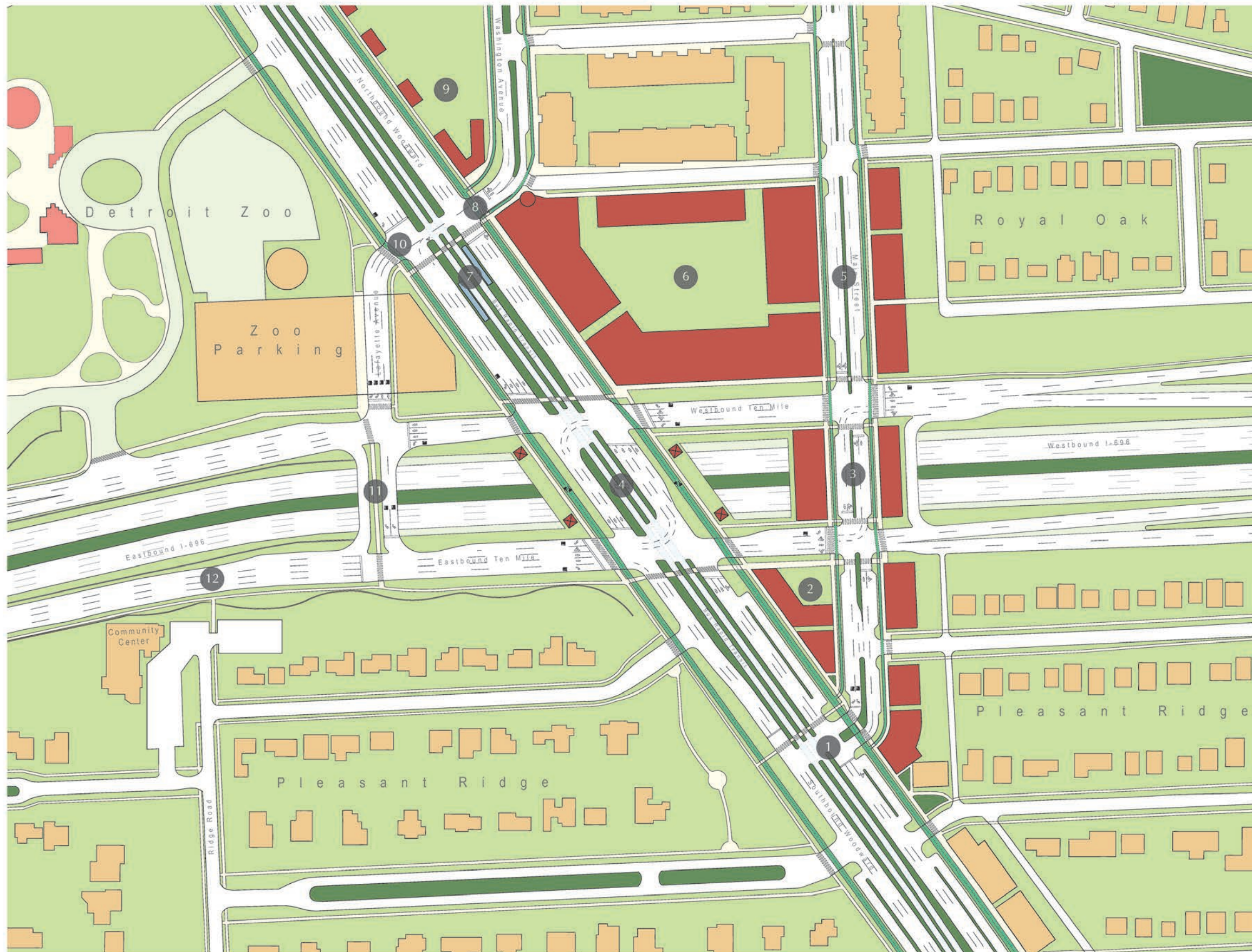
Key

- Proposed Bldg. Envelope
- Existing Building
- Zoo Building
- Bus Rapid Transit Stop
- Cycle-Track - Bike Lane
- Sidewalk
- Bus Rapid Transit Lane
- Median/Green Space



Location Map





Woodward & I-696 Conceptual Complete Streets Study *Long-Term Concept*

Huntington Woods, Pleasant Ridge, Royal Oak, Michigan

Design Features

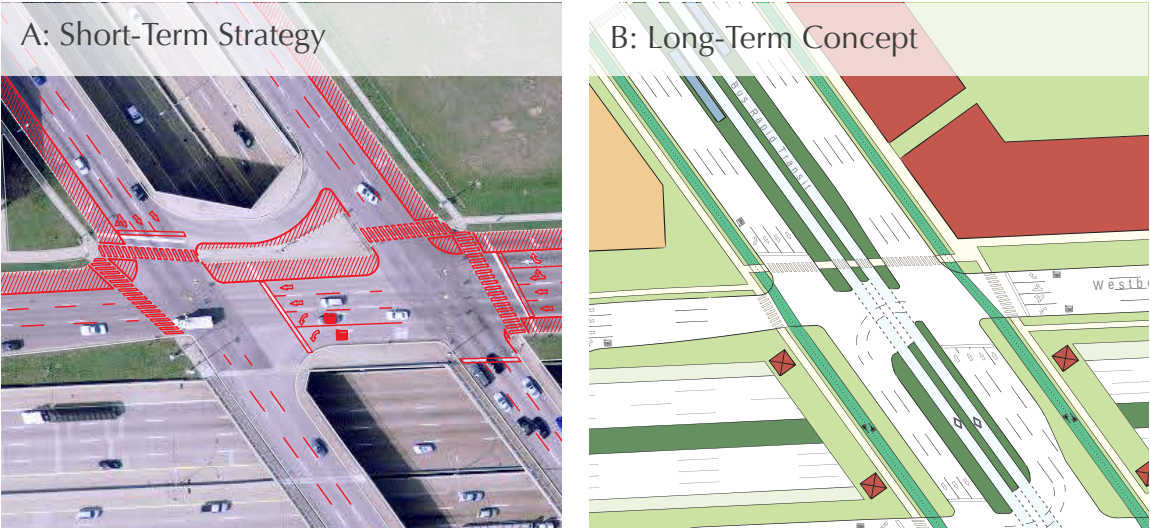
- 1 - Two-Way Main Street
Southbound left-turn onto Woodward
Northbound right-turn onto Main
- 2 - Triangle Development
Complete two-sided Main Street
Expanded on-street parking
- 3 - Capped Overpass for Liner Shops
Partial cap/cantilever for two-sided Main St.
On-street parking with optional rear parking
- 4 - Woodward-696 Configuration
Partial cap/cantilever for pedestrian facilities
Civic art
- 5 - Main Street Enhancements
Close Maryland St. for developable parcel
Four total lanes, on-street parking, median
- 6 - Developed Vacant Parcel
Buildings built to lot-lines along Main St,
Woodward, Ten Mile. Parking concealed.
- 7 - Bus Rapid Transit Station
Stations located in the median
Crosswalk moves to south median
- 8 - Washington Avenue Configuration
Two southbound lanes to Lafayette/Ten Mile
Right-turn onto one NB Washington lane
- 9 - Liner Buildings
Buildings conceal existing parking lots
Retrofit suburban conditions
- 10 - Lafayette Configuration
SB right-turn to Lafayette/Ten Mile
Consolidated street crossings to Zoo
- 11 - Expanded Overpass Crossing
Reduce Lafayette thru-lanes from three to two
Widen pedestrian crossing and plant or paint
- 12 - Connect Pedestrian Network
Connect Ridge Rd sidewalk to Ten Mile (PR)
Connect Huntington Rd to Woodward (HW)



1" = 200'

Using This Study

This study is organized by short-term road diet strategies (a) and long-term concepts (b). The short-term plans illustrate lane closures, lane-line realignments, road-space reclaims and pedestrian enhancements that may be tested. The long-term concept demonstrates best practices for pedestrian and non-motorized facilities, urban design and development, which can be accommodated with the current right-of-way should the underpass be removed and BRT implemented. The results of short-term testing should influence the eventual implementation of the long-term concept.



The Process: Incremental Experimentation



With potentially limited funding, incremental, small scale improvements could be viewed as a low-cost way to stage more significant investments. The four-step process above illustrates implementing a road diet by: (1) testing the design with construction barrells (2) if successfull making the temporary design more permanent with paint and delineators (3) eventually making permanent changes to infrastructure (4) allowing for complementary land uses to support walkability and placemaking.

Complete Streets Elements

Cycle Track



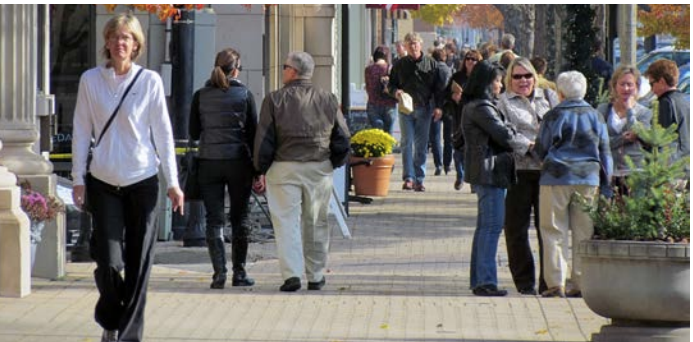
Two-way cycle tracks are physically separated lanes that allow bicycle movement in both directions on one side of the road. A cycle track is physically separated from motor traffic and distinct from the sidewalk, providing comfort to cyclist and pedestrian alike.

On-Street Parking



On-street parking provides motorists with the opportunity to park close to their destination. Not separated from the roadway, on-street parking slows down drivers who are instinctively watchful of other cars while placing a barrier between pedestrians and cars.

Sidewalk



Sidewalks are conduits for pedestrian movement and access, they enhance connectivity and promote walking. As public spaces, sidewalks serve as the front steps to the city, activating streets socially and economically.

Local Access Lane



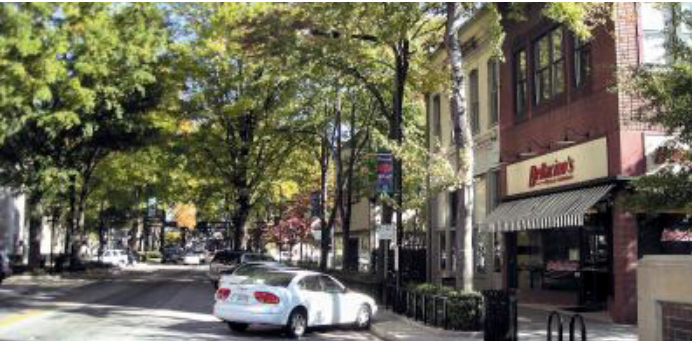
Local access lanes provide local vehicle access separated from through travel lanes to simultaneously move vehicles on the primary roadway while providing a calm, spacious pedestrian and living environment for adjacent businesses and residences.

Protected Bike Lane



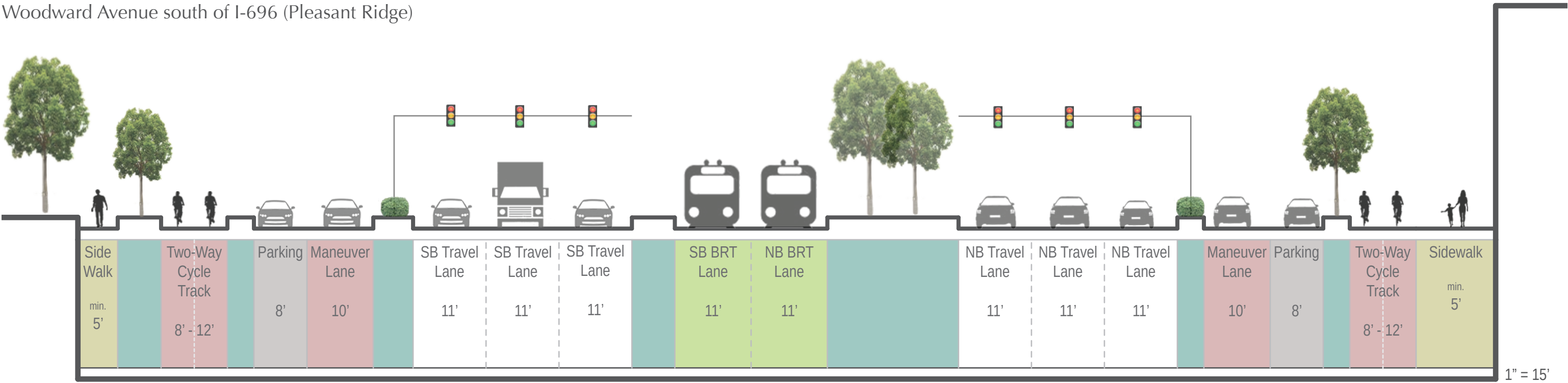
Protected bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.

Street Trees

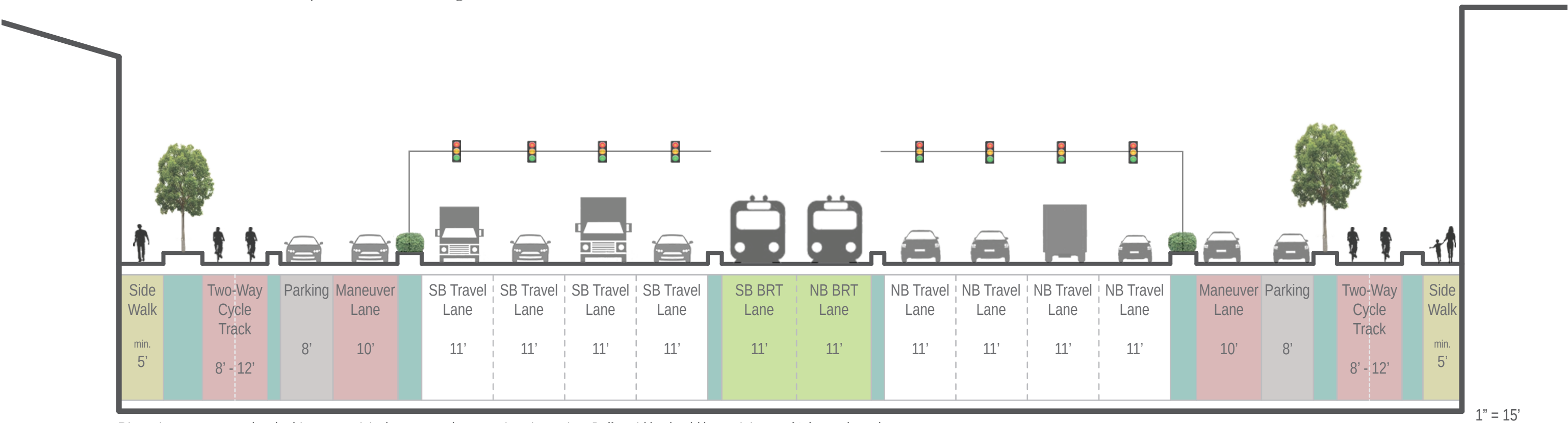


Street trees enhance city streets both functionally and aesthetically. Trees provide shade to homes, businesses, and pedestrians. Street trees also have the potential to slow traffic speeds. Aesthetically, street trees frame the street and the sidewalk as discrete public realms, enriching each with a sense of rhythm and human scale.

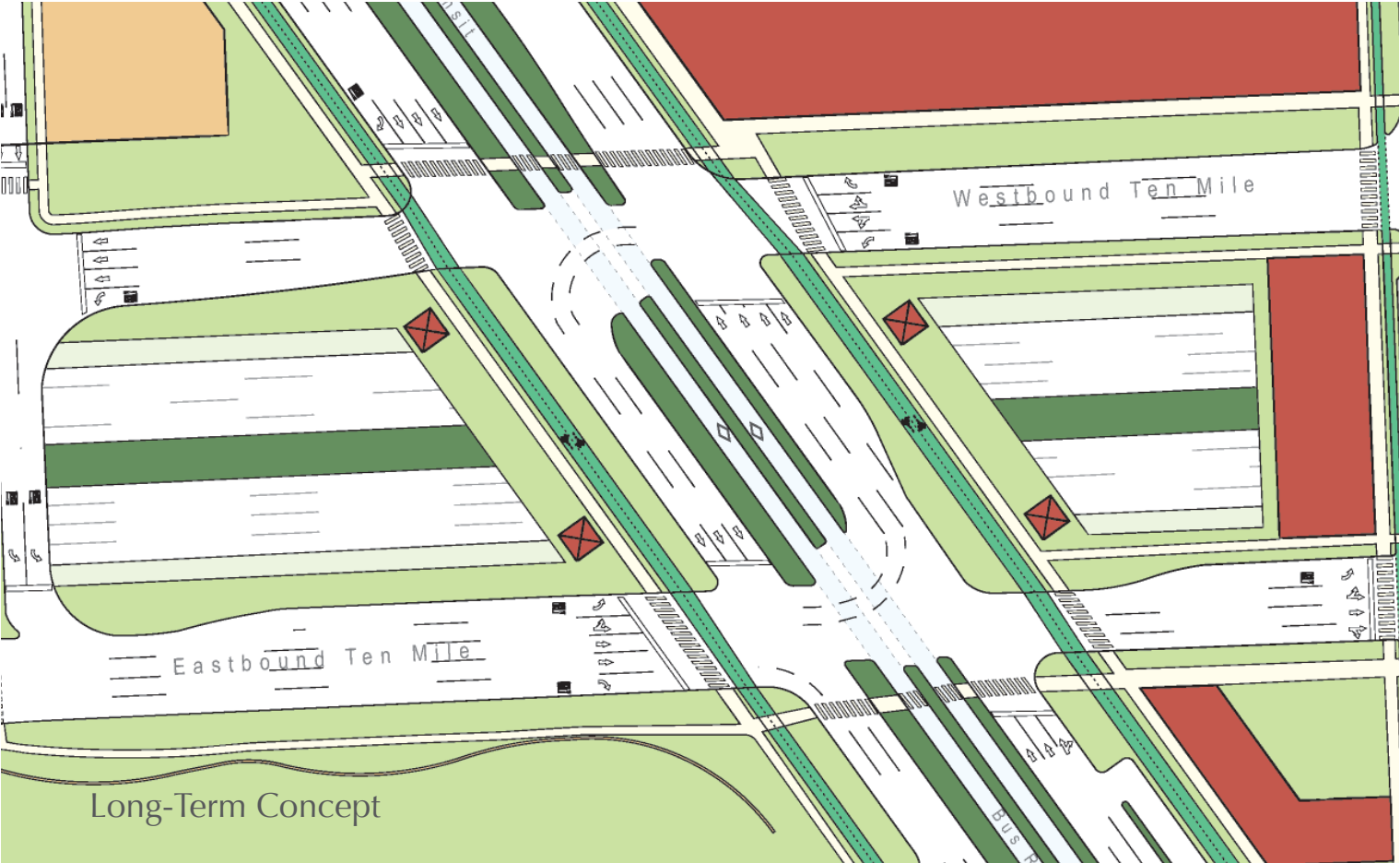
Woodward Avenue south of I-696 (Pleasant Ridge)



Woodward Avenue north of I-696 (Royal Oak & Huntington Woods)



Dimensions are suggested and subject to municipal, county and state engineering review. Buffer widths should be a minimum of 3 feet and may be adjusted as necessary. Existing street trees should be accommodated to the extent possible.



Woodward & Ten Mile (696) Concept

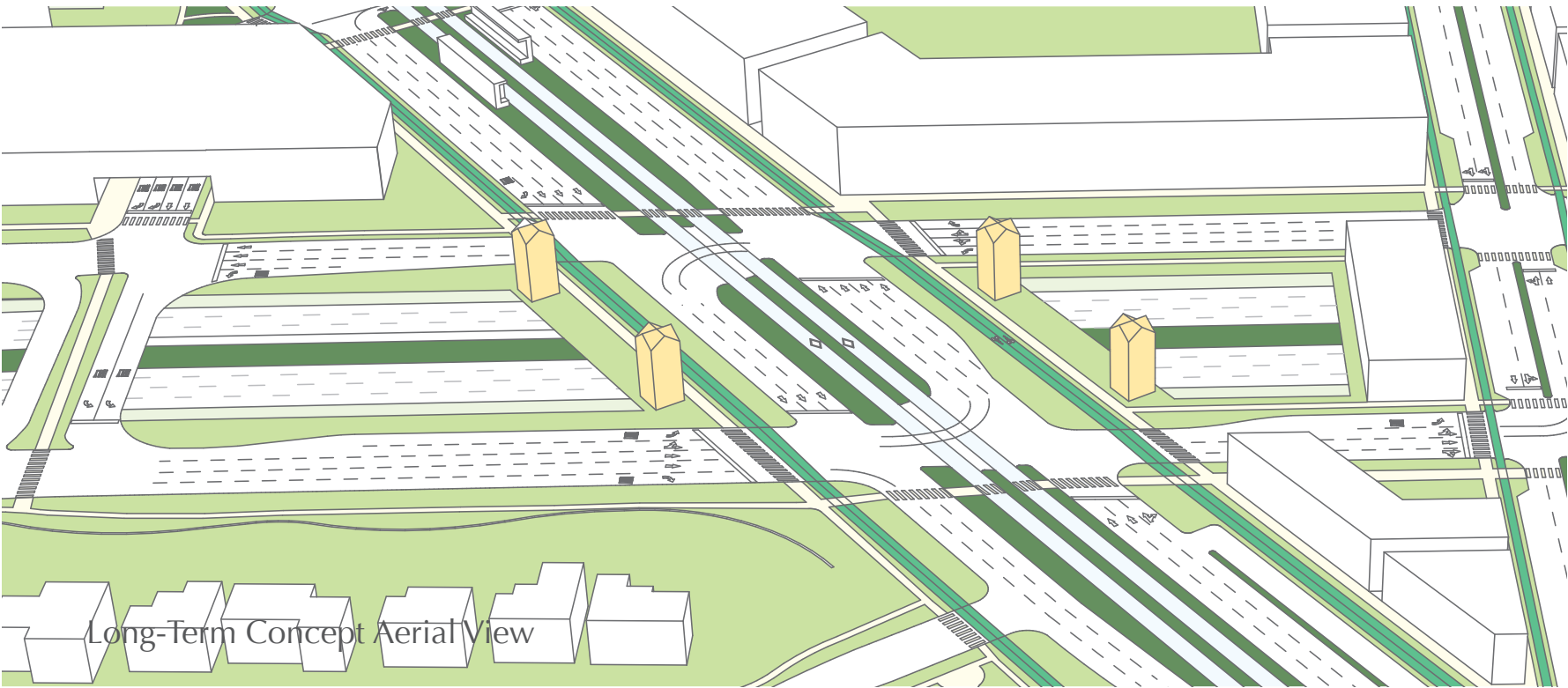
Short-Term Implementation

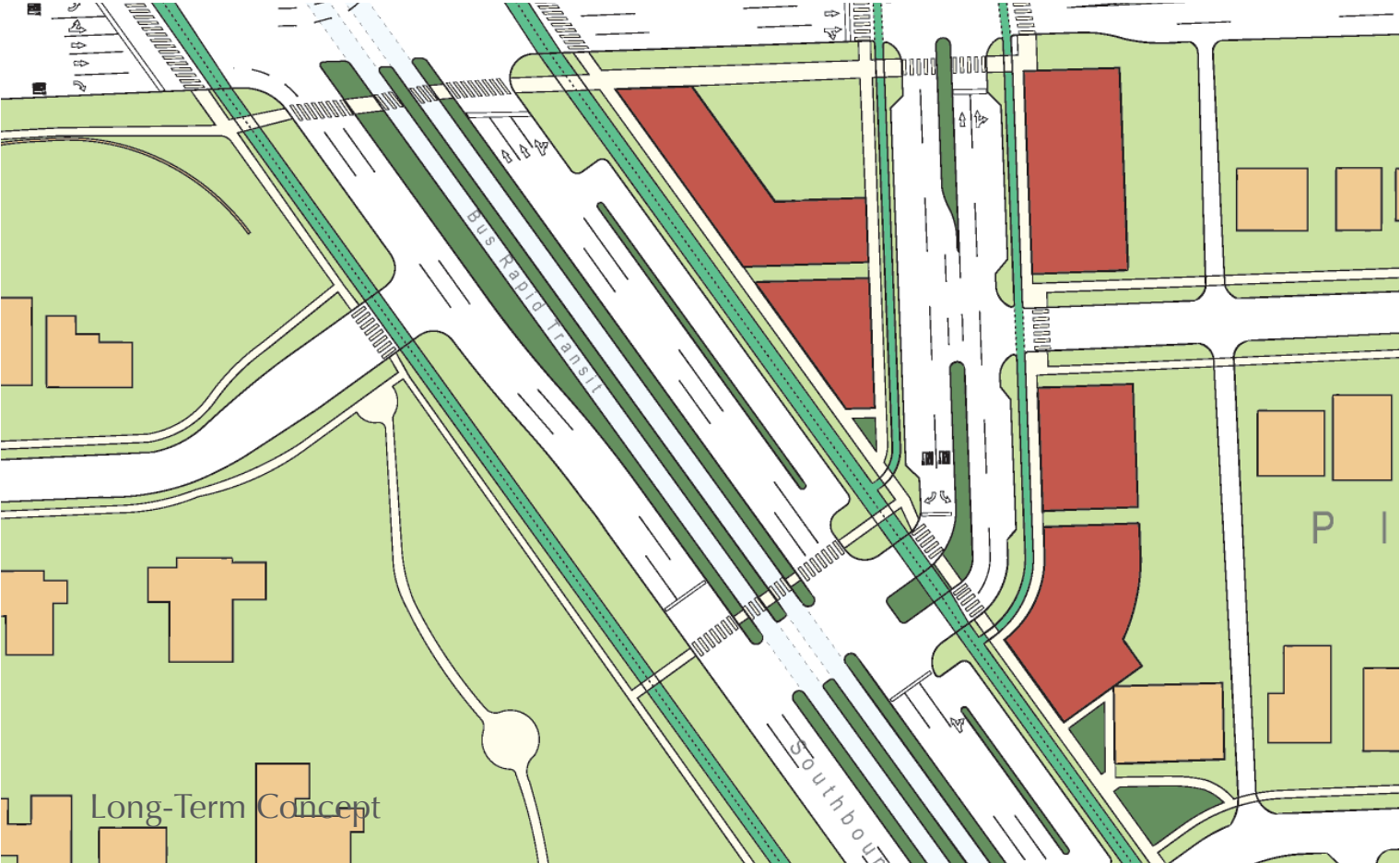
- Shorten pedestrian crossing distances across EB Ten Mile, WB Ten Mile and SB Woodward.
- Reduce dedicated turn-lanes for EB Ten Mile, WB Ten Mile and SB Woodward.
- Add buffer around pedestrian islands crossing Woodward by through-lane reduction, and turn-around size adjustment. Saw cut and paint pedestrian islands for improved comfort. Add “zebra” pedestrian crossings.
- Consider revised signage to improve driver navigation through intersection, especially for turn-lanes onto NB Woodward and Main Street.

Long-Term Concept

- Remove underpass; all Woodward traffic at-grade.
- Begin three-lane SB Woodward south of WB Ten Mile and four-lane NB Woodward north of EB Ten Mile.
- Center-running bus rapid transit lanes in median.
- Two-way cycle track on NB-SB sides of Woodward.
- Partial cap or cantilever over 696 to accomodate cycle track, widened sidewalk and civic art.
- Add civic art to properly frame the right-of-way and give area sense of arrival and identity.

Key Design Features: maximum 11’ vehicle travel lanes, minimum 10’ two-way cycle track, minimum 6’ sidewalk, minimum 10’ buffer between travel lanes and two-way cycle track, 10’-11’ bus rapid transit lane





Main & Woodward Concept

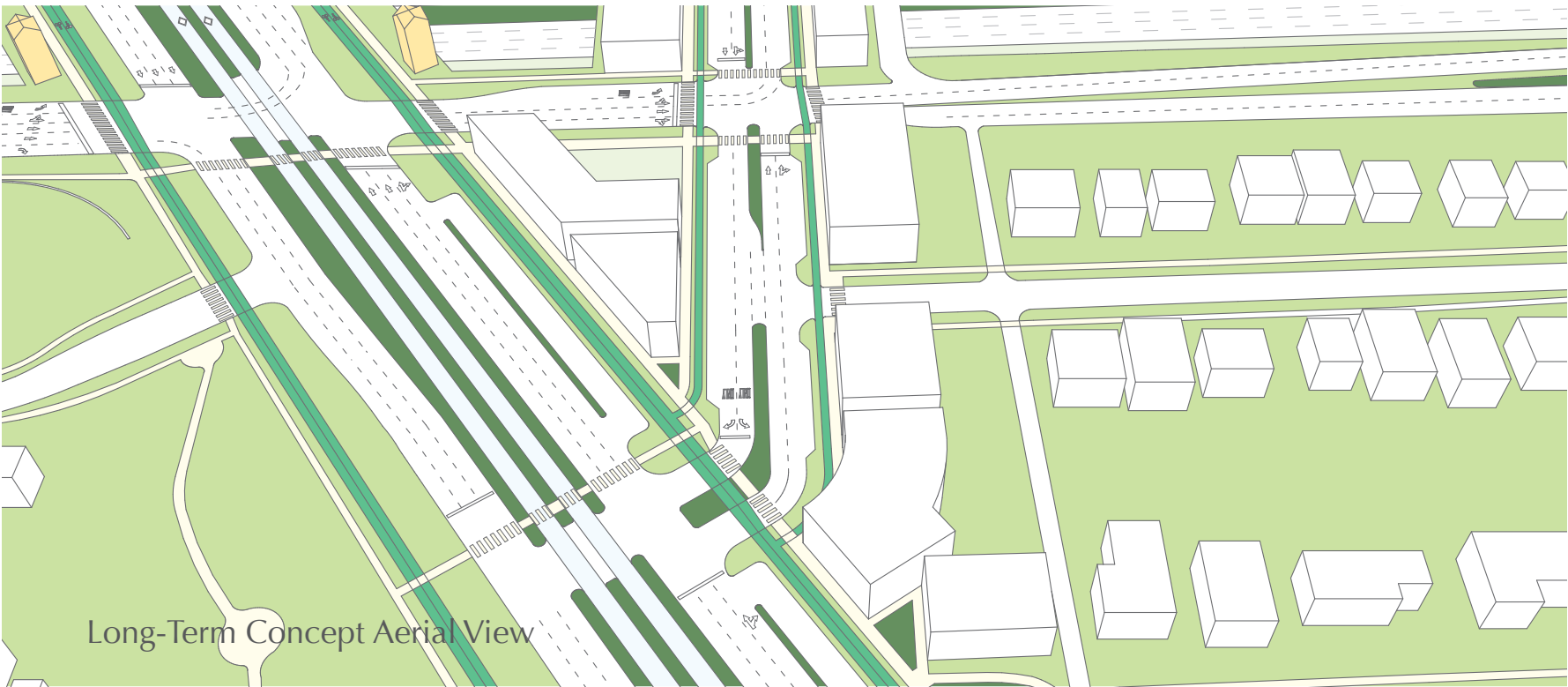
Short-Term Implementation

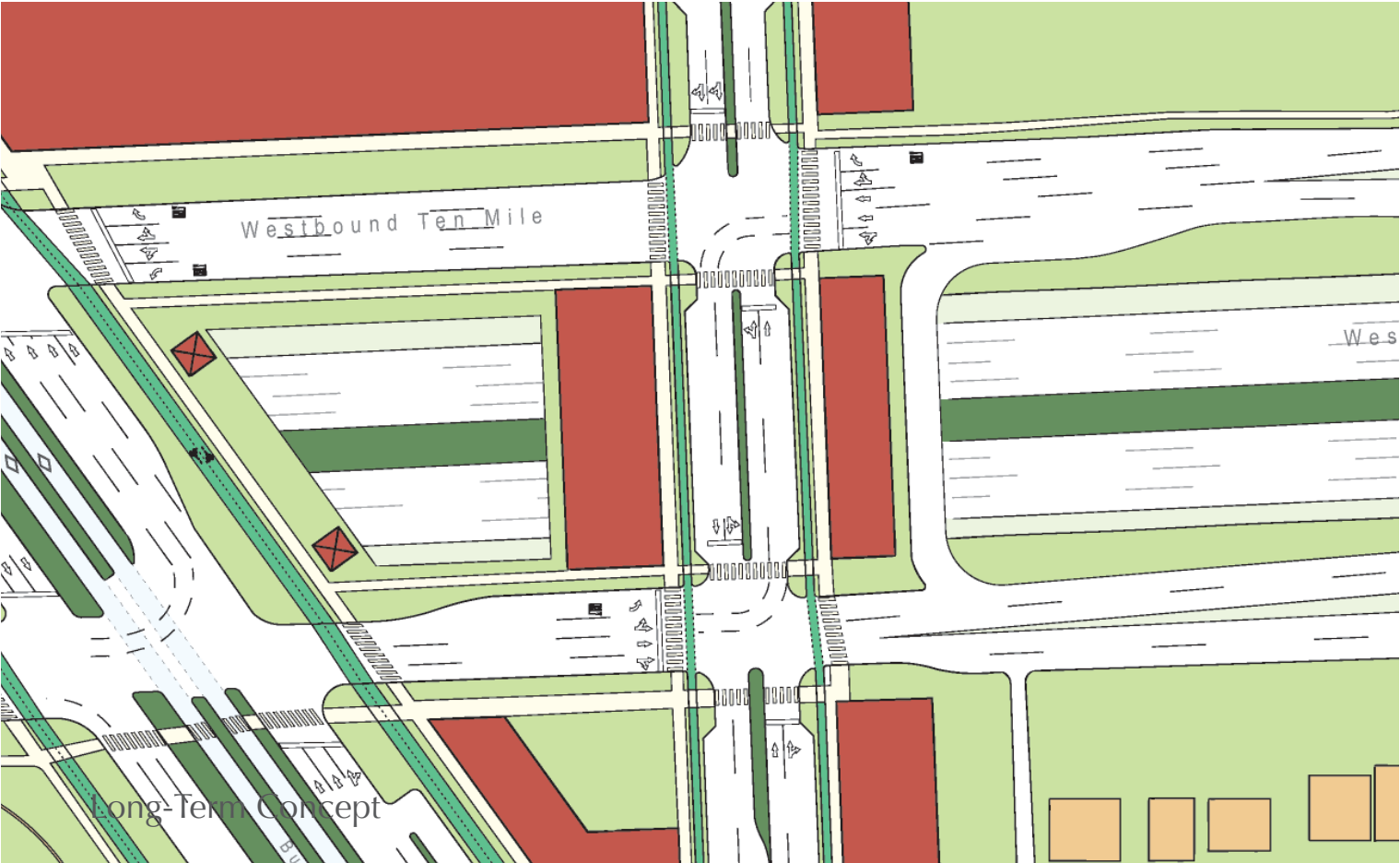
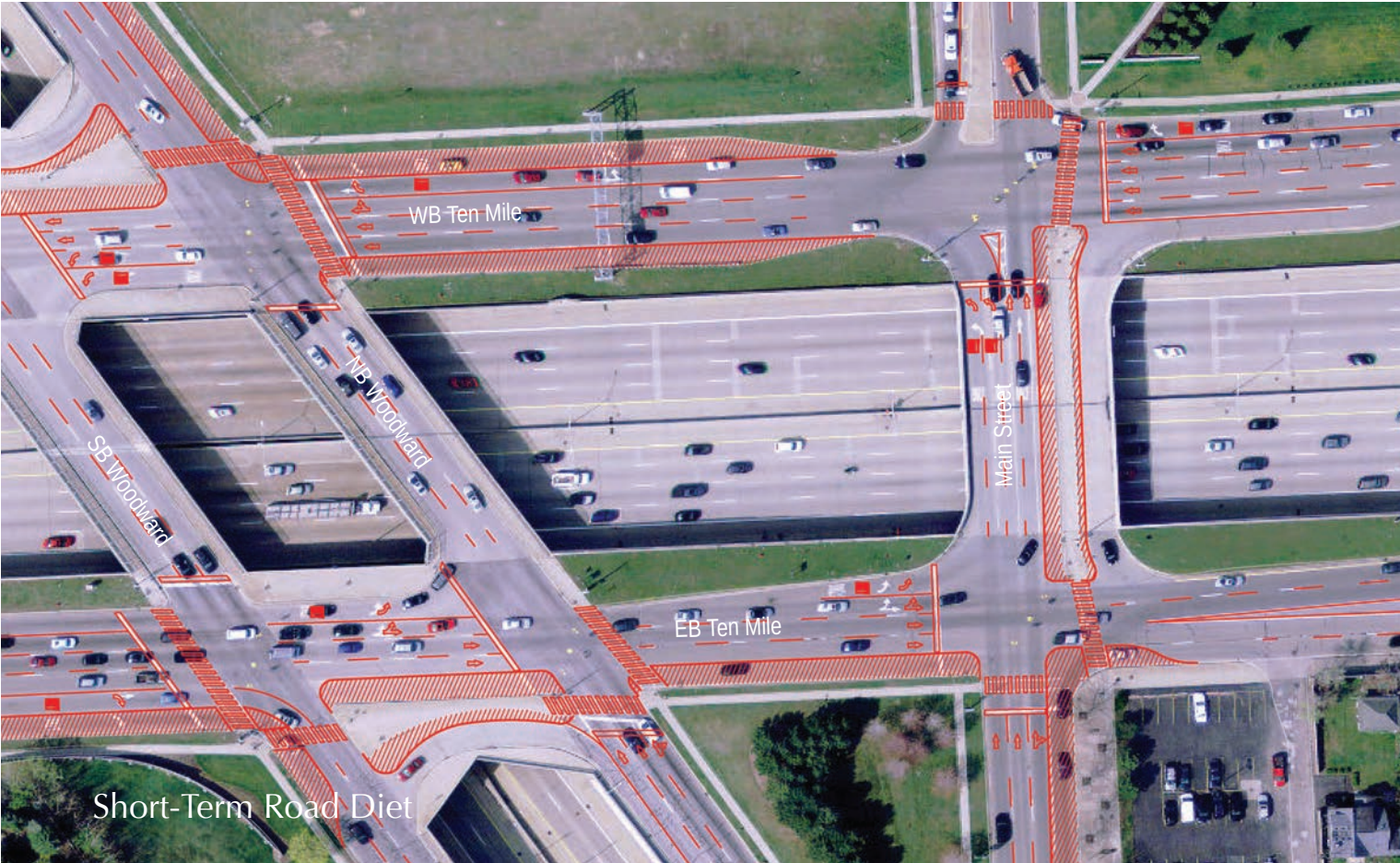
- Shorten pedestrian crossing distances across Main.
- Reduce dedicated turn-lanes for Woodward onto Main and Main onto EB Ten Mile.
- Reduce southern most through-lane on EB Ten Mile to increase buffer for sidewalk on triangle.
- Tighten turn radius for Woodward traffic turning onto Main.
- Consider screen wall to conceal parking lots east of Main.

Long-Term Concept

- Remove underpass; all Woodward traffic at-grade.
- Two-way traffic on Main extending south from Royal Oak, two travel lanes in each direction and one on-street parking lane on each side of Main. Additional parking may need to be provided in triangle.
- Install signalized intersection at Main and Woodward allowing right-turn from Woodward onto Main, and left-turn from Main onto SB Woodward. Add Woodward pedestrian crossing.
- Two-way cycle track on NB-SB sides of Woodward. Protected one-way bike-lane on NB-SB sides of Main.
- Expand public parking with local access lane on NB Woodward. Add to SB Woodward if necessary.

Key Design Features: maximum 11' vehicle travel lanes (10' lanes on Main), minimum 10' two-way cycle track, minimum 5' protected bike lane, minimum 6' sidewalk, maximum 20' local access lane, minimum 3' buffer between parking lanes and bike facilities





Main & Ten Mile (696) Concept

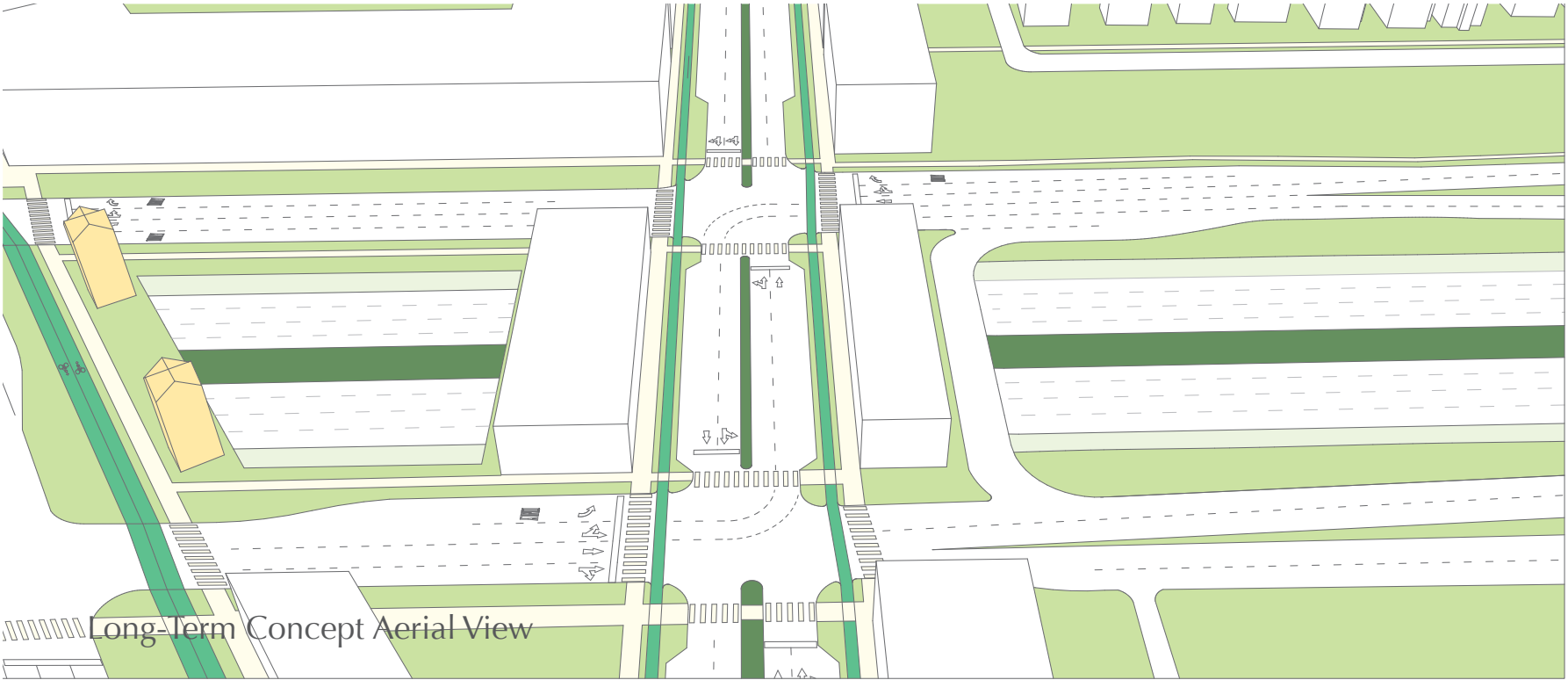
Short-Term Implementation

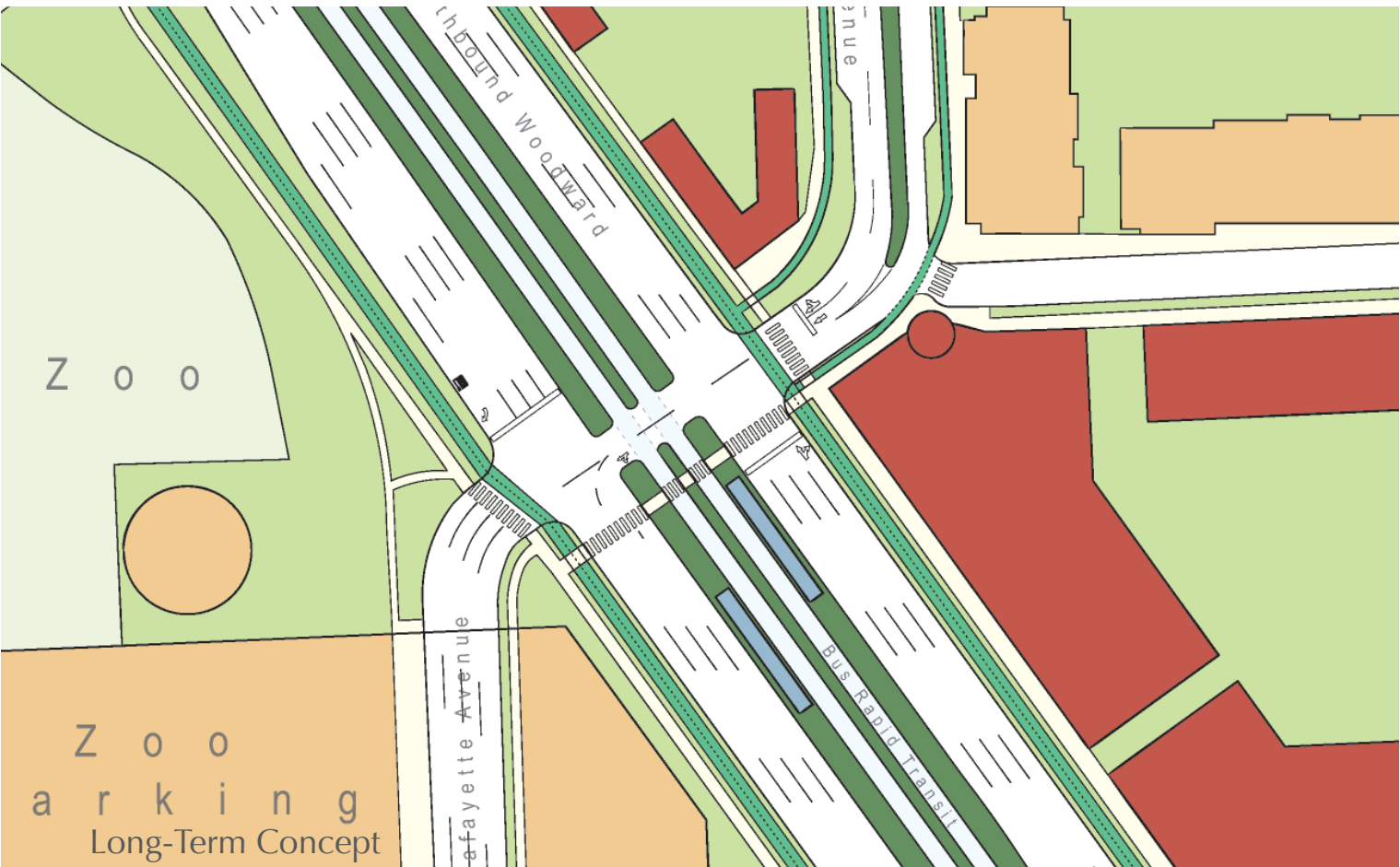
- Shorten pedestrian crossing distances across Main and EB Ten Mile.
- Add buffer around pedestrian island crossing Ten Mile by right-sizing NB Main lanes to 11’ and adjusting turn-around lane size. Saw cut and paint pedestrian islands for improved comfort.
- Install “zebra” pedestrian crossings.

Long-Term Concept

- Remove underpass; all Woodward traffic at-grade.
- Install partial cap or cantilever over 696 to expand pedestrian and bicycle facilities. Develop commercial buildings on each side of the Main cap.
- Two-way traffic on Main extending south from Royal Oak, two travel lanes in each direction and one on-street parking lane on each side of Main. Additional parking may need to be provided behind west commercial building on cap.
- Expand signalized intersection to allow turns onto Main from EB and WB Ten Mile. Allow pedestrian crossing on each side of Main.
- Protected one-way bike-lane on NB-SB sides of Main.

Key Design Features: maximum 10’ lanes on Main, minimum 5’ protected bike lane, minimum 5’ sidewalk, maximum 8’ on-street parking lane, minimum 3’ buffer between parking lane and bike facilities





Woodward & Washington/Lafayette Concept

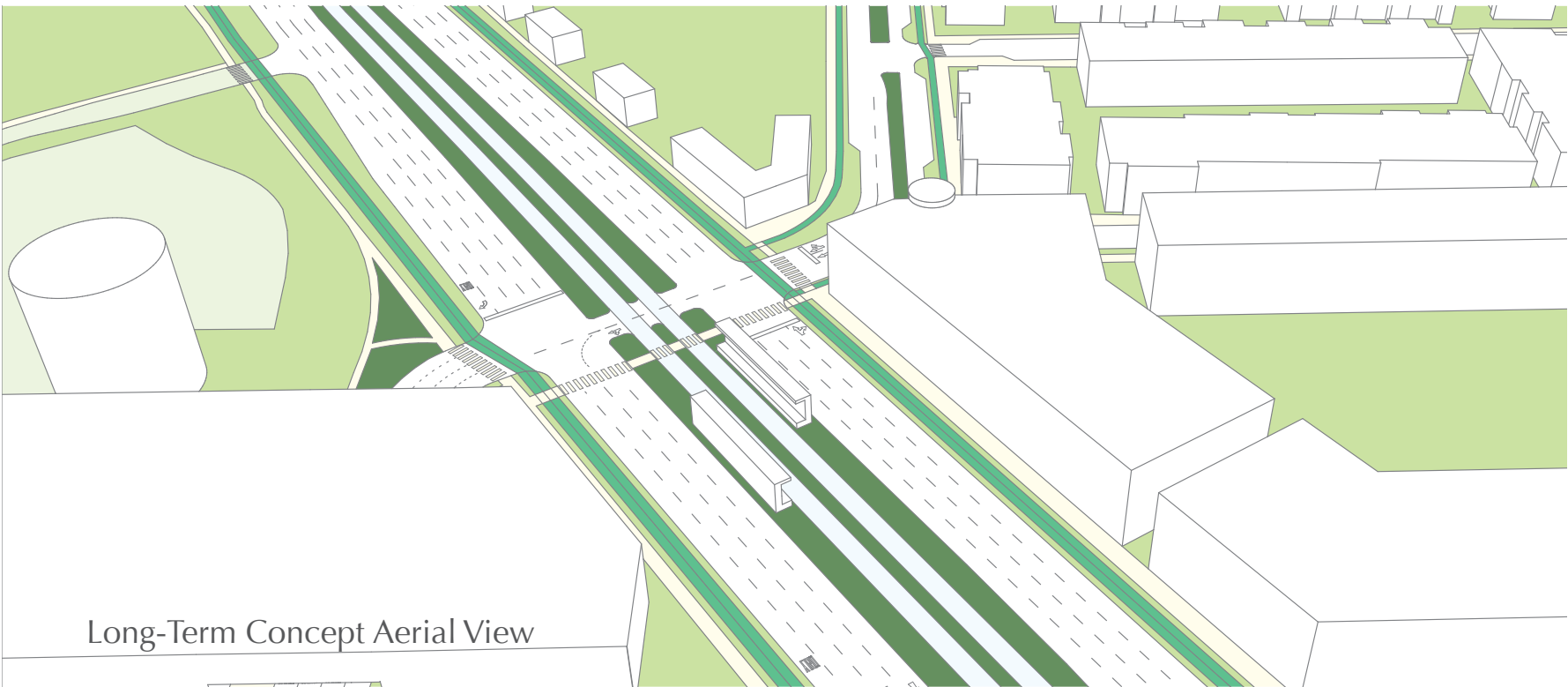
Short-Term Implementation

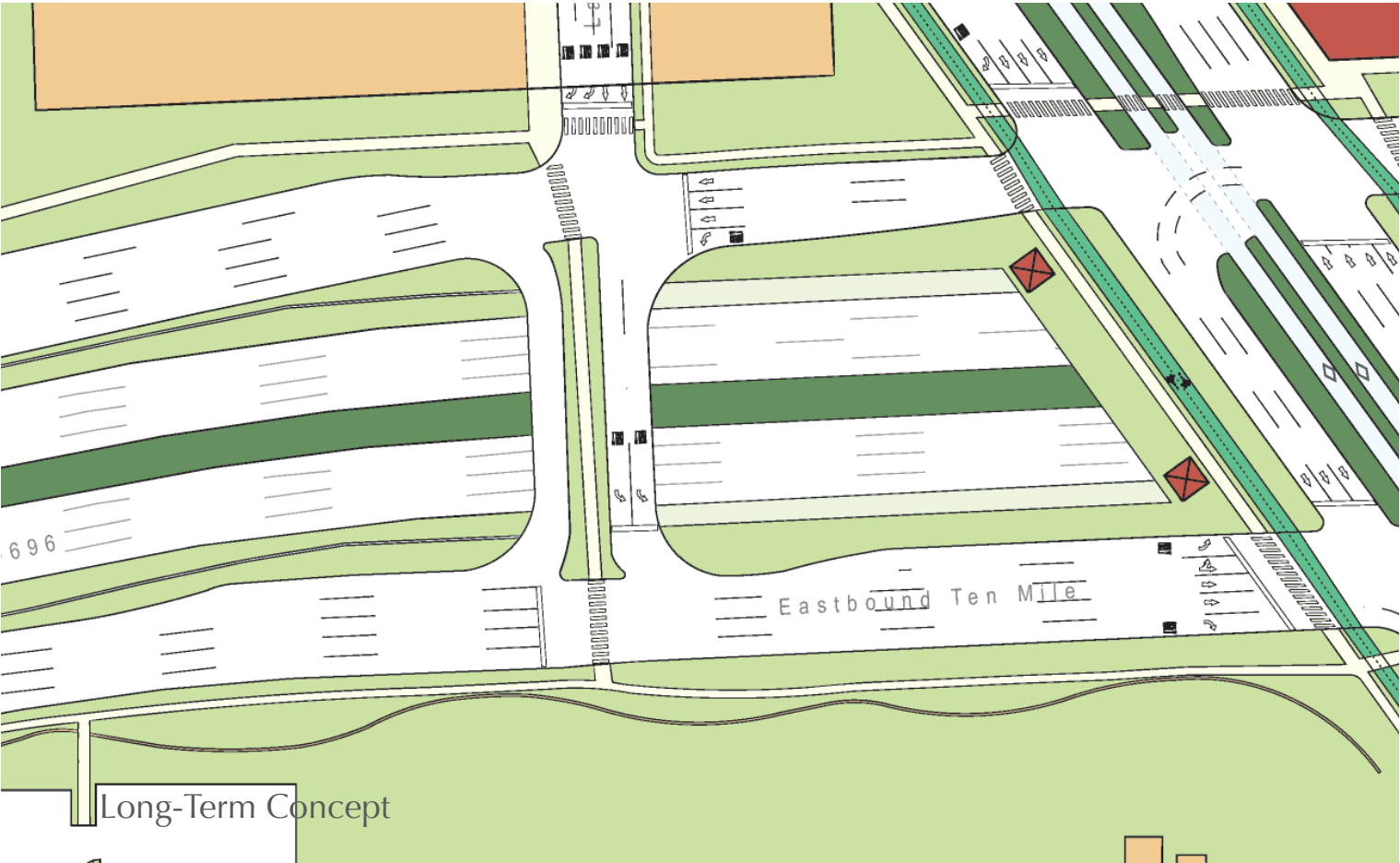
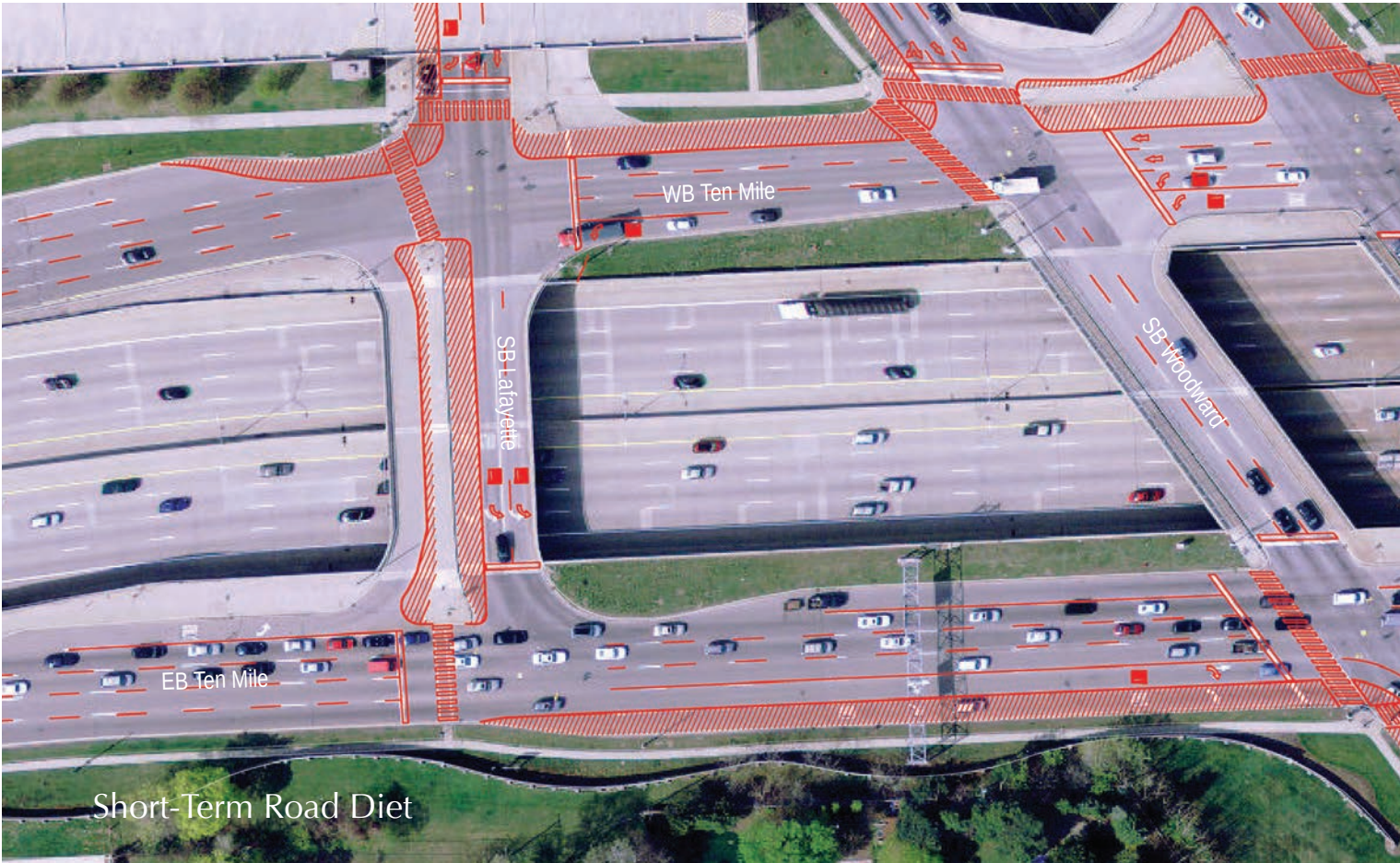
- Shorten pedestrian crossing distances across NB Washington, SB Washington and SB Lafayette by removing dedicated turn lanes.
- Add buffer along Woodward pedestrian crossing by reducing to two through-lanes moving from Washington to Lafayette. Saw cut and paint pedestrian sidewalk for improved comfort.
- Install “zebra” pedestrian crossings.

Long-Term Concept

- Remove underpass; all Woodward traffic at-grade.
- Remove all dedicated turn lanes onto NB Washington and SB Lafayette, install right-turns from Woodward to Washington and Woodward to Lafayette. Lane configuration may change if BRT route extends to Wash.
- Reduce Washington to one lane in each direction with one on-street parking lane on each side of Washington. Use excess right-of-way to install boulevard, turn lane or local BRT lane.
- Center-running bus rapid transit lanes in median. BRT station in median south of Washington.
- Two-way cycle track on NB-SB sides of Woodward. Protected one-way bike-lane on NB-SB sides of Wash.

Key Design Features: maximum 11’ lanes (10’ on Washington), minimum 10’ two-way cycle track, minimum 5’ protected bike lane, minimum 5’ sidewalk, maximum 8’ on-street parking lane, minimum 3’ buffer between parking lane and bike facilities, 10’-11’ bus rapid transit lane





Lafayette & 10 Mile (696) Concept

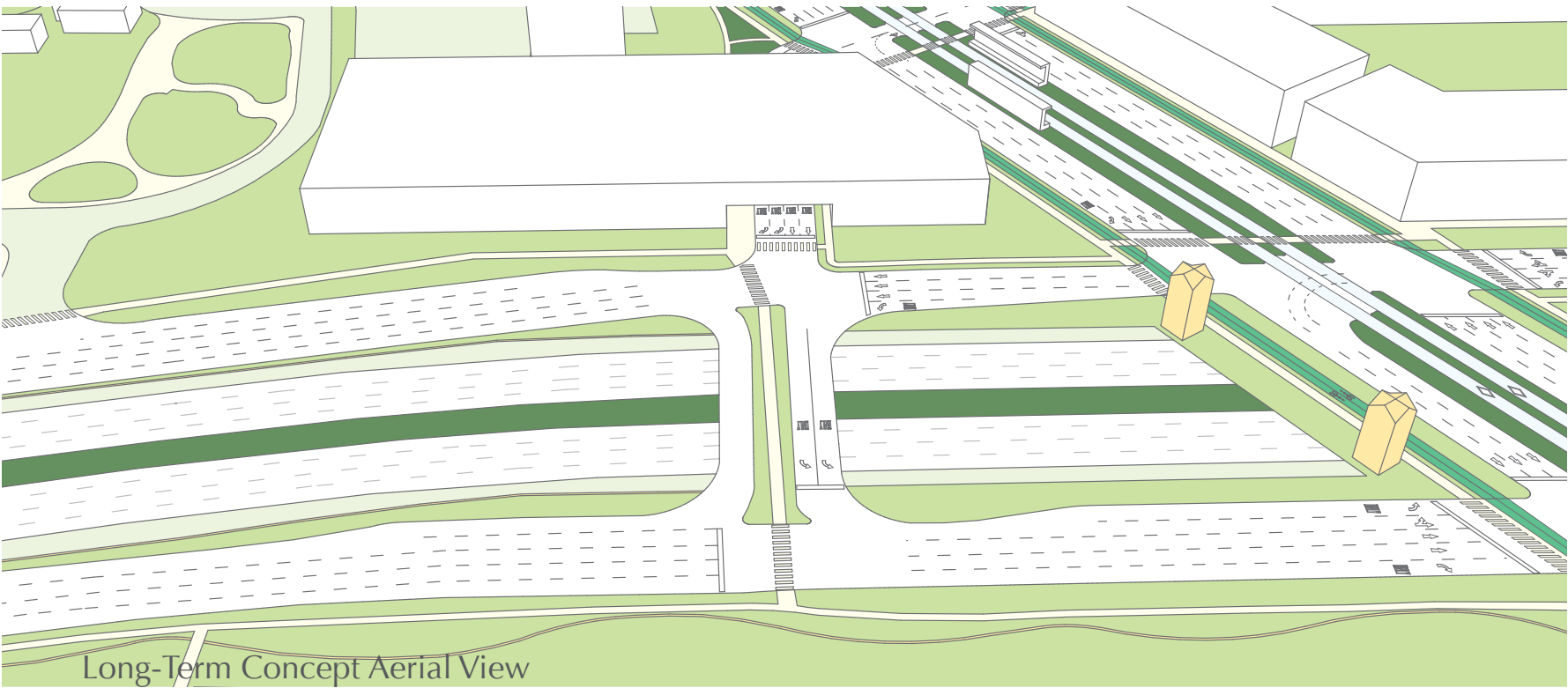
Short-Term Implementation

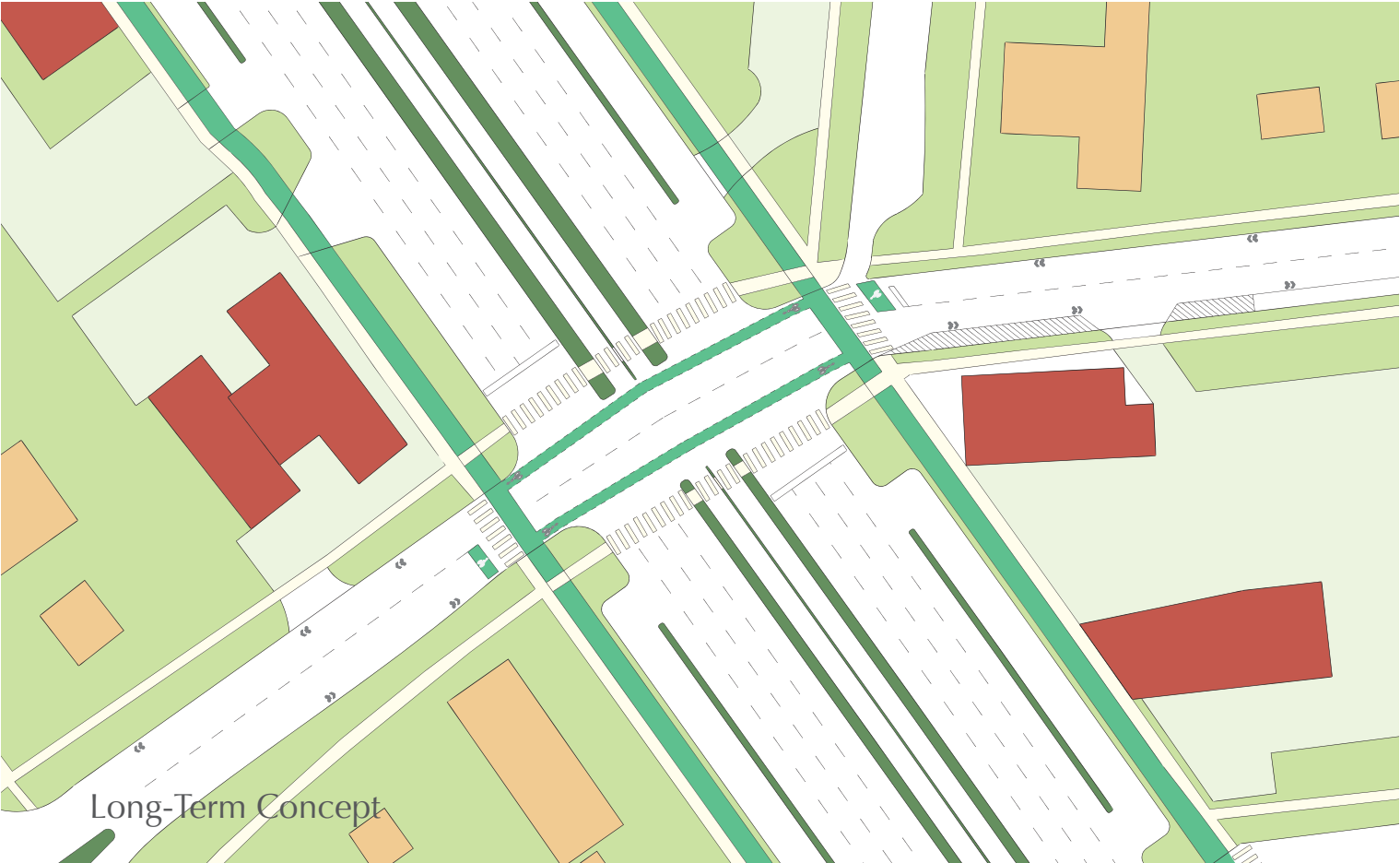
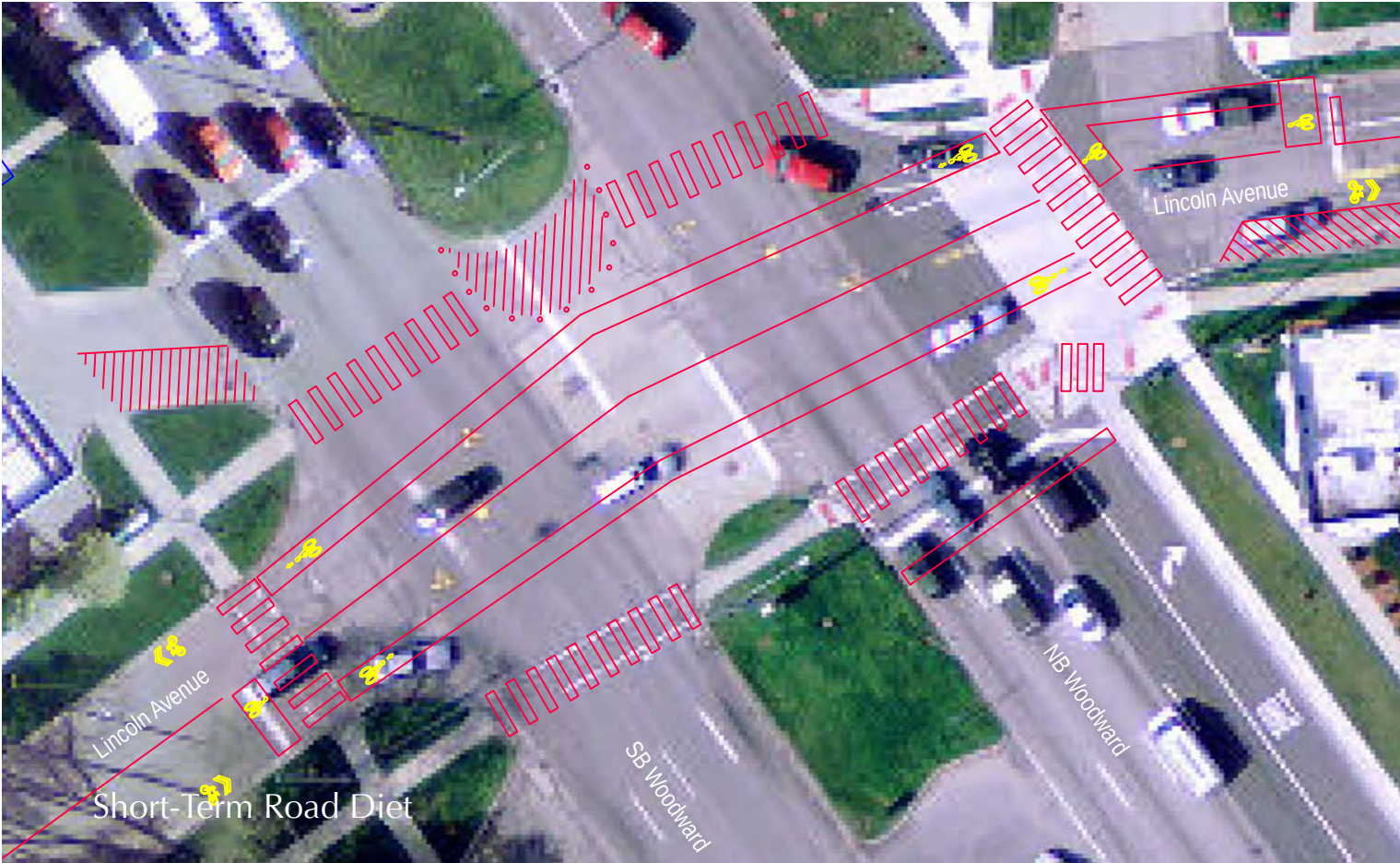
- Shorten pedestrian crossing distances across WB Ten Mile, EB Washington and SB Woodward by removing dedicated turn lanes and tightening curb radii.
- Add buffer along Ten Mile pedestrian crossing by reducing to two through-lanes moving from Lafayette to EB Ten Mile. Saw cut and paint pedestrian island for improved comfort.
- Install “zebra” pedestrain crossings.

Long-Term Concept

- Remove underpass; all Woodward traffic at-grade.
- Expand Ten Mile pedestrian crossing and plant or color for improved comfort.
- Tighten curb radii from SB Woodward and SB Lafayette to WB Ten Mile.
- Install pedestrian access through Ten Mile sound wall at Ridge Road.

Key Design Features: maximum 11’ lanes, minimum 10’ two-way cycle track, minimum 5’ sidewalk, minimum 3’ buffer between parking lane and bike facilities,





Woodward & Lincoln Concept

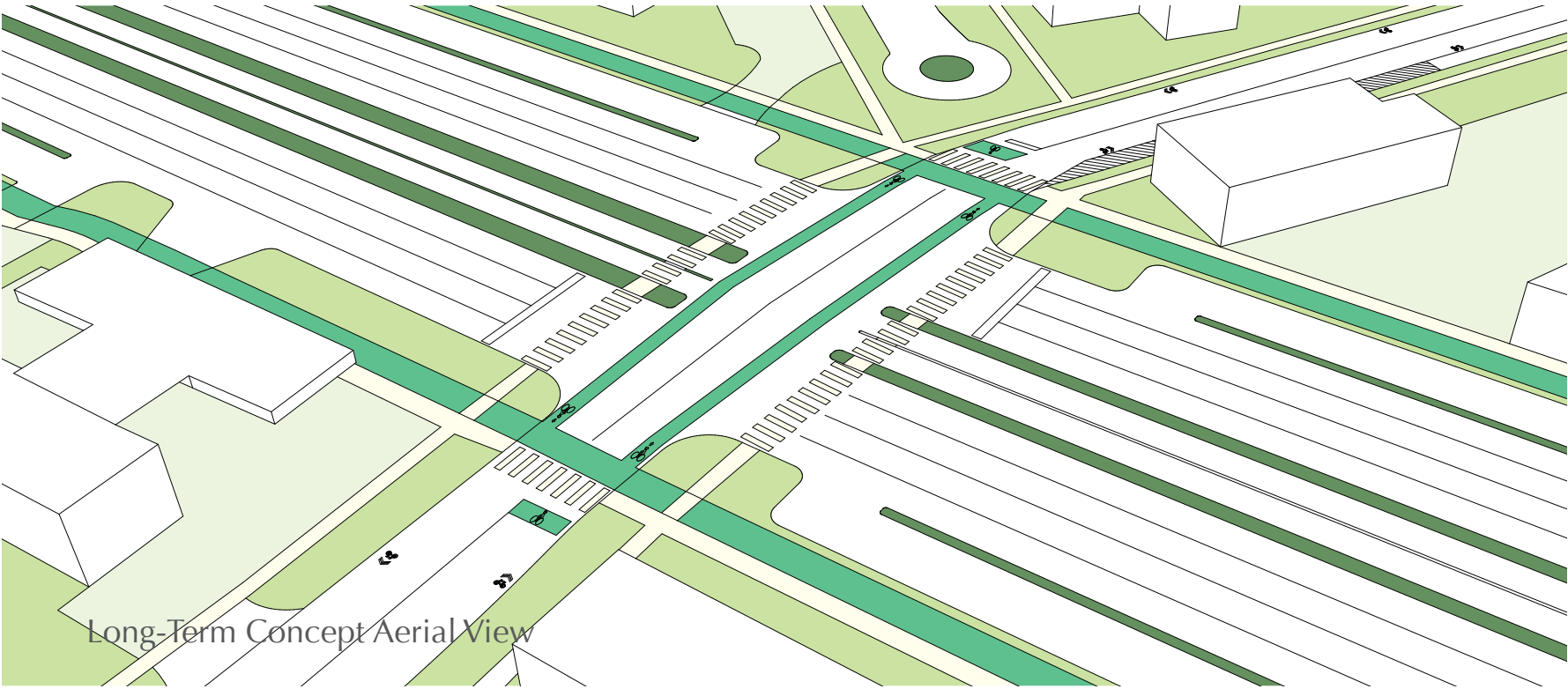
Short-Term Implementation

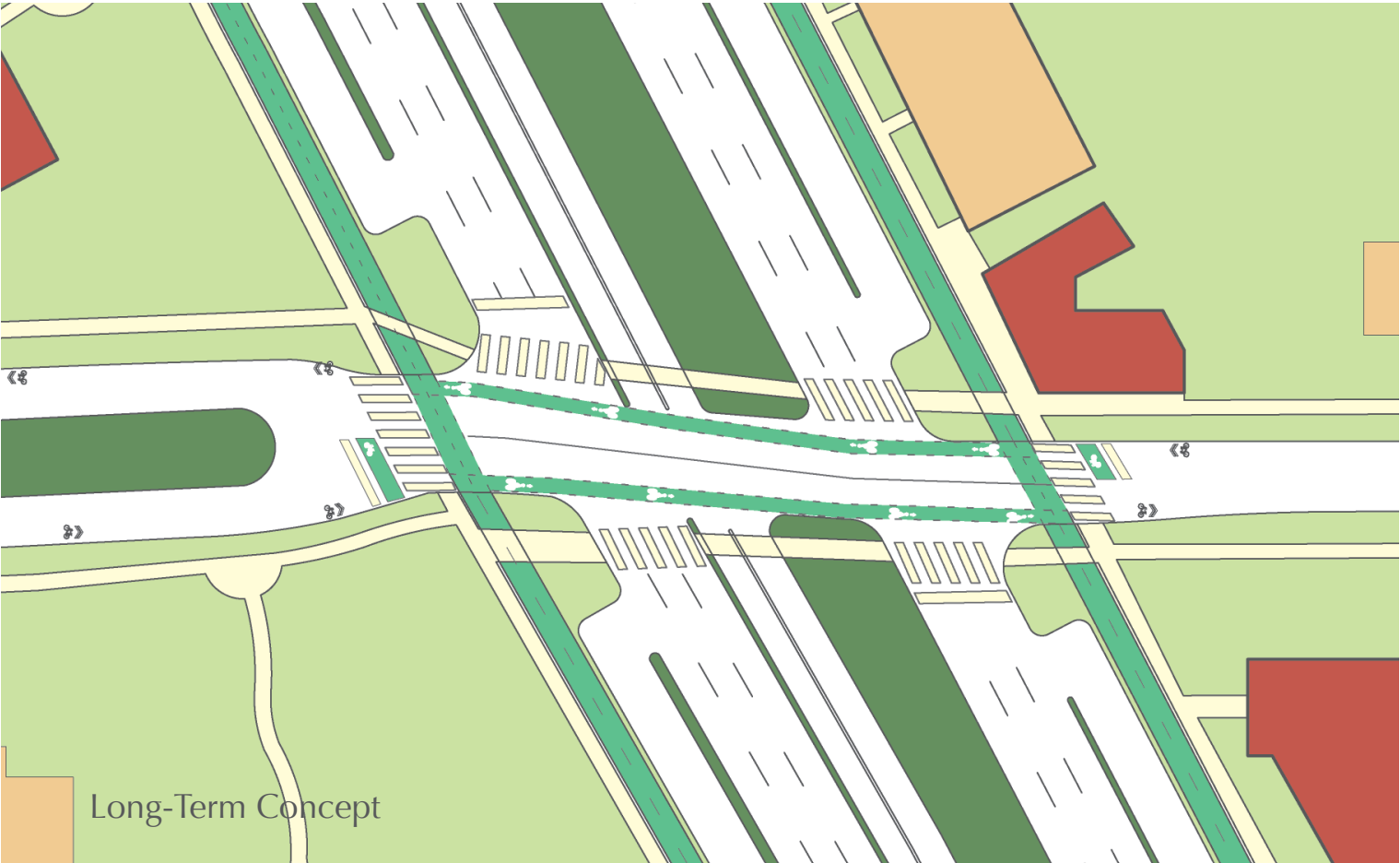
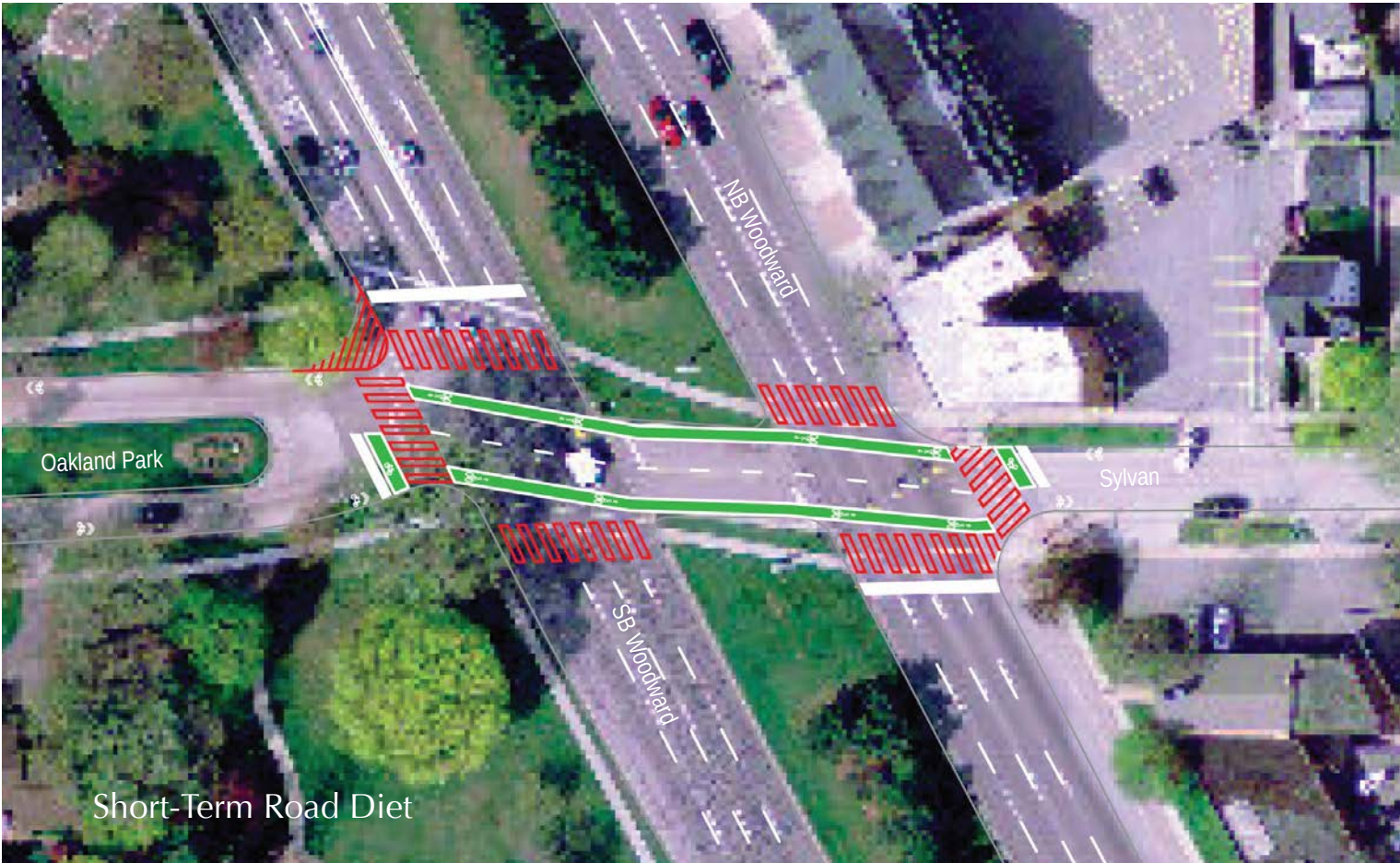
- Make pedestrian crossing more direct by extending north boulevard.
- Add bicycle box at signal and provisional bike-lane through intersection. Add sharrow markings to Lincoln.
- Reduce gas station curb cut to avoid pedestrian conflict with exiting vehicles.
- Move stop line south on NB side of Woodward to improve visibility of pedestrians in crosswalk.
- Revise signage before the underpass entrance to better describe local and express routes.
- Add public sidewalk for access from Huntington Road to SB Woodward (Zoo & Huntington Woods).

Long-Term Concept

- Four lanes of Woodward traffic in each direction. Local access lane on NB-SB sides of Woodward.
- Two-way cycle track on NB-SB sides of Woodward.
- Remove southern gas station curb cut.
- Center-running bus rapid transit lanes in median.
- Remove redundant curb cuts or consolidate curb cuts through shared-access agreements.
- Close through access to Hendrie by installing a cul-de-sac. Access still available at 6th Street.

Key Design Features: maximum 11' lanes (10' on Lincoln), minimum 8' two-way cycle track, minimum 5' sidewalk, minimum 3' buffer between parking lane and bike facilities, sharrow markings along Lincoln, minimum 5' provisional bike lane crossing Woodward





Woodward & Oakland Park/Sylvan Concept

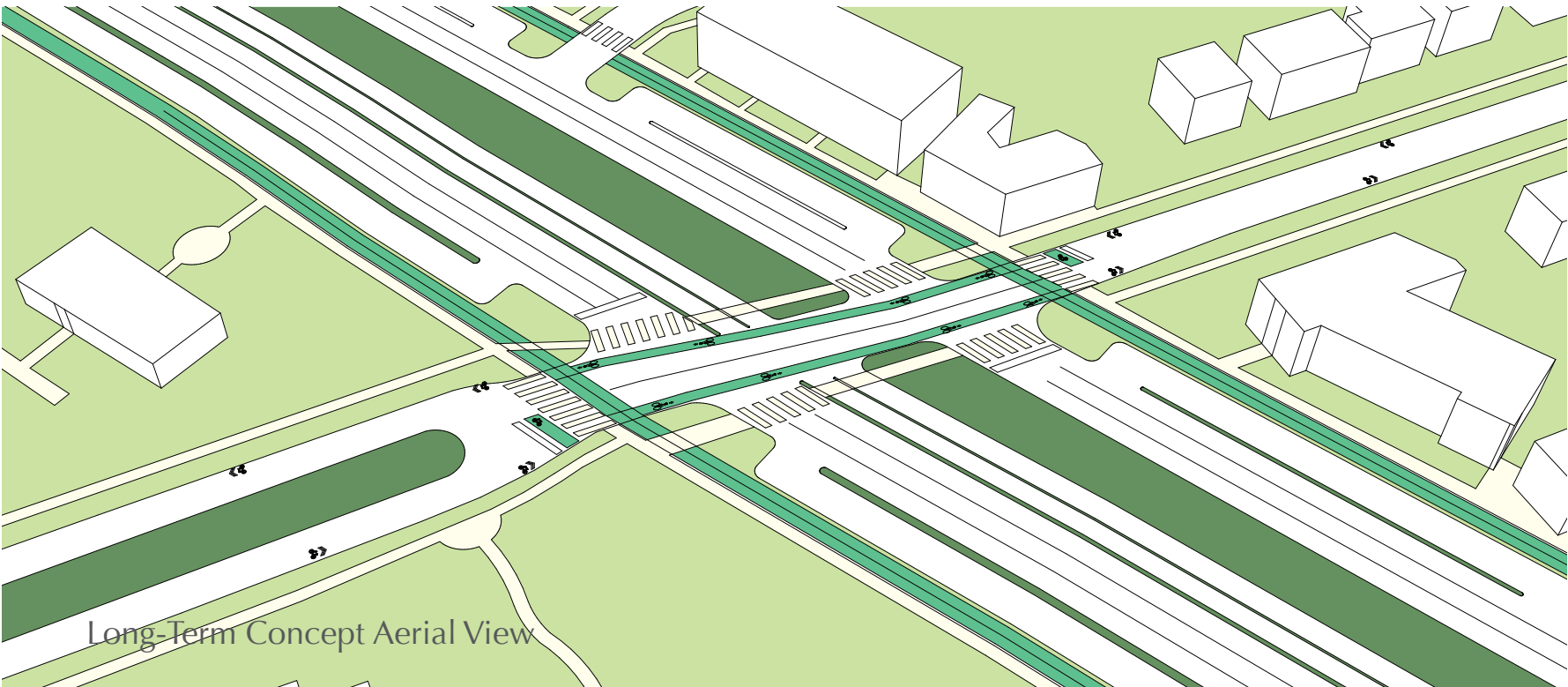
Short-Term Implementation

- Make pedestrian crossing more direct by reducing curb radius at SB Woodward and Oakland Park.
- Add bicycle box at signal and provisional bike-lane through intersection. Add sharrow markings or bike route signage to Oakland Park and Sylvan.
- Install wide, “zebra” crosswalks and move vehicle stop lines to improve pedestrian visibility.

Long-Term Concept

- Three lanes of Woodward traffic in each direction. Local access lane on NB-SB sides of Woodward.
- Two-way cycle track on NB-SB sides of Woodward.
- West-edge running bus rapid transit lanes in median to preserve existing trees.
- Redesign residential street intersections with Woodward to tighten curb radii and create 90° turns for improved pedestrian visibility.
- Realign Oakland Park with Sylvan if existing tree dies.

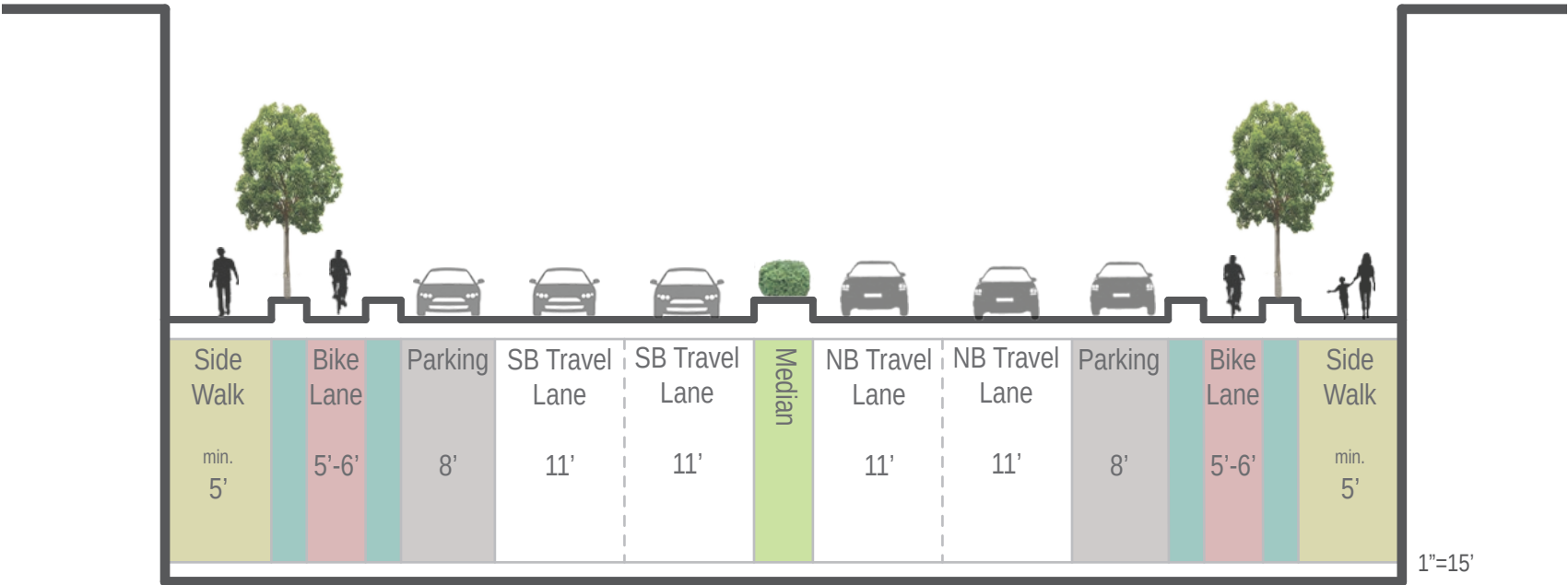
Key Design Features: maximum 11’ lanes, minimum 8’ two-way cycle track, minimum 5’ sidewalk, minimum 3’ buffer between parking lane and bike facilities, sharrow markings along Oakland Park/Sylvan, minimum 5’ provisional bike lane crossing Woodward



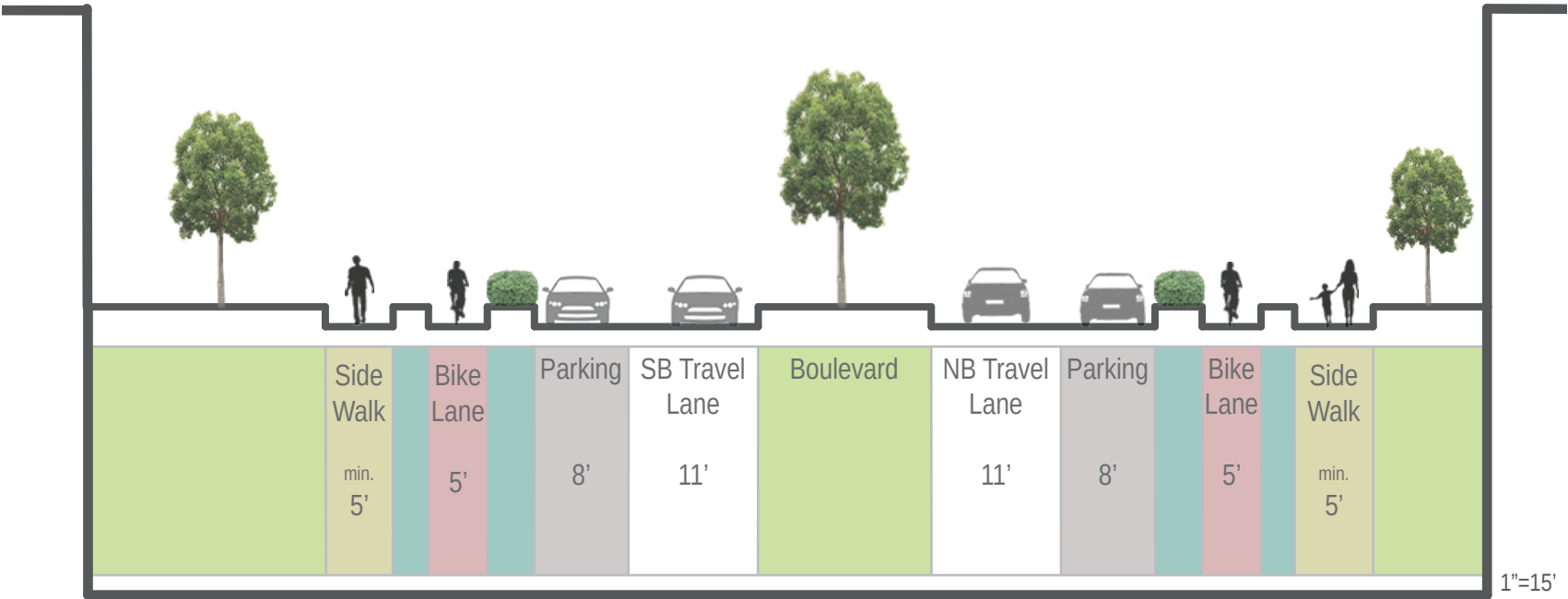
Woodward-696 Conceptual Complete Streets Study

Main, Ridge & Washington Cross-Sections

Main Street (Pleasant Ridge & Royal Oak)



Washington Avenue (Royal Oak)



Dimensions are suggested and subject to municipal, county and state engineering review. Buffer widths should be a minimum of 3 feet and may be adjusted as necessary. Existing street trees should be accommodated to the extent possible.

Ridge Road (Pleasant Ridge)

