

University Avenue & Midvale Boulevard

Scenario

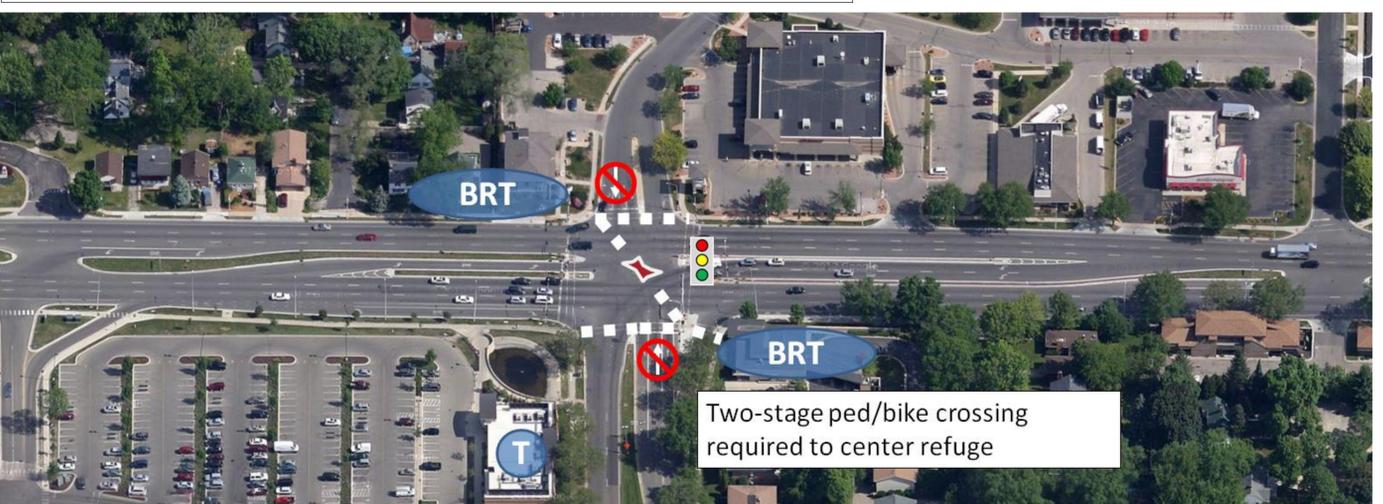
Base Conditions



LB1: Eliminate North-South Split Signal Phasing



LB2: Eliminate Northbound and Southbound Through



Pedestrian

Concerns regarding time to cross and small refuge areas within University Ave.

Longer signal phases for crossing, potential to expand refuge areas

Two-stage crossing only to a center refuge between NB and SB left-turning vehicle paths

Bicycle

Difficult crossing

Longer signal phases for crossing

Two-stage crossing only to a center refuge between NB and SB left-turning vehicles

Transit

Existing Metro stops:

- Outbound west of Midvale Blvd.
- Inbound east of Midvale Blvd.
- Southbound south of University Ave.

Generally compatible with BRT and local service

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Motor Vehicles (115% of existing traffic)

- Overall Intersection LOS E (70.7 s/vh)
- 5 movements at LOS F
- 3 additional movements approaching LOS F

- Overall Intersection LOS D (41.0 s/vh)
- 2 movements at LOS F
- 3 additional movements approaching LOS F

- Overall Intersection LOS C (25.6 s/vh)
- 3 movements approaching LOS F
- Restricts some access

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Pedestrian

Concerns regarding time to cross and small refuge areas within University Ave.

Bicycle

Difficult crossing

Transit

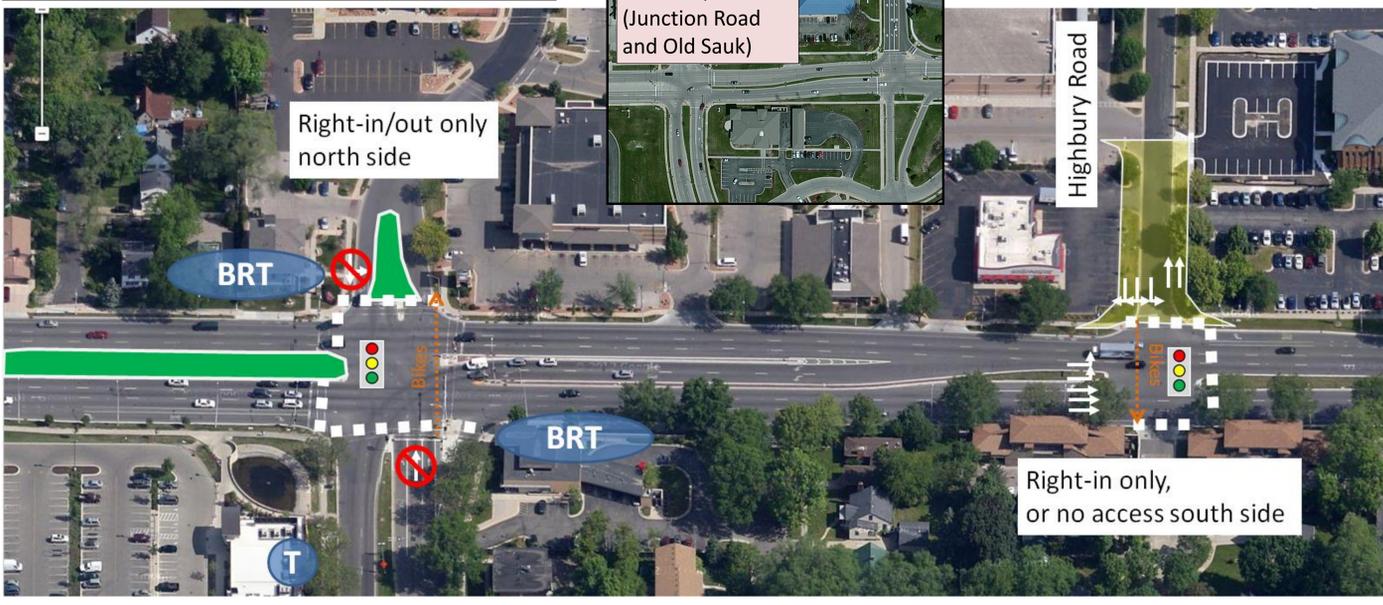
Existing Metro stops:

- Outbound west of Midvale Blvd.
- Inbound east of Midvale Blvd.
- Southbound south of University Ave.

Motor Vehicles (115% of existing traffic)

- Overall Intersection LOS E (70.7 s/vh)
- 5 movements at LOS F
- 3 additional movements approaching LOS F

MB1: Create two Tee Intersections



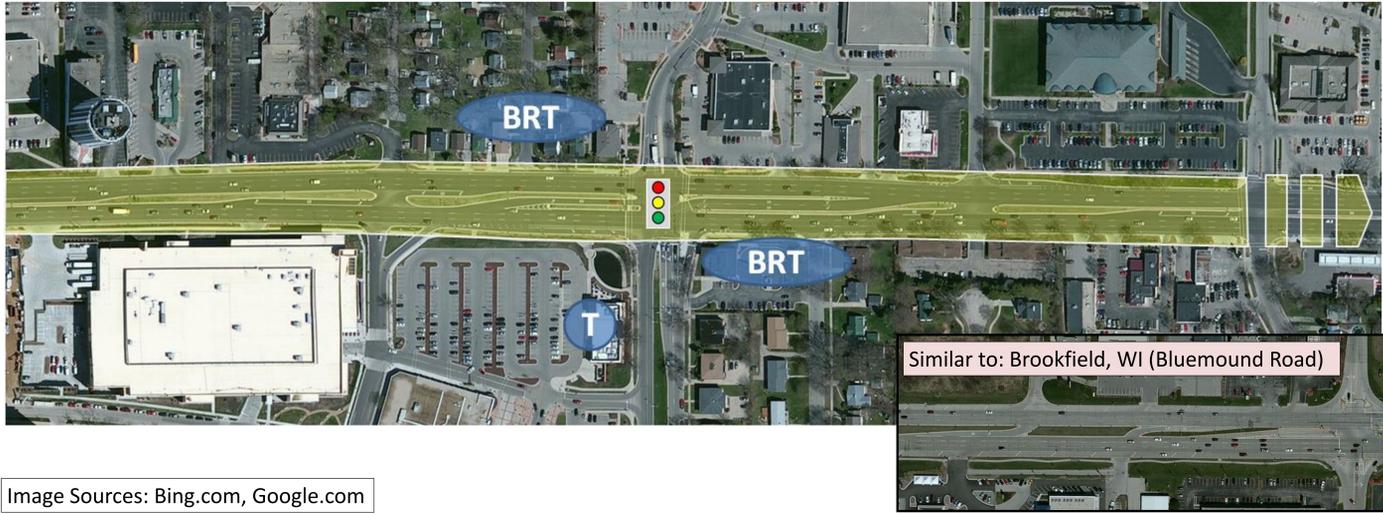
Two-stage ped crossing on one side only (west at Midvale, east at Highbury)

North-south crossing in one direction only at each intersection: (northbound at Midvale, southbound at Highbury)

Generally compatible with BRT and local service

- Midvale
 - Overall Intersection LOS C (26.2 s/vh)
 - 2 movements approaching LOS F
 - Restricts some access
- Highbury
 - Overall Intersection LOS D (47.1 s/vh)
 - 0 movements approaching LOS F
 - Restricts some access

MB2: 8-Lane Corridor (4 All-Purpose Lanes each direction)



- Longer signal phases for crossing
- Longer distances to cross
- Little/no terrace along University Avenue for eastbound and westbound pedestrians

- Longer distances to cross
- More lanes to navigate eastbound and westbound

Generally compatible with BRT and local service

- Overall Intersection LOS C (31.3 s/vh)
- 2 movements at LOS F
- 3 add'l movements approaching LOS F

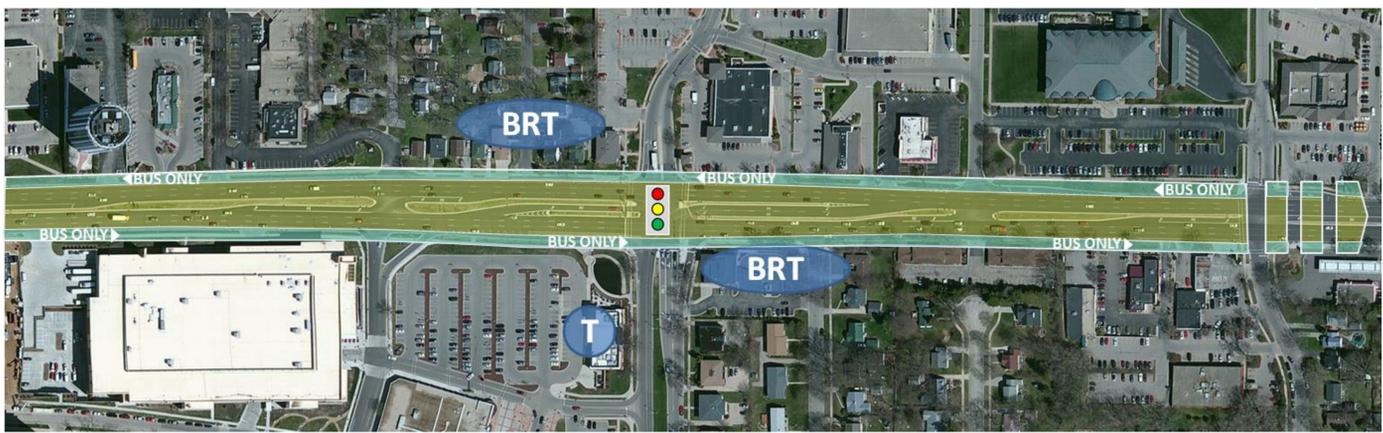
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MB3: 8-Lane Corridor (3 All-Purpose Lanes, 1 Bike/Transit/Right-Turn Lane each direction)



HB2: Grade Separated Westbound Lefts and Northbound Rights



Image Sources: Bing.com, Google.com

Pedestrian

Concerns regarding time to cross and small refuge areas within University Ave.

- Longer signal phases for crossing
- Longer distances to cross
- Little/no terrace along University Avenue for eastbound and westbound pedestrians
- Similar conditions under bridge as today but with less turning traffic
- Longer crossing distances due to wider footprint to accommodate walls and structure

Bicycle

Difficult crossing

- Longer distances to cross
- More lanes to navigate eastbound and westbound
- Wider on-street east-west accommodation, but shared with buses and right turns
- Similar conditions under bridge as today but with less turning traffic
- Longer crossing distances due to wider footprint to accommodate walls and structure

Transit

Existing Metro stops:

- Outbound west of Midvale Blvd.
- Inbound east of Midvale Blvd.
- Southbound south of University Ave.

Improves travel times and reliability for BRT and local service

- Generally compatible with BRT and local service east-west
- Requires relocation of local service transit stop on southbound Midvale Boulevard farther south

Motor Vehicles (115% of existing traffic)

- Overall Intersection LOS E (70.7 s/vh)
- 5 movements at LOS F
- 3 additional movements approaching LOS F
- Overall Intersection LOS E (70.7 s/vh)
- 5 movements at LOS F
- 3 additional movements approaching LOS F
- Overall Intersection LOS C (34.8 s/vh)
- 1 movement approaching LOS F

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Pedestrian

Concerns regarding time to cross and small refuge areas within University Ave.

Bicycle

Difficult crossing

Transit

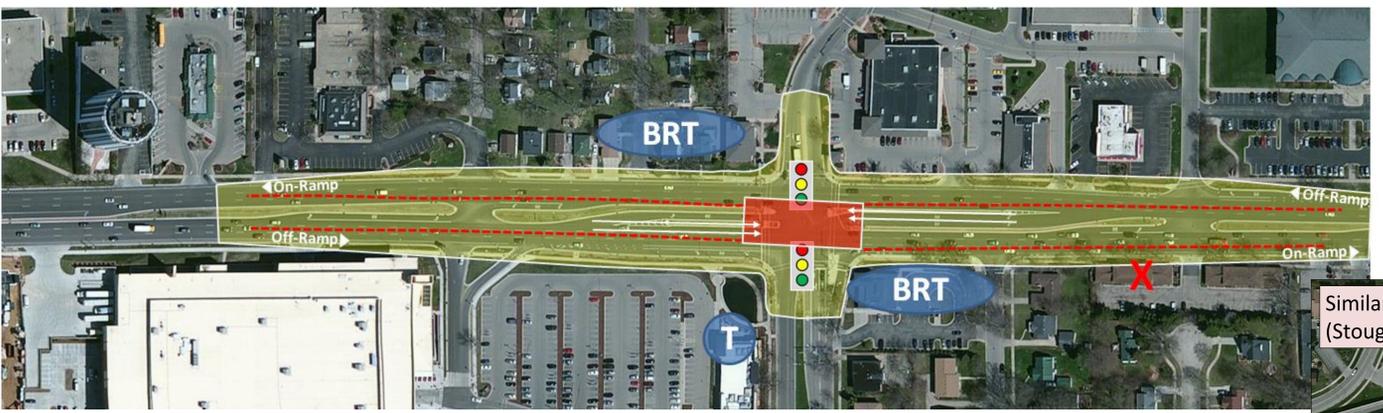
Existing Metro stops:

- Outbound west of Midvale Blvd.
- Inbound east of Midvale Blvd.
- Southbound south of University Ave.

Motor Vehicles (115% of existing traffic)

- Overall Intersection LOS E (70.7 s/vh)
- 5 movements at LOS F
- 3 additional movements approaching LOS F

HB4: Tight Urban Diamond Interchange (possible Campus Drive extension)



Similar to: Madison, WI (Stoughton Road over Milwaukee St.)

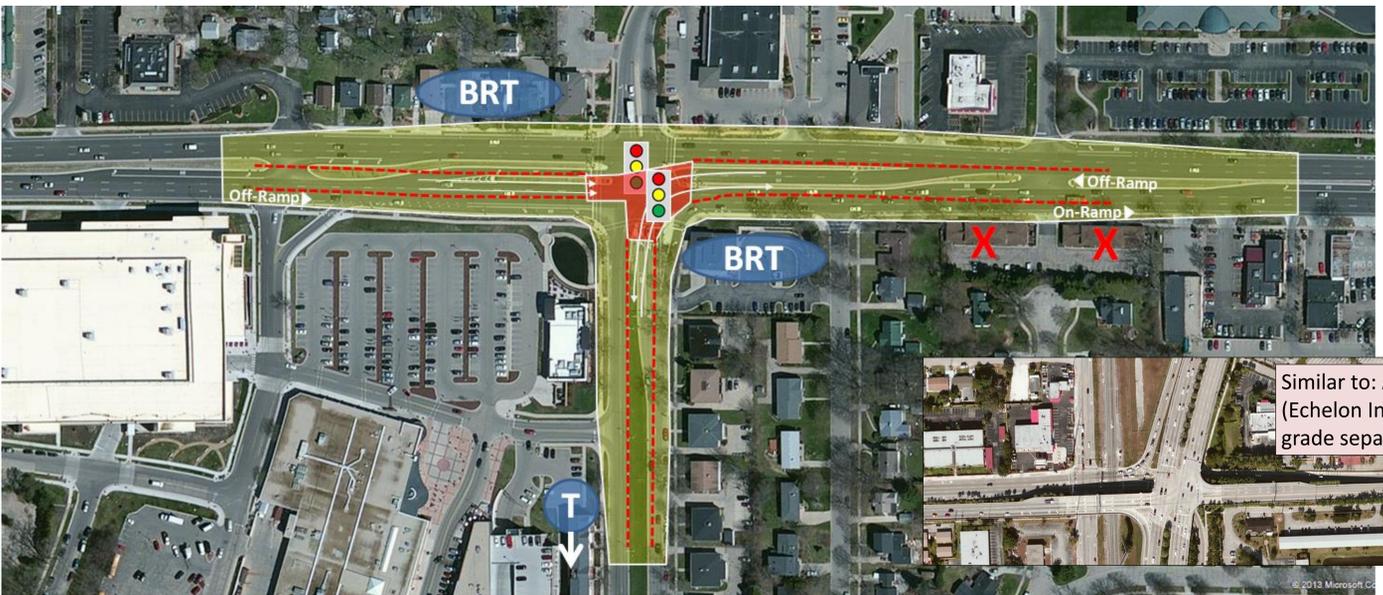
- Short crossing lengths and reduced traffic through signals
- Two intersections to cross north-south, rather than one

- Short crossing lengths and reduced traffic through signals
- Two signals to cross north-south

Generally compatible with BRT and local service, but would require frequent entering and exiting along the corridor

- Westbound Ramps
 - Overall Intersection LOS C (29.2 s/vh)
- Eastbound Ramps
 - Overall Intersection LOS B (12.7 s/vh)

HB5: Grade Separate Eastbound Through, Westbound Left, and Northbound Right



Similar to: Aventura, FL (Echelon Interchange: two signals, grade separated)

- Similar conditions under bridge as today but with less traffic
- Longer crossing distances due to wider footprint to accommodate walls and structure

- Similar conditions under bridge as today but with less traffic
- Longer crossing distances due to wider footprint to accommodate walls and structure

- Generally compatible with BRT and local service east-west
- Requires relocation of local service transit stop on southbound Midvale Boulevard farther south

- Midvale Signal
 - Overall Intersection LOS B (19.2 s/vh)
 - 1 movement at LOS F
- Elevated EBT, WBL, NBL Signal
 - Overall Intersection LOS C (24.7 s/vh)

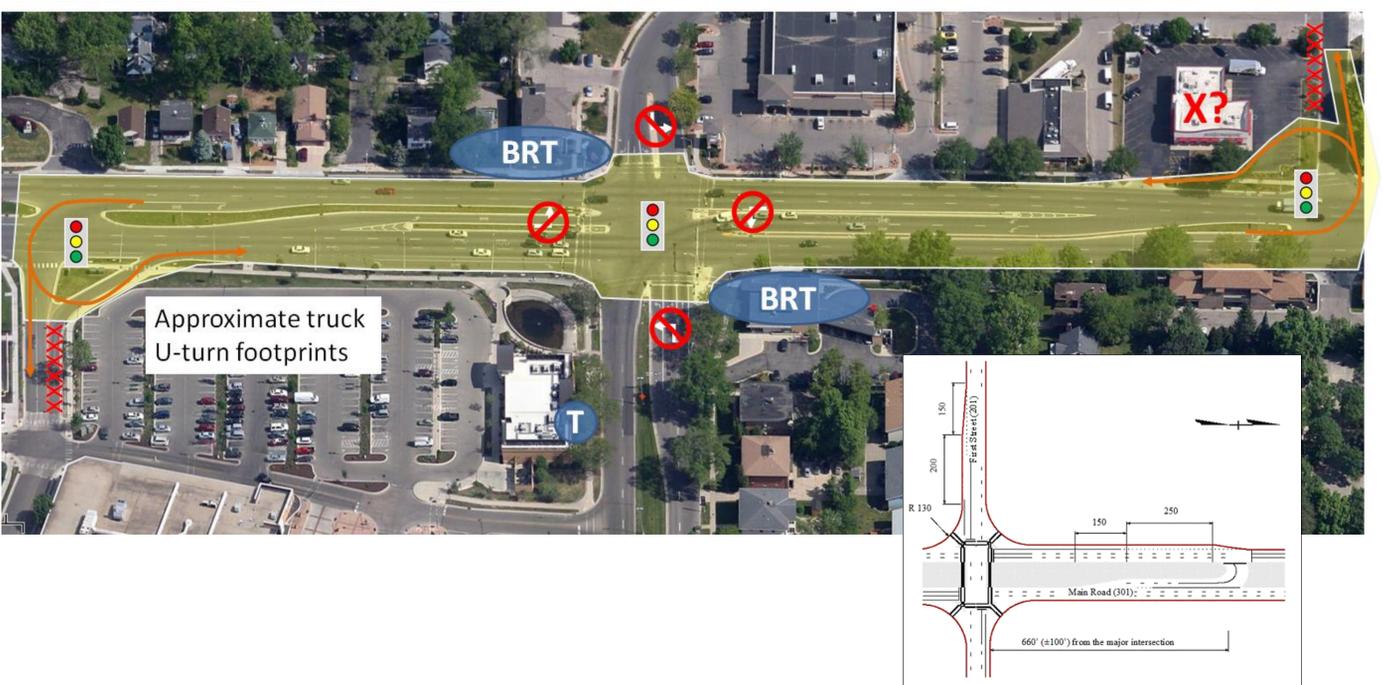
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HB6: Indirect Left-Turn Corridor



Pedestrian

Concerns regarding time to cross and small refuge areas within University Ave.

- Significantly longer signal phases for crossing (two-phase signal)
- Eliminates left-turning vehicle conflicts
- Could also add two-stage signalized crossings at east and west u-turn locations

Bicycle

Difficult crossing

- Significantly longer signal phases for crossing (two-phase signal)
- Eliminates left-turning vehicle conflicts
- Could also add two-stage signalized crossings at east and west u-turn locations

Transit

Existing Metro stops:

- Outbound west of Midvale Blvd.
- Inbound east of Midvale Blvd.
- Southbound south of University Ave.

- Generally compatible with BRT
- Local outbound service to southbound Midvale Boulevard requires buses to make a U-turn

Motor Vehicles (115% of existing traffic)

- Overall Intersection LOS E (70.7 s/vh)
- 5 movements at LOS F
- 3 additional movements approaching LOS F

- Midvale Signal
 - Overall Intersection LOS C (21.5 s/vh)
 - 1 movement approaching LOS F
- West U-Turn Signal
 - Overall Intersection LOS B (11.3 s/vh)
 - Restricts some access
- East U-Turn Signal
 - Overall Intersection LOS A (7.4 s/vh)
 - 1 movement approaching LOS F
 - Restricts some access

Dismissed Alternatives:

- Providing Bus/Bike/Right-Turn Lane without Expansion (Poor operations without significant MV demand reduction)
- Flomax Intersection / Diverging Arterial (Poor operations and intimidating/unconventional bike/ped)
- Single Point Urban Interchange (higher impacts than HB1 – Tight Diamond Urban Interchange)
- Continuous Flow Intersection (poor bike/ped accommodations, large footprint, and no significant benefits over other alts)