

Southern Maryland Rapid Transit Study



4/19/2016



ITE Mid-Colonial District Conference April 19, 2016

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Corridor Highway Overview

MD 5/US 301 from Branch Avenue Metrorail Station to Waldorf-White Plains

- 18.7 mile-long corridor
- Regionally significant commuter corridor
- Cross-sections vary from 4-lane to 9-lane in sections
- Road median's width varies between 6' to 70'
- 5 Interchanges & 1 Overpass
- 22 signalized/ 25 non-signalized intersections
- Numerous driveways
- Significant directional peak-period congestion AM and PM

Slide 4

SJM1

add location map

Seneschal, Jacquelyn M., 4/4/2016



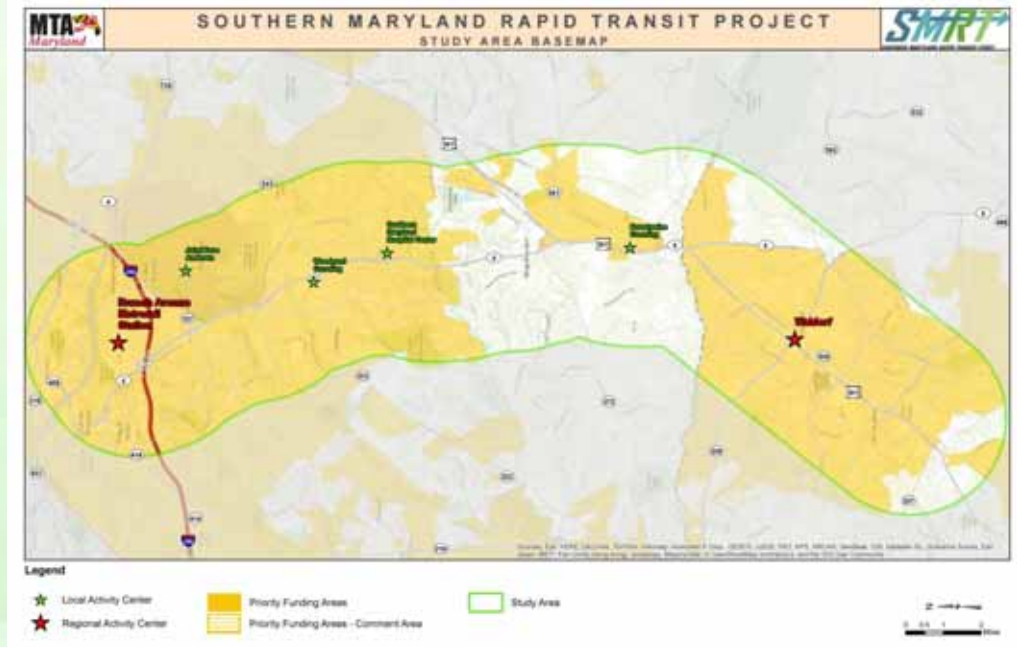
Corridor Land Use Overview

Regional and Local Activity Centers:

- Branch Avenue Metrorail Station (Regional)
- Joint Base Andrews*
- Woodyard Crossing
- Southern Maryland Hospital Center*
- Brandywine Crossing
- Waldorf (Regional)

**Major Employment Centers*

*Excludes post offices, state and local governments.
(Source: Economic development agencies statewide and Maryland Department of Business and Economic Development, November 2013)*





Key Challenges in 2016

- Selecting transit technology - LRT or BRT
- Crossing the Washington Beltway
- Constrained ROW at Joint Base Andrews
- Addressing project travel demand
- Redevelopment/Jobs Creation
- Promoting denser development at key locations
- Preserving ROW for a long-term effort



Alternative Technologies

Light Rail Transit

- Better perceived rider experience
- Higher infrastructure cost
- Higher capacity vehicles
- Lower operating costs
- Fixed routing

Bus Rapid Transit

- Lower infrastructure cost
- “Fancy bus” passenger experience
- Limited vehicle capacity
- Flexible routing
- Higher operating costs



Alternative Alignments

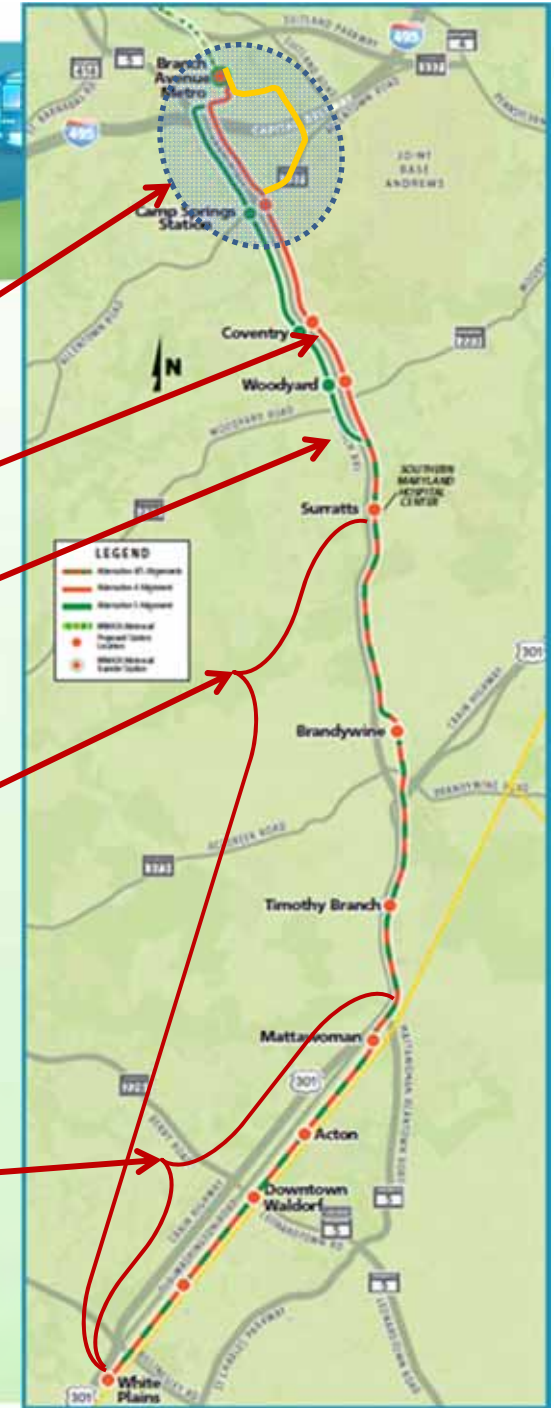
Eight beltway crossing options still in play.
One provides for station at JBA.

Alternative 4 – East of MD 5, closest
to JBA property boundary

Alternative 5 – West of MD
5, more residential impacts

South of Woodyard Road (MD 223),
one alignment east of MD5/US 301.

South of Timothy Branch Station,
alignment parallels CSX tracks.





Alternative Stations

| Station Name (north to south) | Alternative 4 | Alternative 5 | Type |
|---------------------------------------|--|-------------------|------|
| Branch Avenue Metro | Branch Avenue Metro Station | | A-1 |
| Joint Base Andrews – Beltway Option 8 | Between Auth Rd. and Suitland Pky | N/A | B-2 |
| Camp Springs | South of MD 337 | South of MD 337 | B-3 |
| Coventry | South of Coventry | North of Coventry | B-3 |
| Woodyard | South of Woodyard | North of Woodyard | B-1 |
| Surratts | 3 Options, Southern Maryland Hospital Center | | B-2 |
| Brandywine | North of MD 223 | | C-4 |
| Timothy Branch | South of Chadds Ford Road | | B-3 |
| Mattawoman | At Substation Road | | A-1 |
| Acton | At Acton Lane | | B-1 |
| Downtown Waldorf | At Leonardtown Road | | B-1 |
| Smallwood | At Smallwood Drive south of MD 925 | | B-3 |
| White Plains | DeMarr Road south of US 301 | | C-4 |

Key to Station Types

- A-1** Intermodal – Town Center/Mixed-Use
- B-1** Mid-Line Local – Town Center/Mixed-Use
- B-2** Mid-Line Local – Special Anchor
- B-3** Mid-Line Local – Residential Neighborhood
- C-4** Regional Collector – Rural/Isolated





Access Needs by Station Type

| | | Park & Ride | Kiss & Ride | Bus bays for connecting routes | Easy pedestrian access (to ½-mile distance) | Easy bike access (to 3-mile distance) and bike parking |
|------------|---|-------------|-------------|--------------------------------|---|--|
| A-1 | Intermodal – Town Center/Mixed-Use | | ✓ | ✓ | ✓ | ✓ |
| B-1 | Mid-Line Local – Town Center/Mixed-Use | | ✓ | ✓ | ✓ | ✓ |
| B-2 | Mid-Line Local – Special Anchor | | If possible | ✓ | If possible | If possible |
| B-3 | Mid-Line Local – Residential Neighborhood | | | possibly | ✓ | ✓ |
| C-4 | Regional Collector – Rural | ✓ | ✓ | ✓ | If there is development adjacent | |



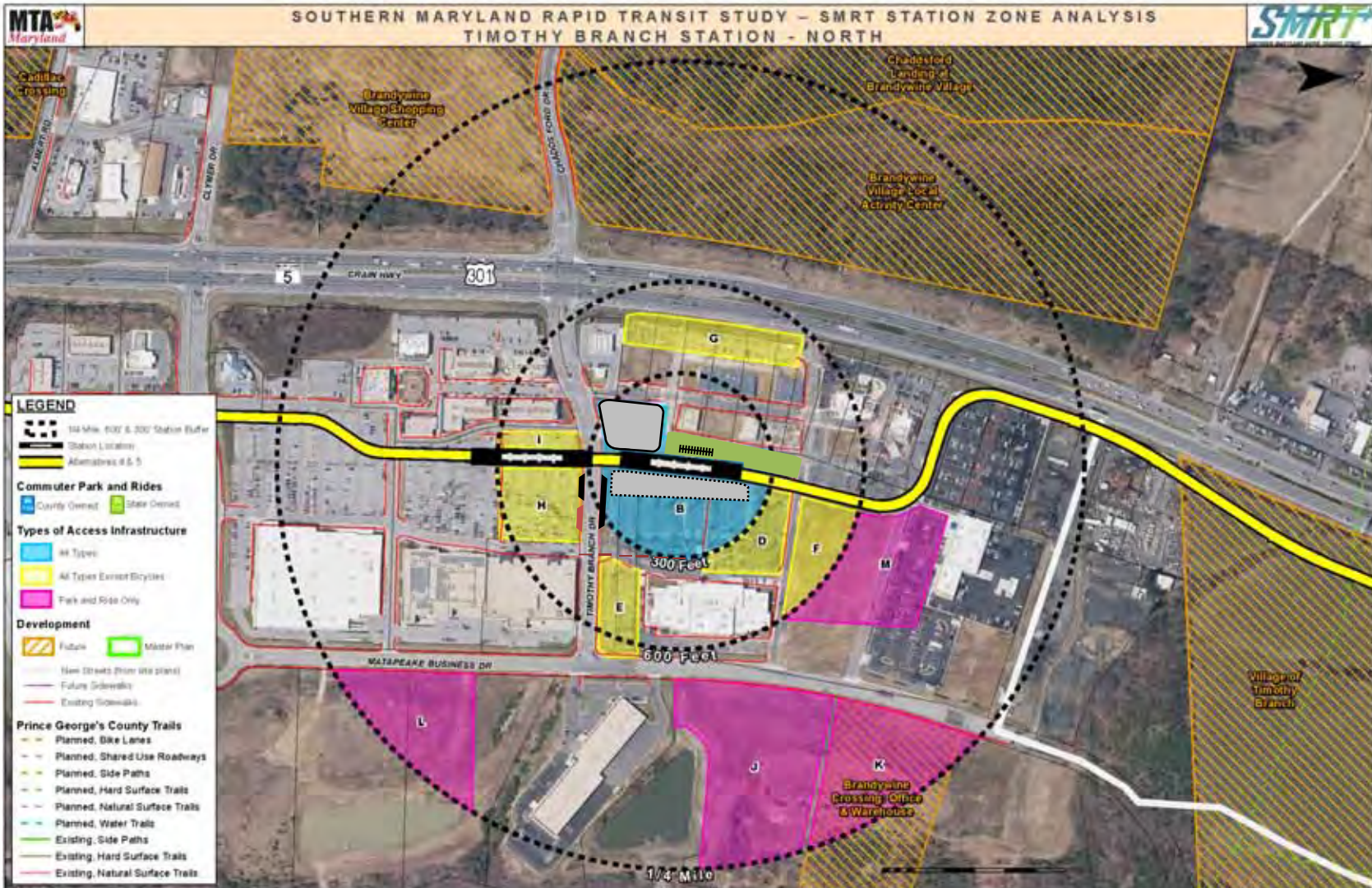
Location Standards

(Distance to Station Entrance)

| | WMATA | Denver RTD | Recommended |
|--------------|----------|--|-----------------|
| Bike Parking | n/a | n/a | 300 ft. |
| Bus Bays | 500 ft | through routes w/in 420 ft; all routes w/in 600 ft | 600 ft. |
| Kiss & Ride | 600 ft | 240 ft | 600 ft. |
| Park & Ride | 1,500 ft | 50% w/in 600 ft; 75% w/in 900 ft; 100% w/in 1,500 ft | 1/4-mile |

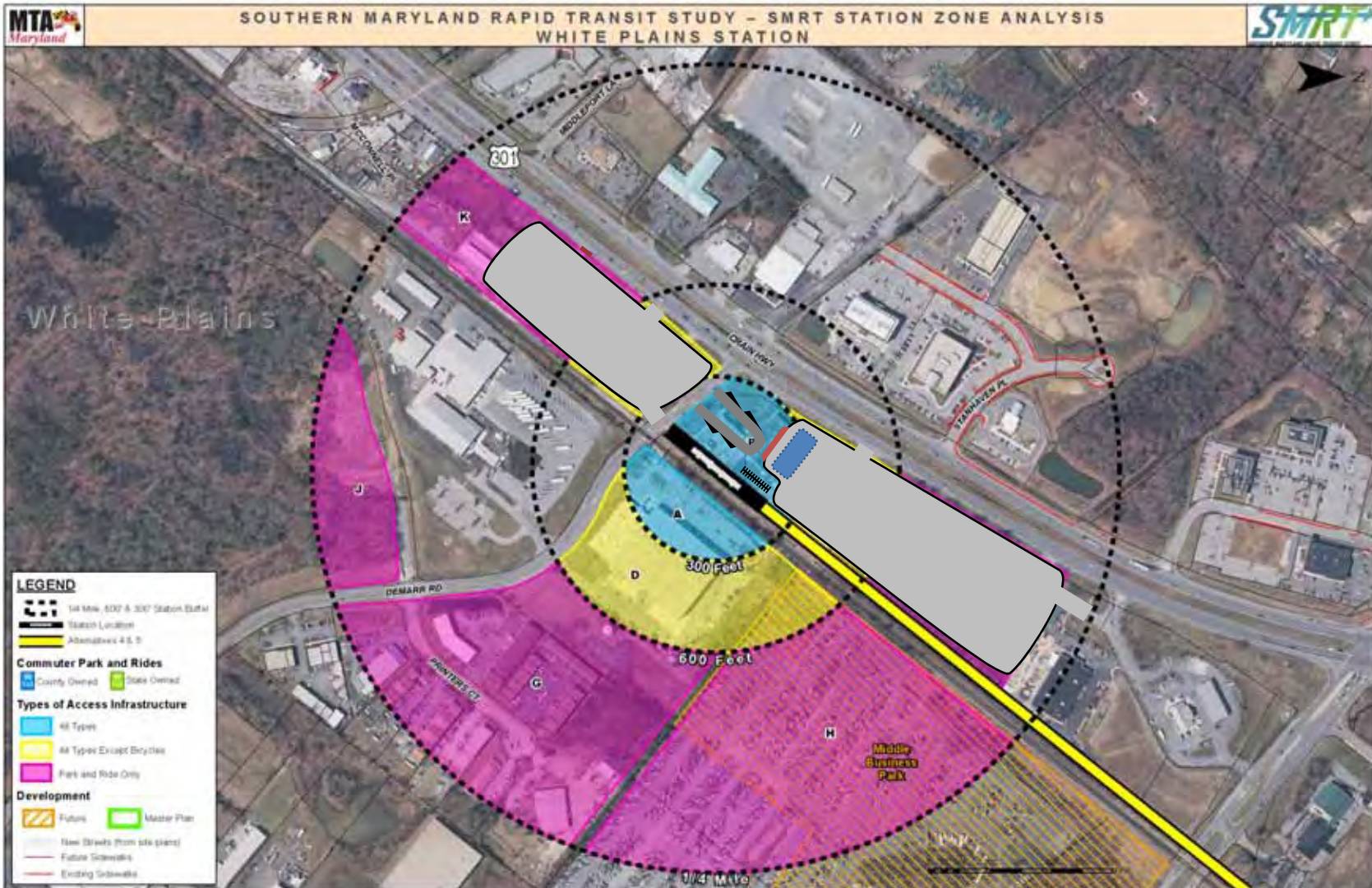


Station Access Example – Town Center Setting





Station Access Example – Collector





At-Grade Crossing Analysis

Pedestrian crossings

- Sidewalk at an intersection/vehicle crossing – 23
- At stations – 24 (12 stations x 2 per station)
- Trail - 9

Vehicle crossings:

- At an intersection - 17
- Roadway (non-intersection) - 7
- Driveway/Alley – 50

Total crossings - 130



Typical Active Crossing Treatments



Signalized



Blank Out Signs



Audible-Visual Pedestrian
Warning Signs



Flashing Lights and Stop Sign



Flashing Lights and Automatic Gates



Typical Passive Crossing Treatments

Stop Controlled



Signaling and Detectable
Warning Surfaces





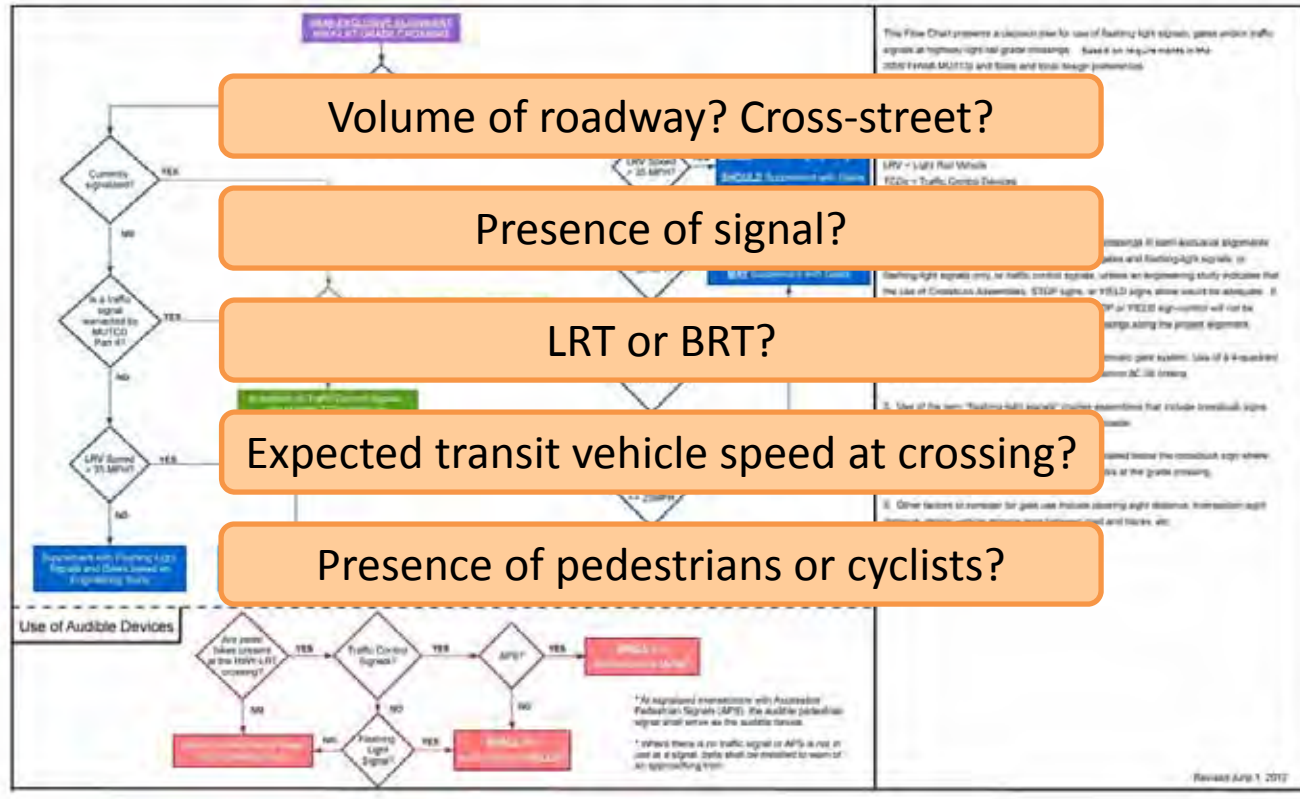
Prioritization Strategies

- Transit Signal Priority (TSP)
 - Uses software and hardware to ***conditionally* modify traffic signals with minimal disruption**
 - Multiple strategies
 - Passive
 - Active extension
 - Active truncation
 - Active phase insert
 - Active phase rotation
 - Delay vs. schedule adherence
- Preemption
 - **Priority always granted**, without regard for disruption to signal coordination



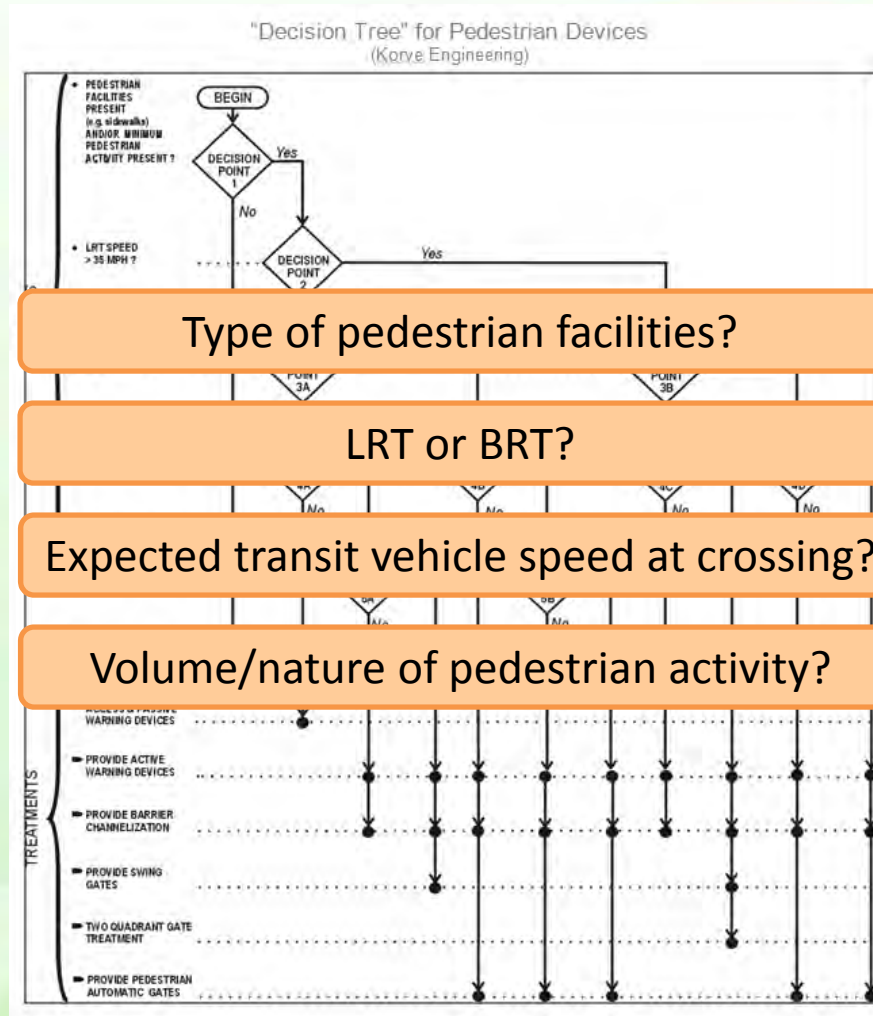
Recommended Treatments

FLOW CHART TO SELECT LRT GRADE CROSSING FLASHING LIGHTS, AUTOMATIC GATES AND AUDIBLE WARNING DEVICES





Recommended Pedestrian Treatments



Type of pedestrian facilities?

LRT or BRT?

Expected transit vehicle speed at crossing?

Volume/nature of pedestrian activity?



Lessons Learned

- Transit alternatives have multiple features
 - Technology
 - Alignment
 - Station locations
 - Service plans
- Consider station access and development potential
- Recognize impacts of dedicated vs shared running way
- Account for crossings in design and service plans



Project Schedule

| Time Frame | Key Milestone |
|----------------------|---|
| Spring - Summer 2016 | Complete Technical Studies – Engineering , Environmental, Ridership, Economic, etc. |
| Late Summer 2016 | Compile Final Results/Recommendations |
| Fall 2016 | Hold Round 3 Public Meetings |
| Fall 2016 | Complete Technical Reports |
| December 2016 | Complete Final Report |



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