

RAIL PRE-EMPTION/BUSWAY PRIORITY + QUEUE CLEARANCE SYSTEM FOR AT-GRADE INTERSECTION



ITE Mid-Colonial District 2015 Annual Conference

APRIL 13TH, 2015

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Presentation Outline



- The Project
- The Problem
- The Solution & Analysis
- Findings/Recommendations
- Questions?

The Project



- CT *fastrak* (New Britain-Hartford Busway)
- Connecticut's first bus rapid transit line
- Dedicated bus guideway between New Britain and downtown Hartford
- The approx 6 mile segment between Bushnell Park Stn to Newington Junction Stn runs parallel to the Amtrak guideway

The Problem

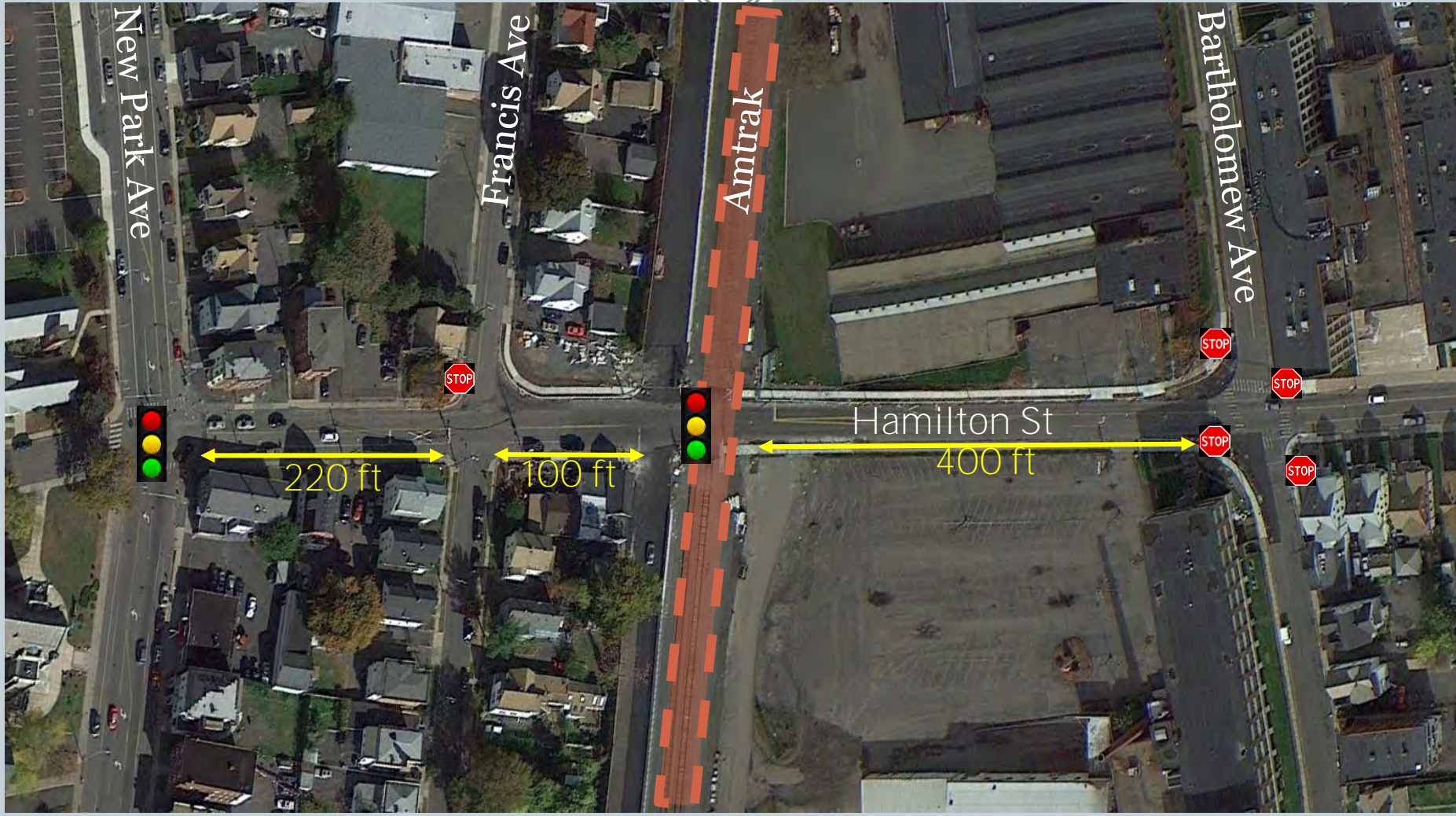


1. Existing at-grade railroad intersection at Hamilton St
 - Provide signal preemption/transit priority to enhance traffic safety and reduce BRT delays
2. Closely spaced intersections along Hamilton St
3. Queues spilling into the guideway = potential safety hazard
 - Provide queue detection and clearance at crossing to prevent collisions
4. Help with public involvement
 - Provide visualization of proposed improvements

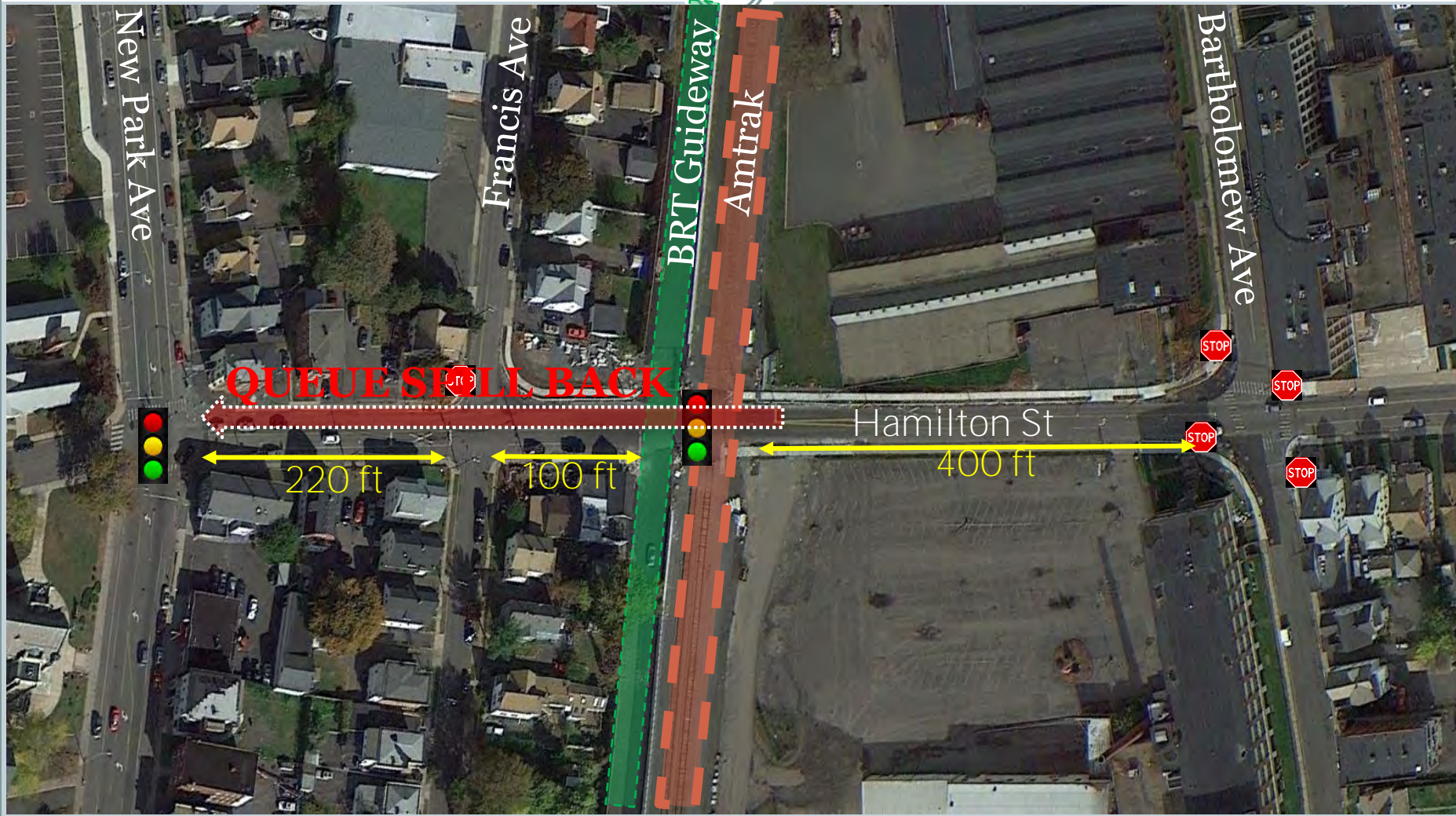
Study Corridor



Study Corridor (Existing Conditions)



Study Corridor (Future Conditions)



The Solution



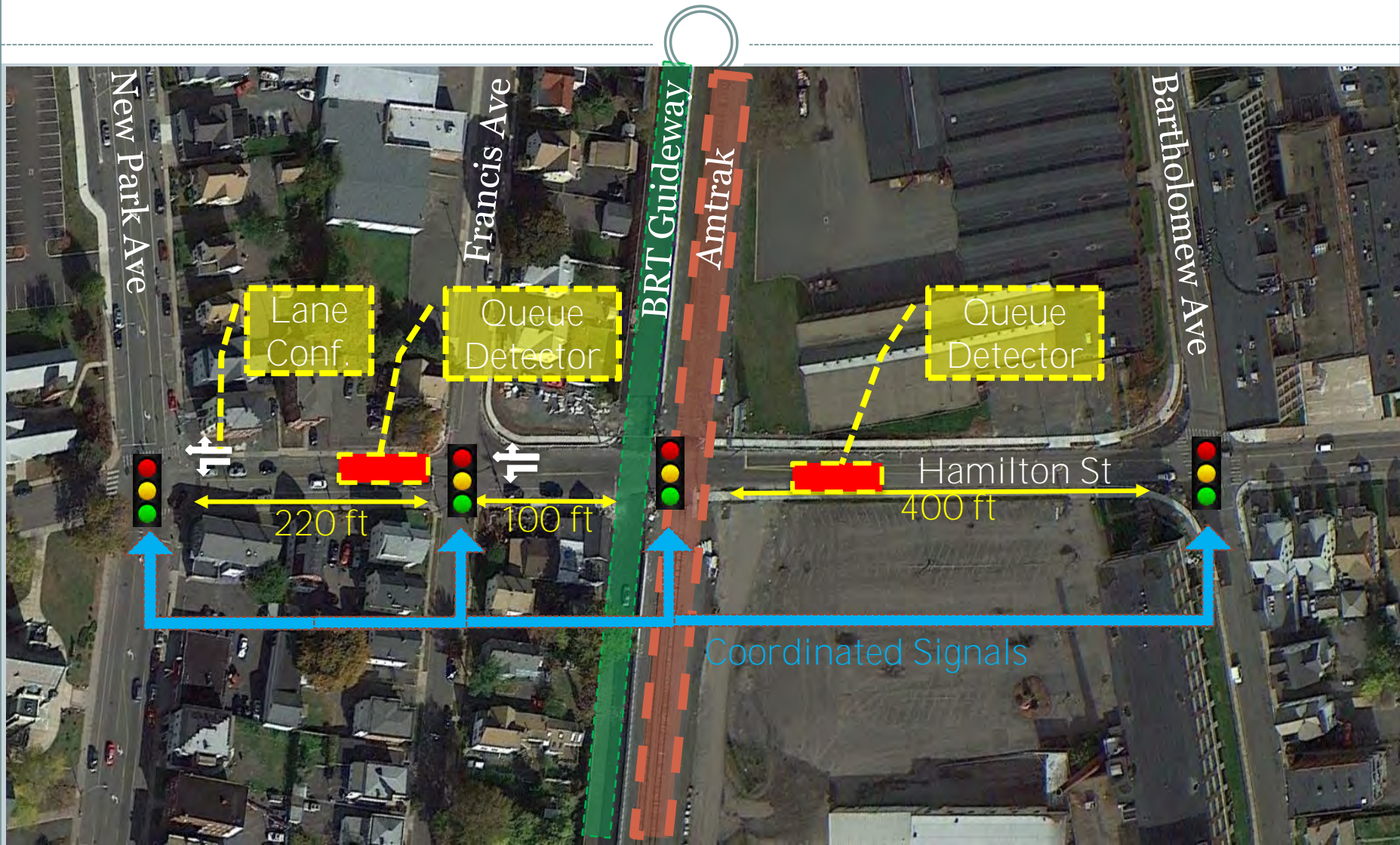
- Microsimulation – tool: VISSIM
- Models individual vehicles & take into consideration the characteristics/features of roadway & drivers
- Multi-modal – simulate vehicles, bus, rail & pedestrians
- Signal Preemption/Priority & Detectors for Queue spillback
- Visualization

Analysis

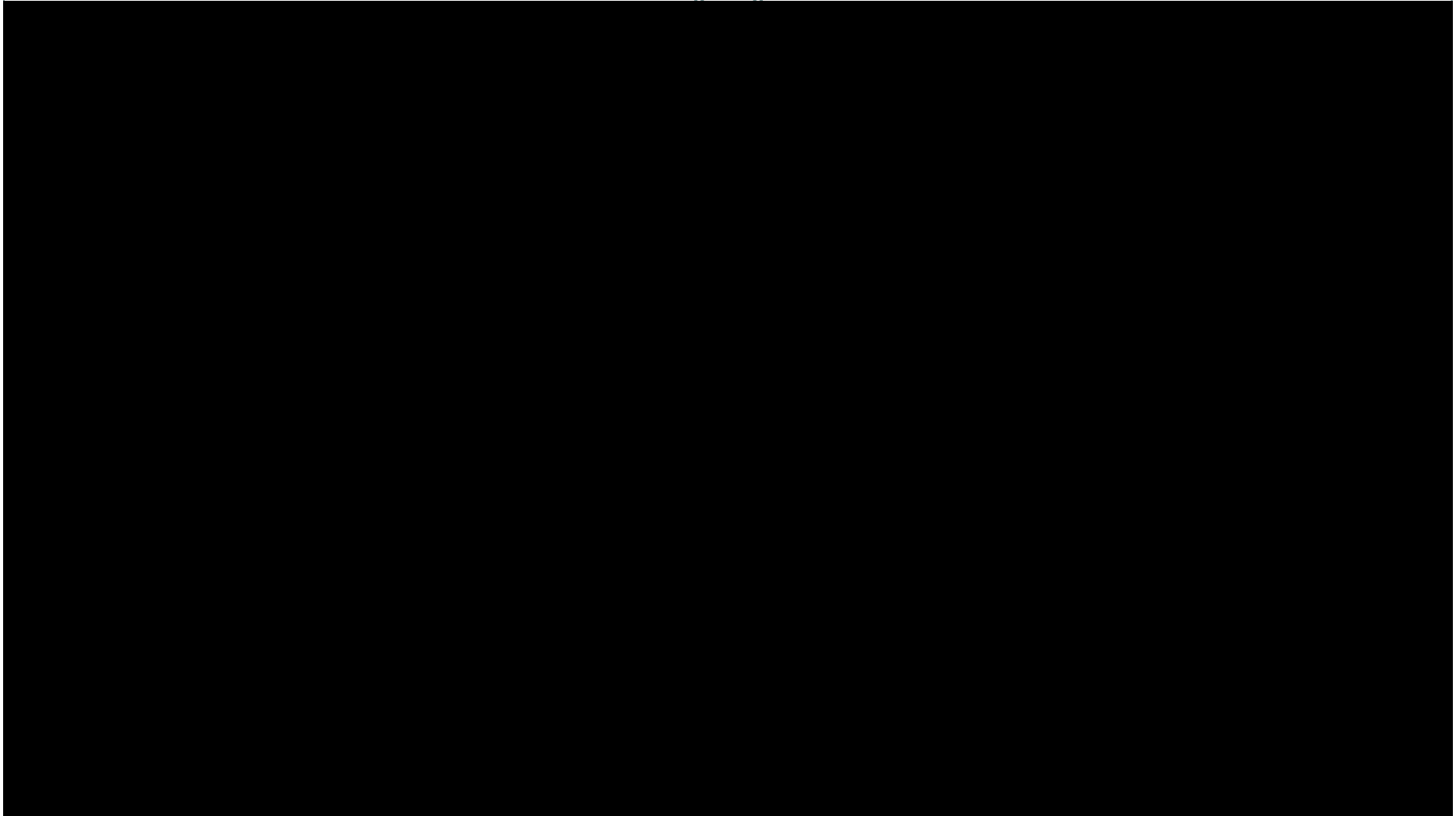


- Calibrated existing conditions
- Future 2030 no-build conditions with growth in traffic
- Future 2030 Build conditions with BRT
 - Mitigation alternatives
- Sensitivity test for higher volumes/incident conditions

Build w/Mitigation



Simulation Videos



Findings & Recommendations



- Signal priority reduces delays for BRT
- Signalizing all intersections and coordinating them helps with flow and control of traffic
- Queue detection and clearance system improves safety at the cost of increase in delay
- Locate where queue detectors should be installed
- Simulation videos help people visualize how the system will work

Questions ?



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