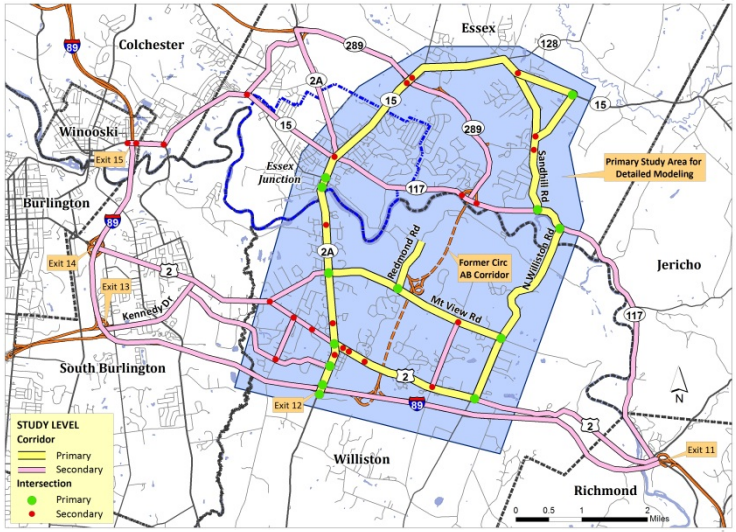
25 YEARS SINCE 1986

RSG INC. RESOURCE SYSTEMS GROUP, INC.

Williston-Essex Network Transportation Study



Steering Committee Meeting #6

Presentation of 2015 Results - Base Case and Hybrid Strategy Packages

CHITTENDEN COUNTY RPC

December 13, 2012

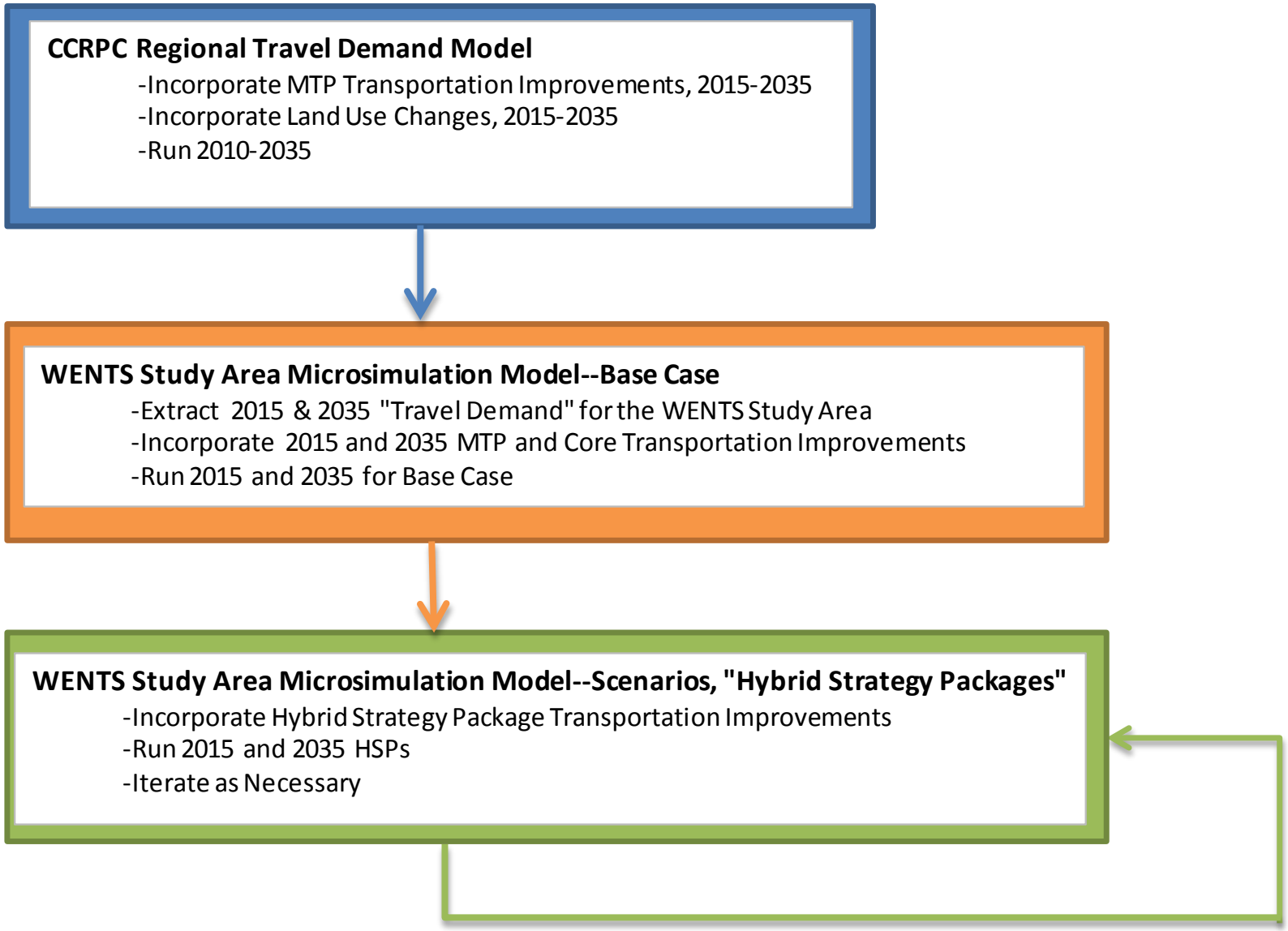
Presentation Overview

- Project Status
- Modeling Process
- Review of Performance Measures
- Results
  - 2015 Base Case (with Core Improvements)
  - 2015 Hybrid Strategy Packages 1-3
  - 2035 Base Case (with Core Improvements)
- Next Steps

Project Status

- **Phase 1: Evaluation of two major network strategies**
  - **3 Selectboard Meetings, 1 Public Meeting**
- **Phase 2: Analysis of Existing and Future Conditions; Development of Transportation Network Goals & Objectives**
  - **Task 1: Analysis of existing conditions; development of performance measures**
  - **Task 2: Establish goals and objectives**
  - **Task 3: Future year performance**
- ***Phase 3: Develop and evaluate strategies***
- **Phase 4: Develop Implementation Plan for Transportation Corridors**
- **Phase 5: Develop Transportation Management Plan**

Modeling Process



Performance Measures for Scenario Comparison

- **Multimodal Performance Measures - Same Across All Scenarios**
- **System-Wide**
  - Cumulative Intersection Stop Delay (Primary & Secondary Intersections)
  - Vehicle Hours Traveled
  - Total Vehicle GHG Emissions
- **Vehicle Mobility Performance Measures**
  - Corridor Travel Times
  - Intersection Metrics (Primary & Secondary Intersections)
    - Delay & LOS
    - V/C Ratios
    - Queues

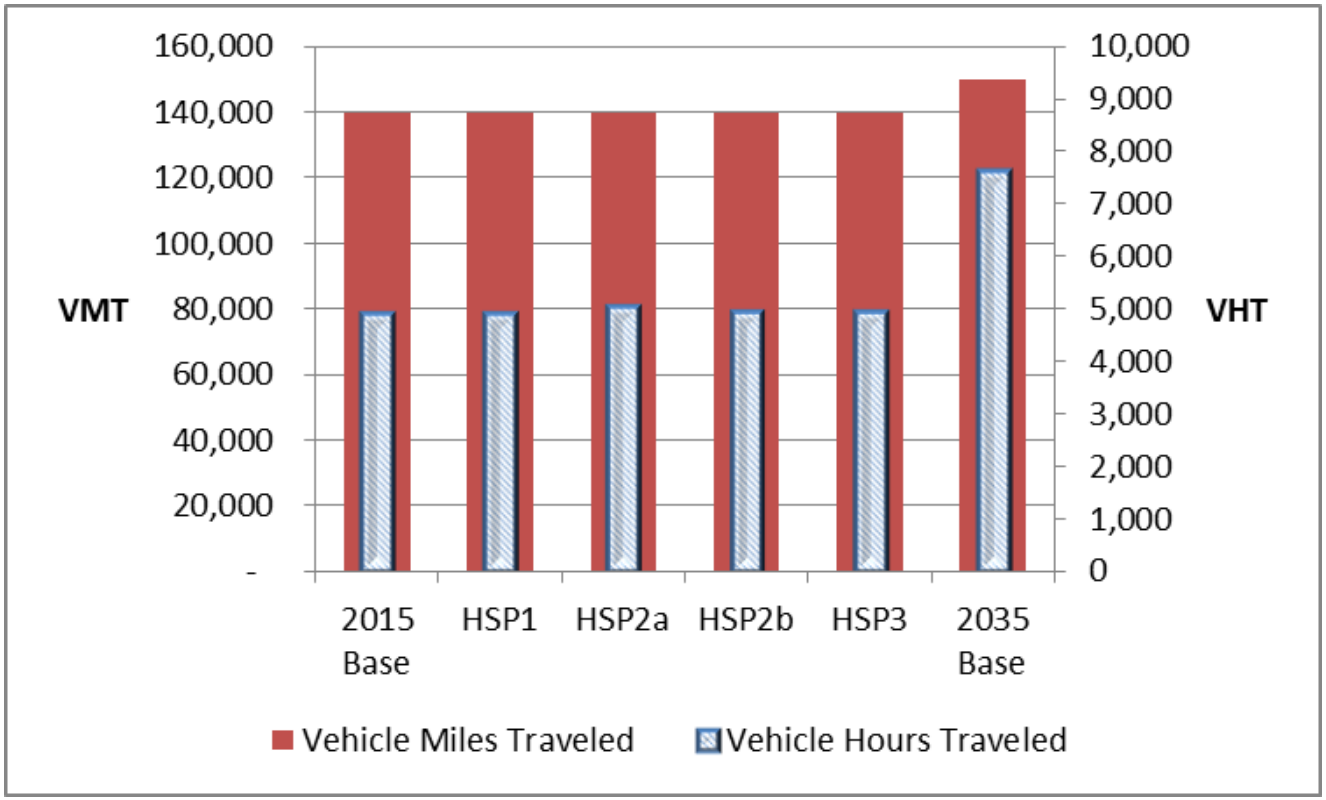
Tips and Requests

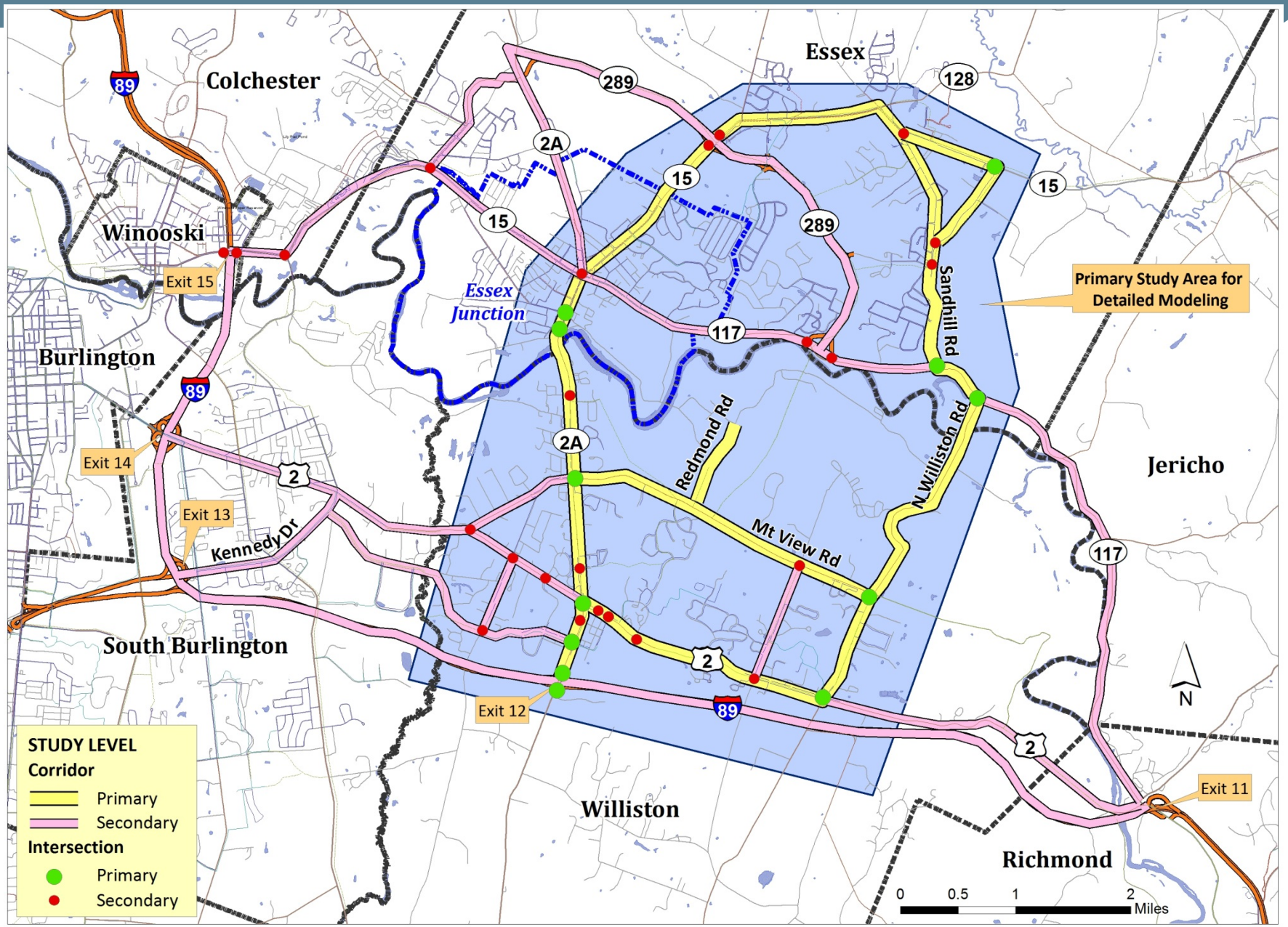
- There is A LOT(!) of information…
- Considerable effort invested in visualizing model output…
- Absolute magnitudes of measures are less important than relative magnitudes…
- A network is vexing…fixing a problem in one area often moves the problem "downstream".
- There will be reasonable requests for explanations and greater detail…
  - If we can answer, we'll provide answers today.
  - If we can't answer we'll provide answers following the meeting.

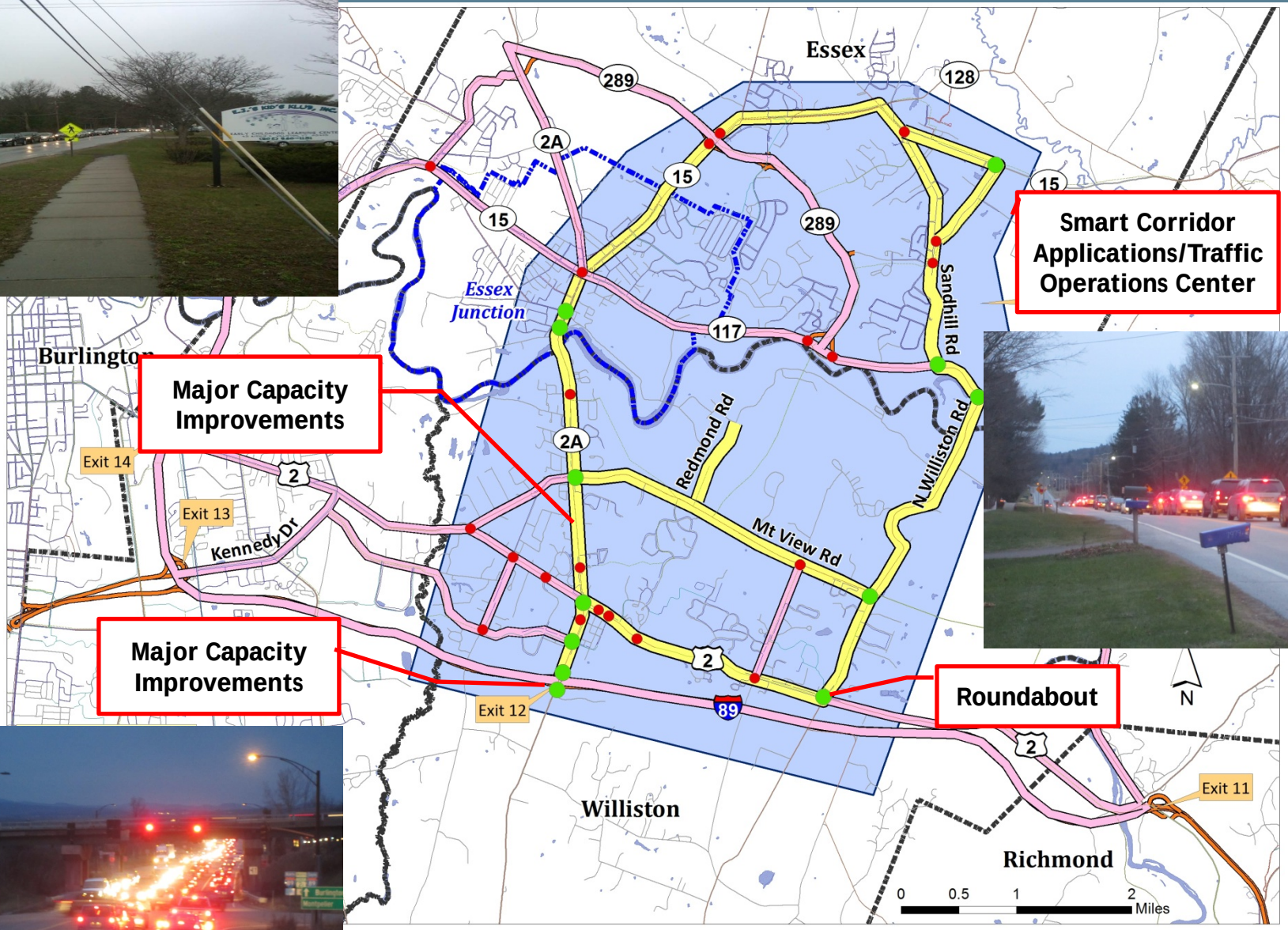
Scenarios Under Consideration Today

- 2015 Base Case
- 2015 Hybrid Strategy Package 1
- 2015 Hybrid Strategy Package 2
- 2015 Hybrid Strategy Package 3
- 2035 Base Case

- Strategy Package Description
- Network-Wide Performance Measures
- Corridor Traffic Volumes
- Intersection Performance
- Corridor Travel Times

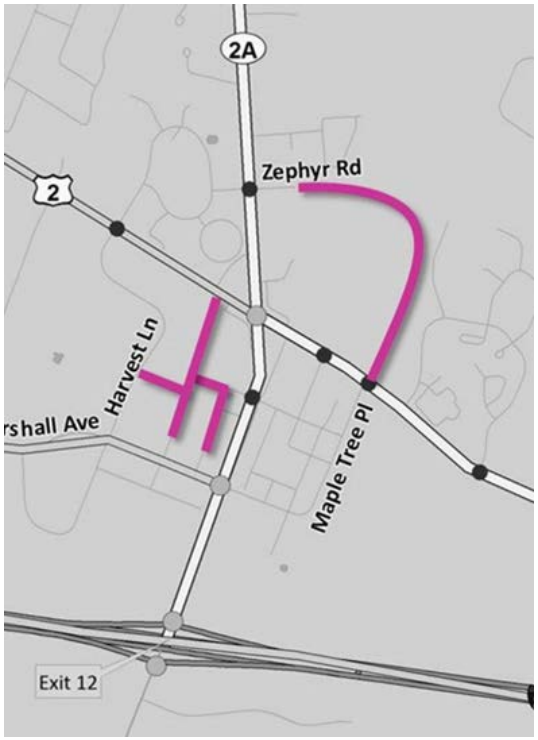



Colchester
Essex
Winooski
Burlington
South Burlington
Williston
Jericho
Richmond
Essex Junction
Primary Study Area for Detailed Modeling
Sandhill Rd
Redmond Rd
N Williston Rd
Mt View Rd
Kennedy Dr
Exit 15
Exit 14
Exit 13
Exit 12
Exit 11
89
289
128
15
2A
117
2
N
0 0.5 1 2 Miles
STUDY LEVEL
Corridor
Primary
Secondary
Intersection
Primary
Secondary

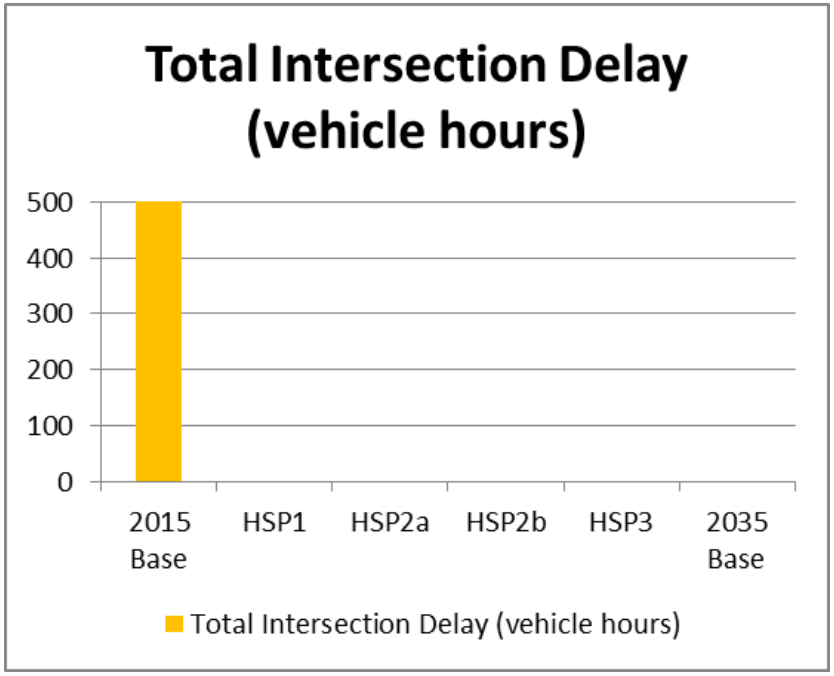

Essex
289
128
2A
15
15
289
15
Smart Corridor Applications/Traffic Operations Center
Essex Junction
117
Sandhill Rd
Burlington
Major Capacity Improvements
Redmond Rd
N Williston Rd
2A
Exit 14
2
Exit 13
Kennedy Dr
Mt View Rd
Major Capacity Improvements
2
Exit 12
89
Roundabout
N
2
Exit 11
Williston
Richmond
0
0.5
1
2
Miles

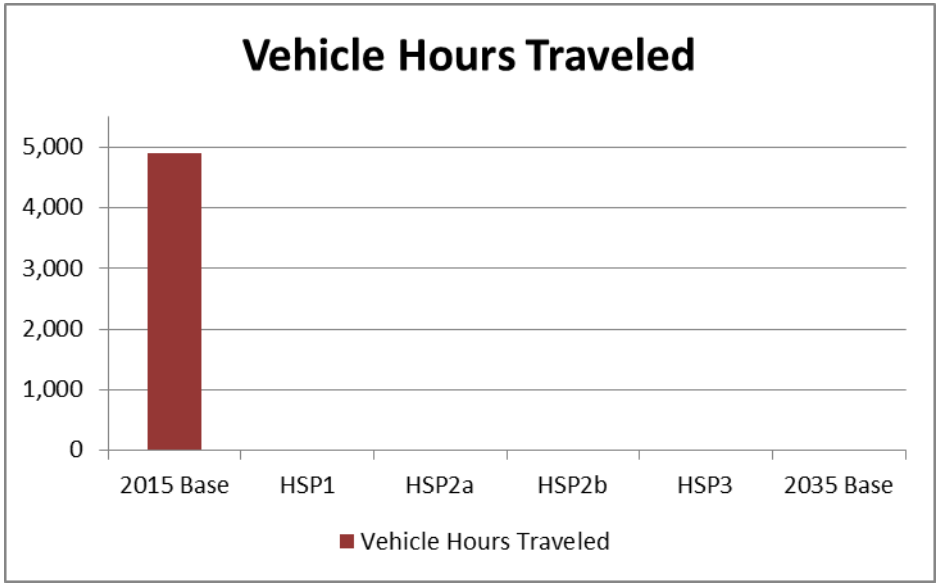
2015 Base Case - Core Improvements

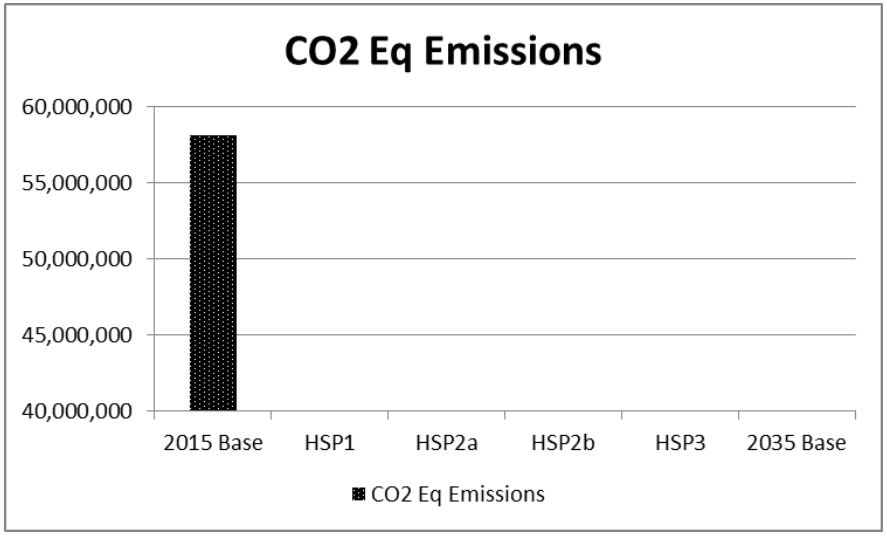
- Smart Corridor Applications/Traffic Operations Center
- Williston Grid Streets
- Essex Town Center Connections
- Addressing discontinuities and deficiencies to sidewalks, paths, and shoulders
- Transit Improvements
  - Add a mid-day trip on the Williston Route weekdays
  - Weekday peak hour Jeffersonville-Burlington commuter route
- CIRC Alternatives Phase 1 implementation projects:
  - The Crescent Connector in Essex Junction
  - VT2A/James Brown Drive Signal (w/ VT2A LTLs)
  - VT117/ Sand Hill Rd. - Traffic Signal
- CIRC Alternatives Phase 2 implementation projects:
  - VT15/Sand Hill Road Intersection improvements, Essex
  - VT15 Improvements – Post Office Square to 5-Corners, Essex Junction
  - VT15 Multiuse Path, Winooski, Colchester, Essex, and Essex Junction



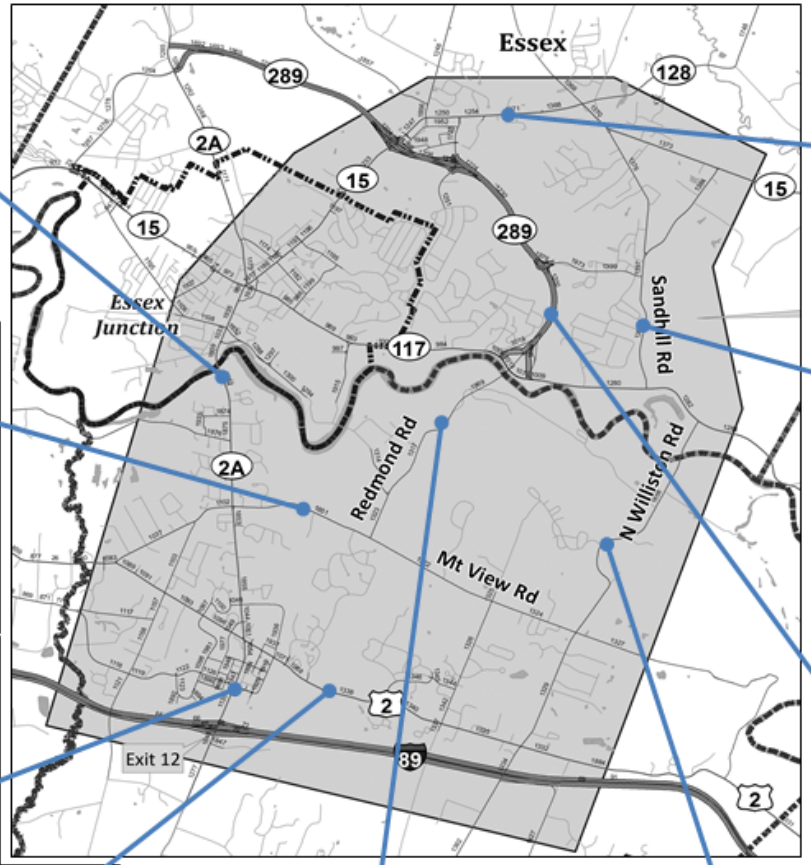
Performance Measures for the 2015 Base Case

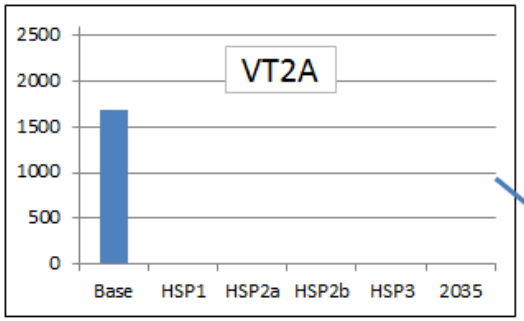


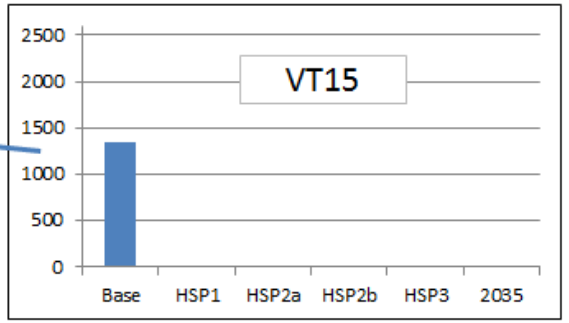


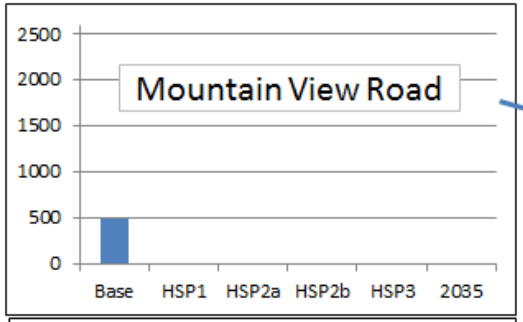


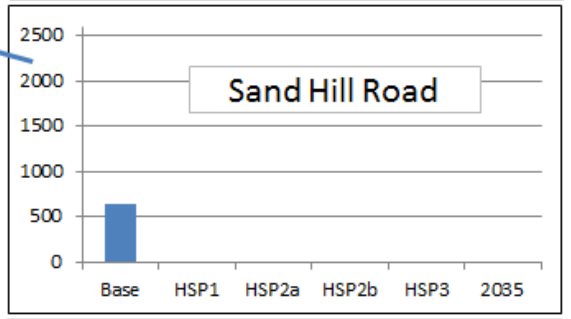
Traffic Flows: 2015 Base Case

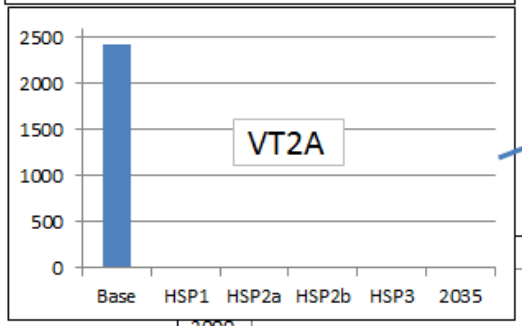


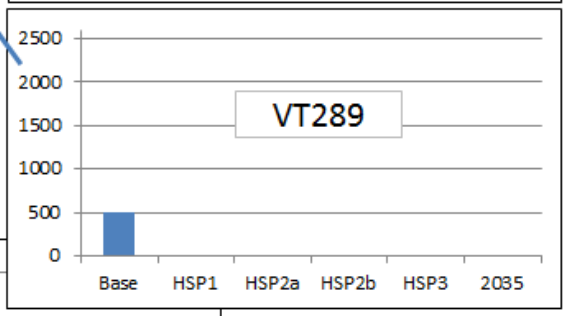


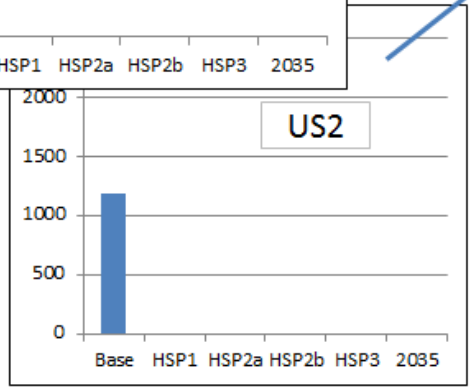


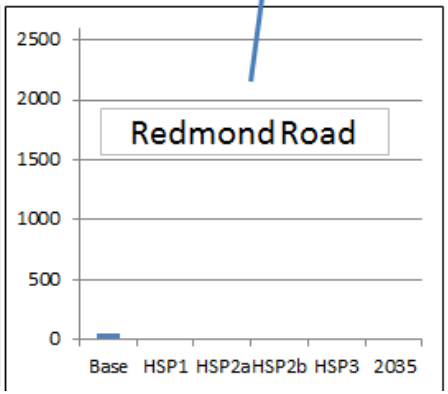


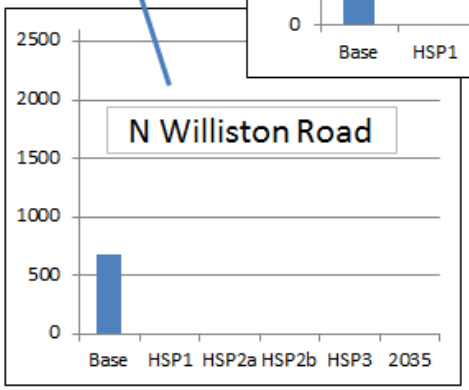




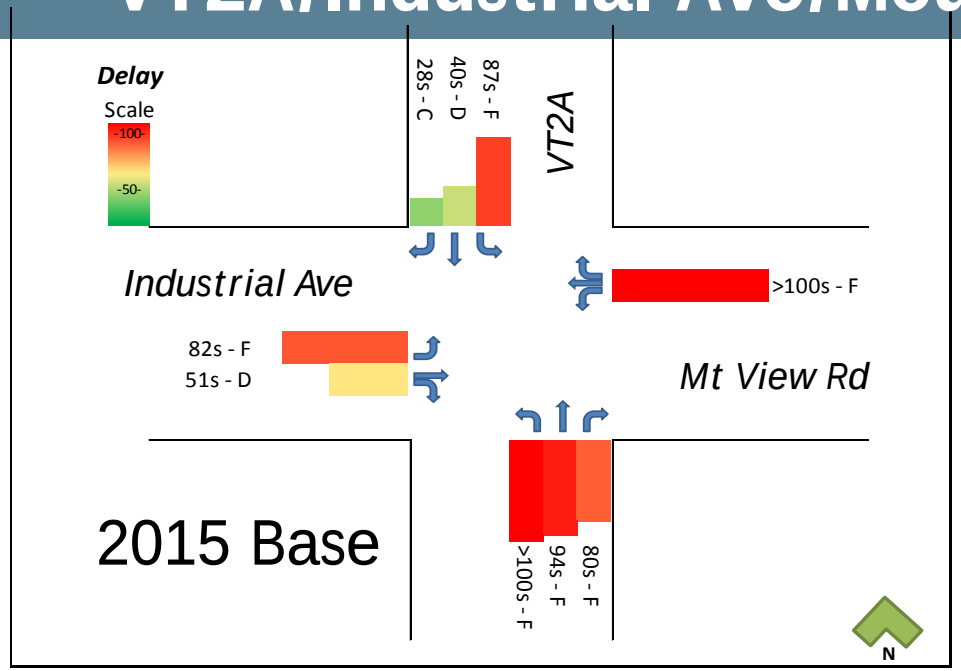




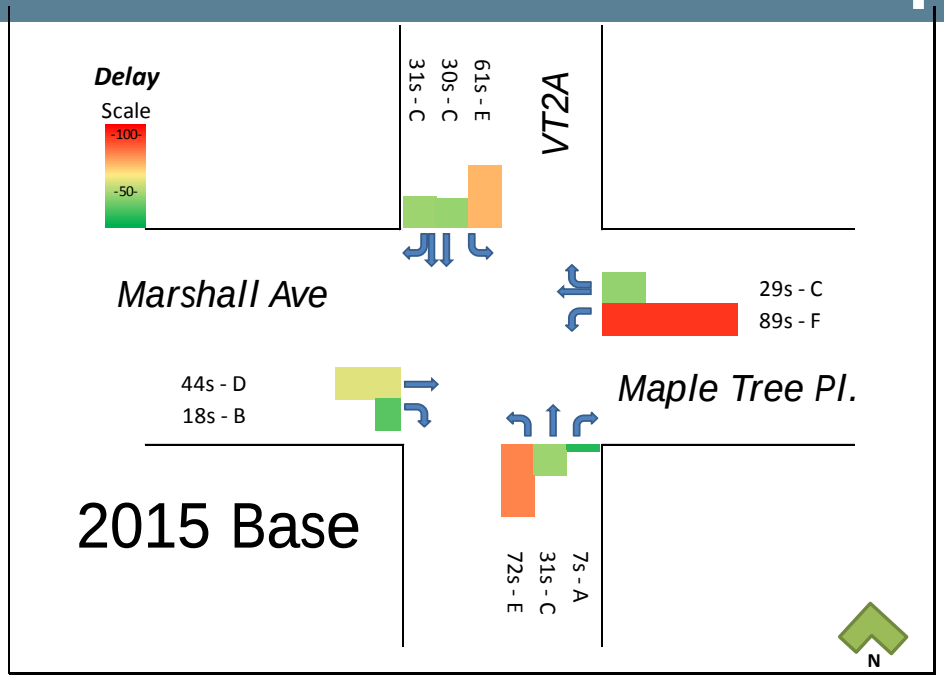




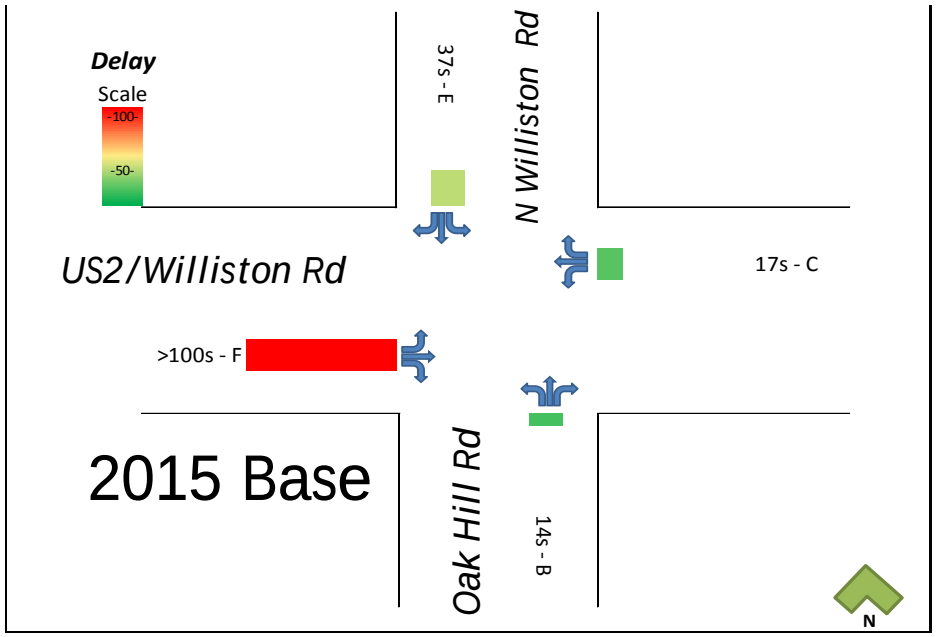
VT2A/Industrial Ave/Mountain View Rd



VT2A/Marshall Ave./Maple Tree Place



US2/North Williston/Oak Hill Rd

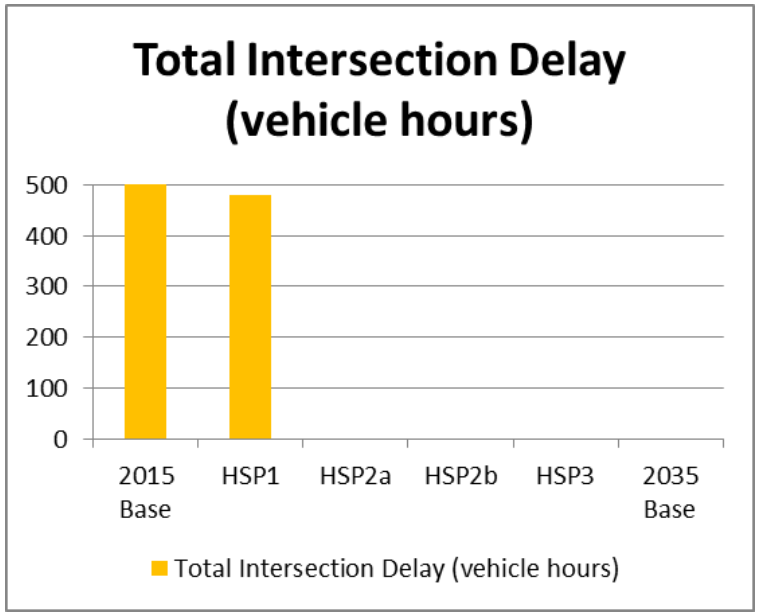


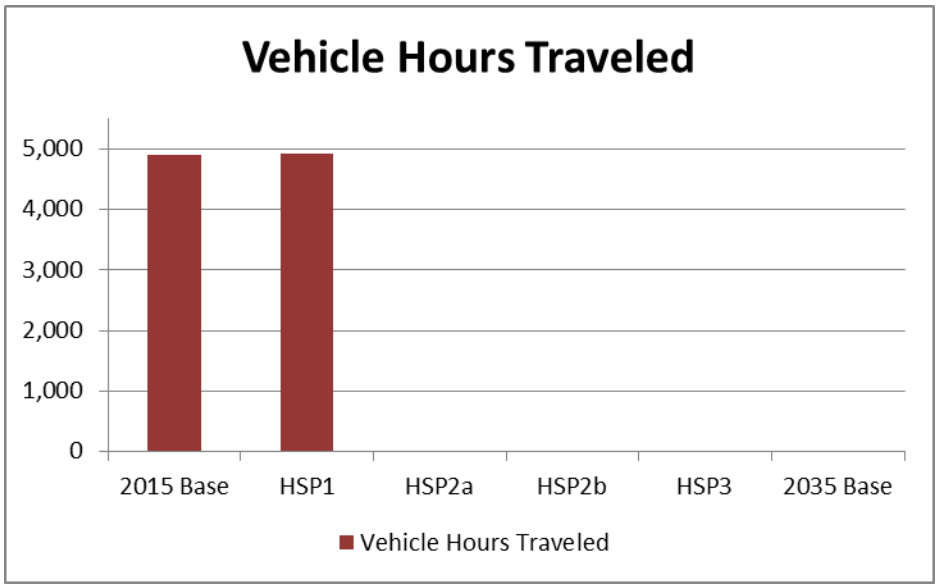
Hybrid Strategy Package 1 (HSP1)

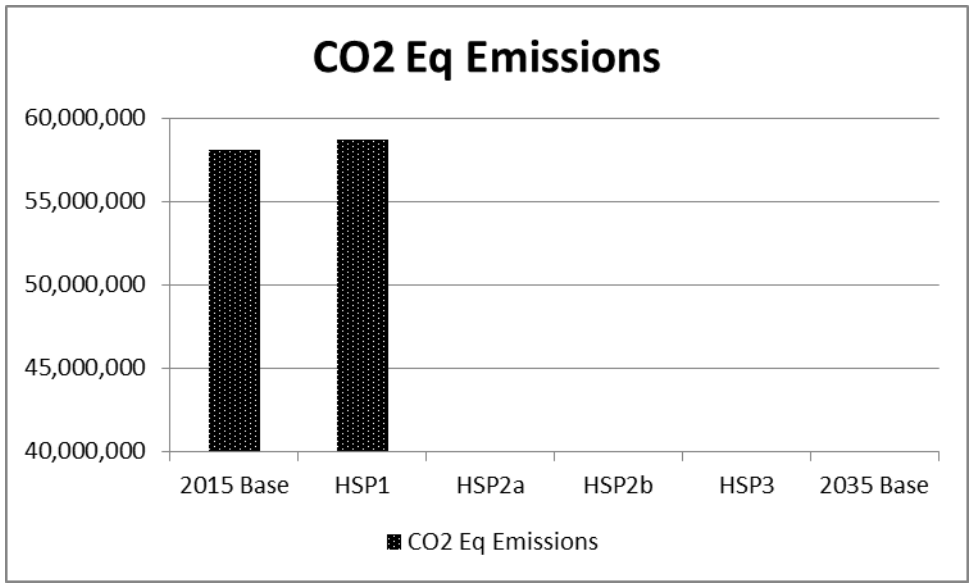
1. **Redmond Road Connector (new bridge)**
2. **Connect Allen Martin Parkway to VT289**
3. **Capacity Improvements:**
    1. Industrial / Mountain View / VT2A
    2. Redmond /Mountain View intersection - signal

Estimated Cost for HSP1: $ 49-73 million

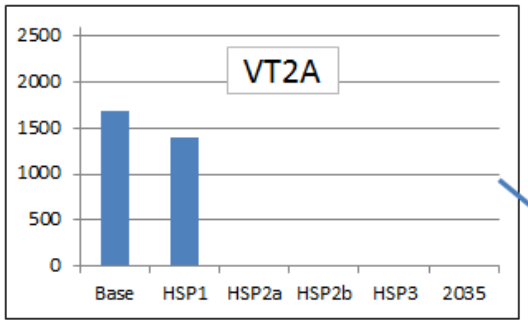
Performance Measures for HSP1

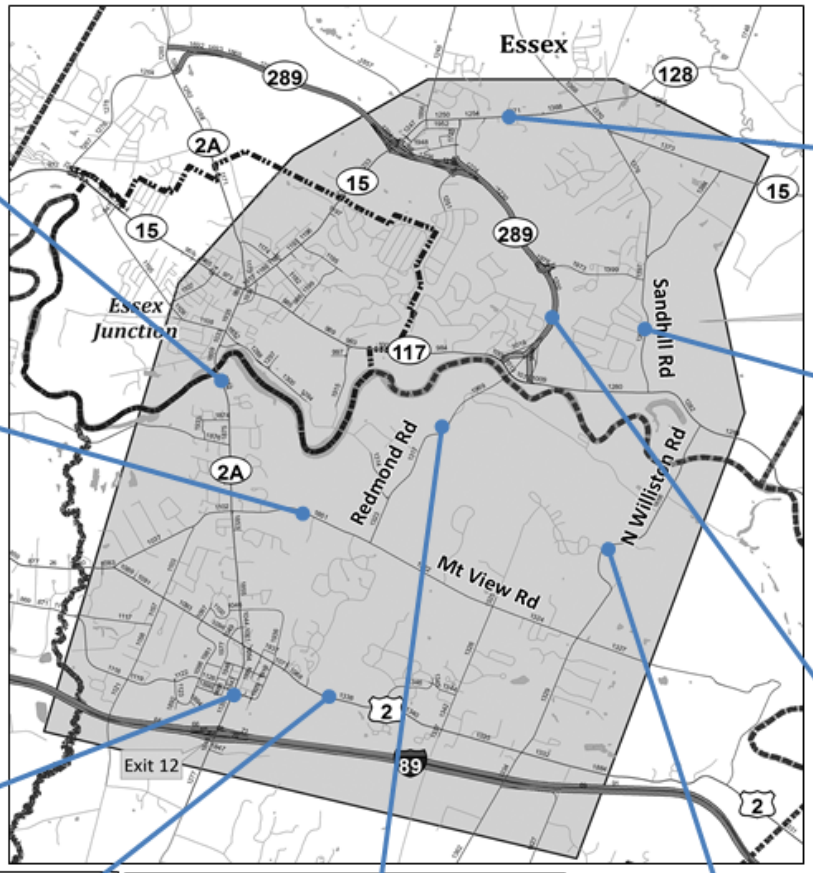


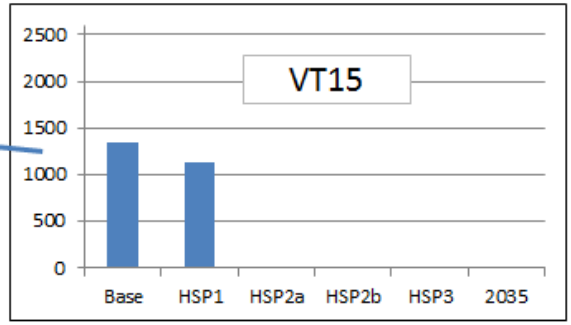


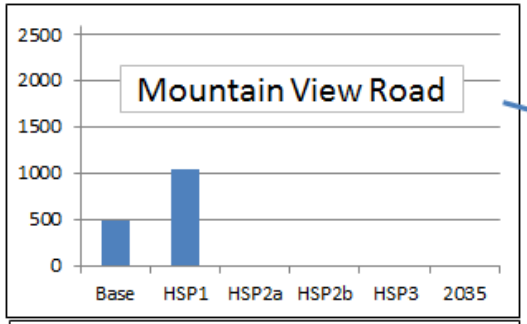


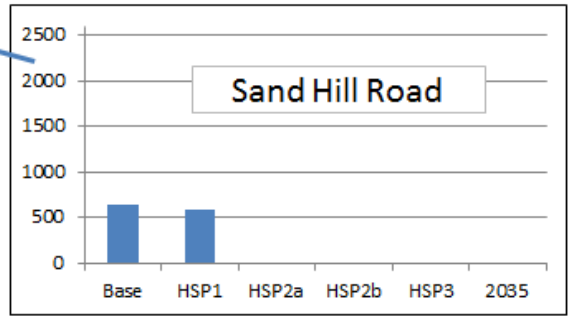
Traffic Flows: 2015 HSP1

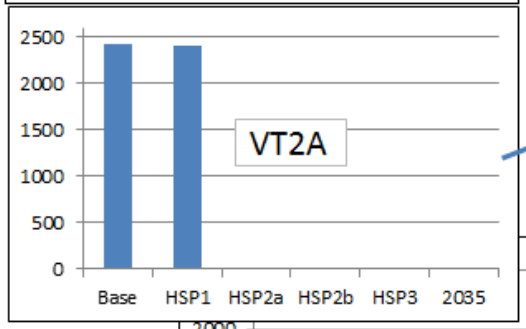


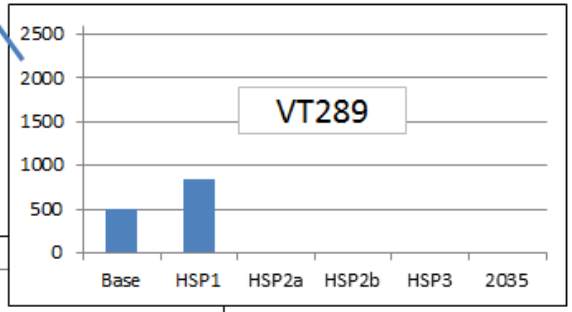


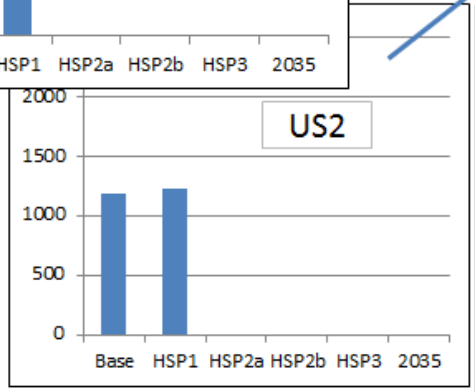


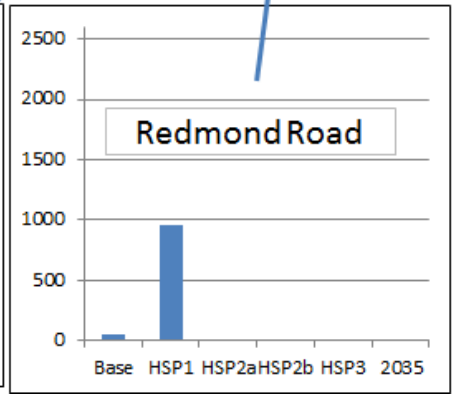


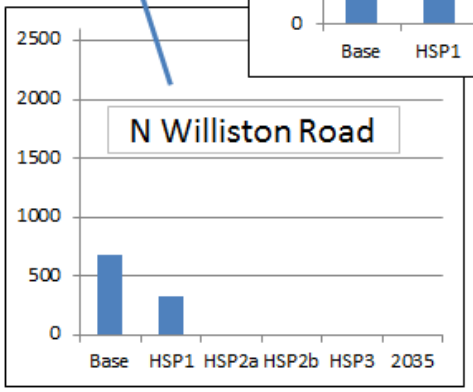




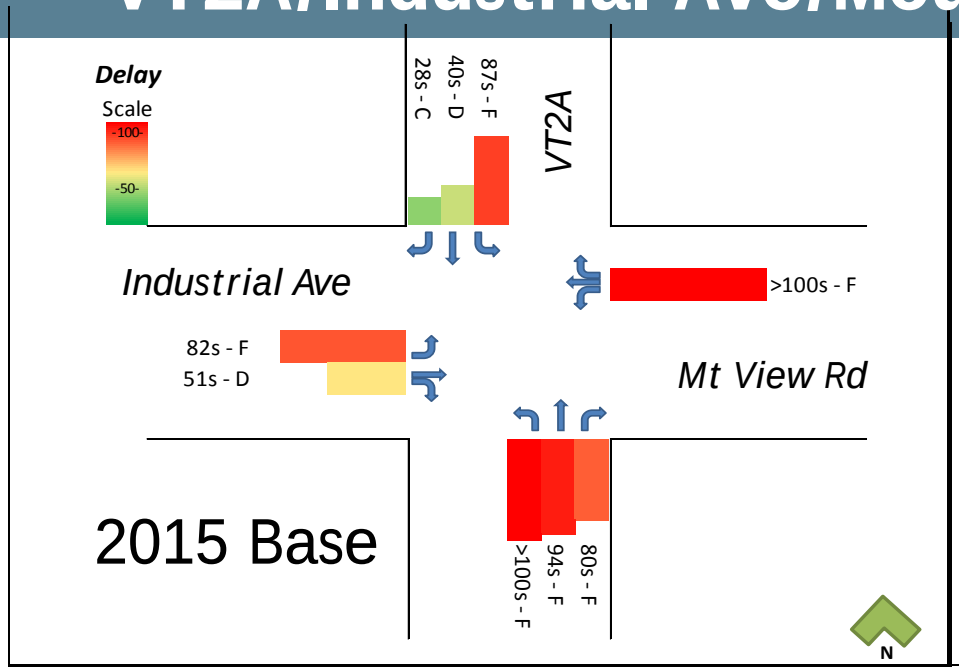


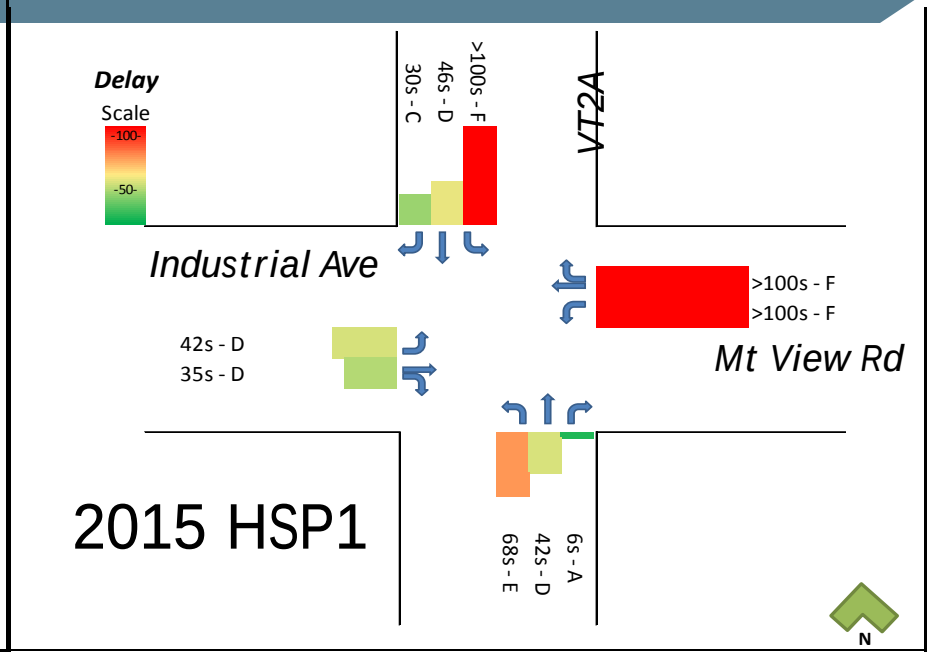






VT2A/Industrial Ave/Mountain View Rd





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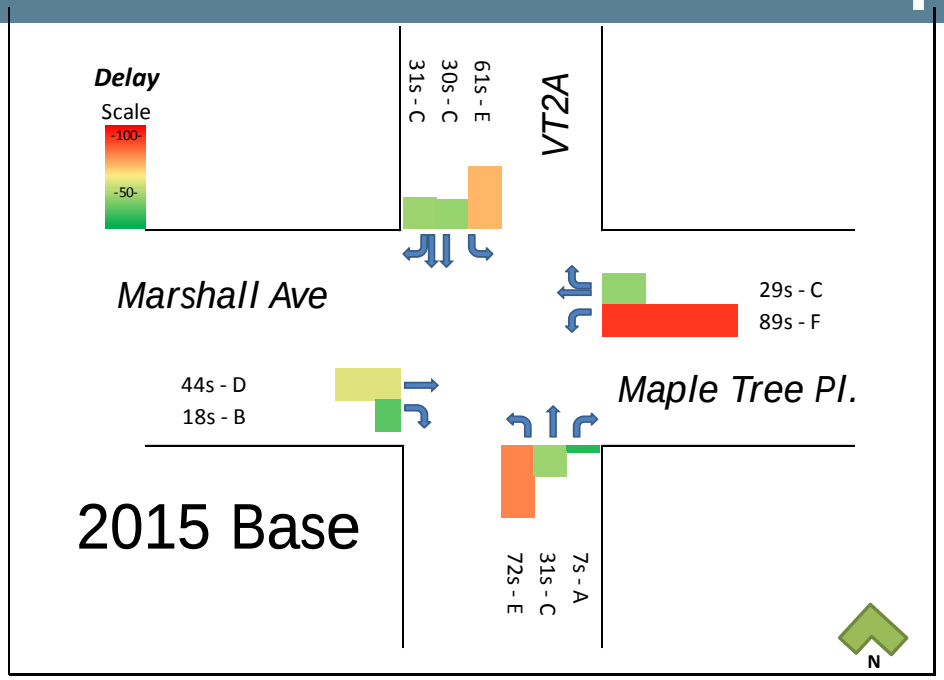
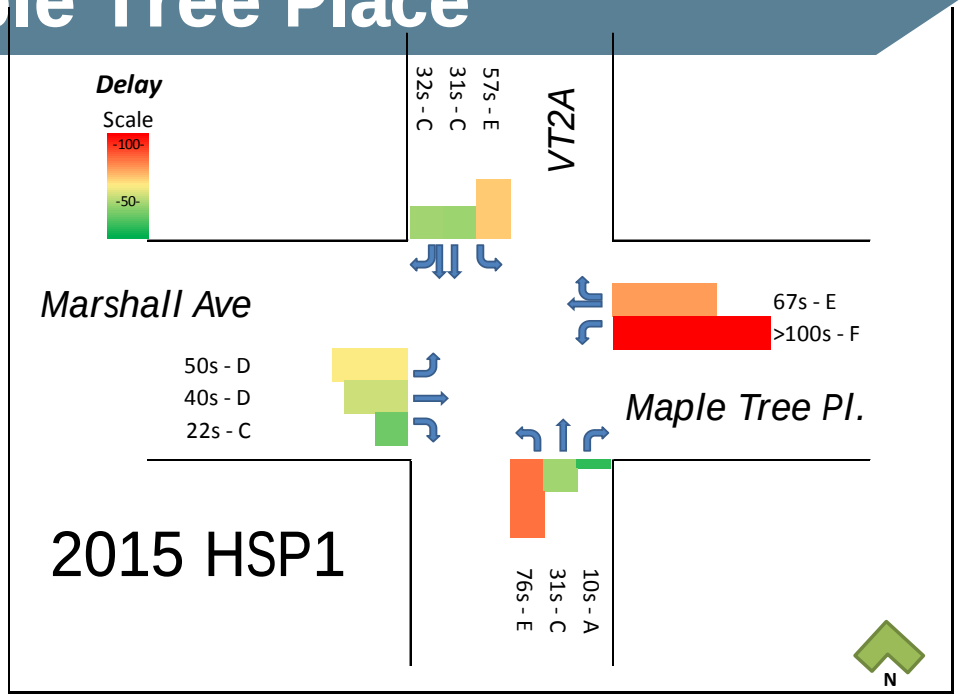
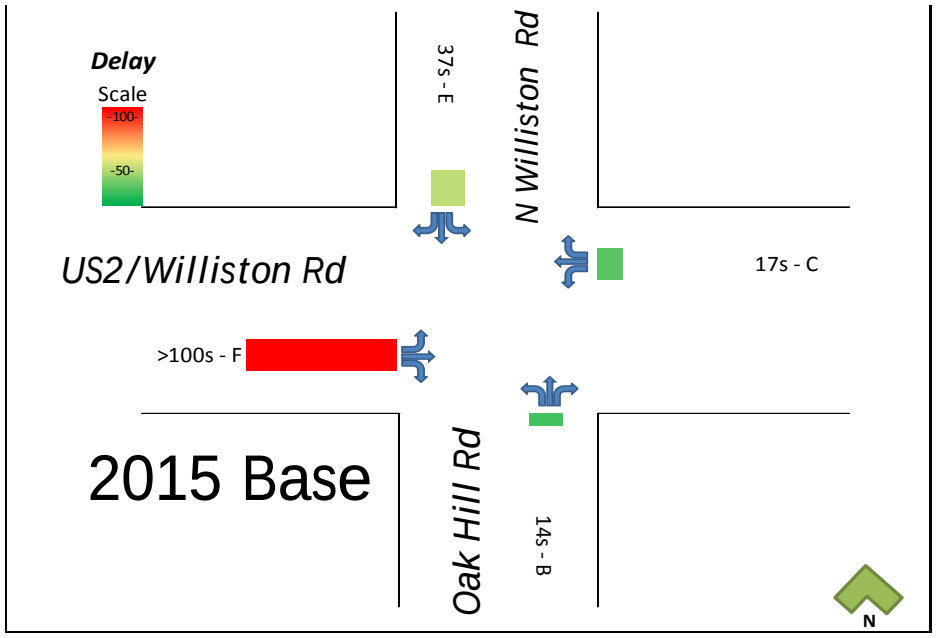
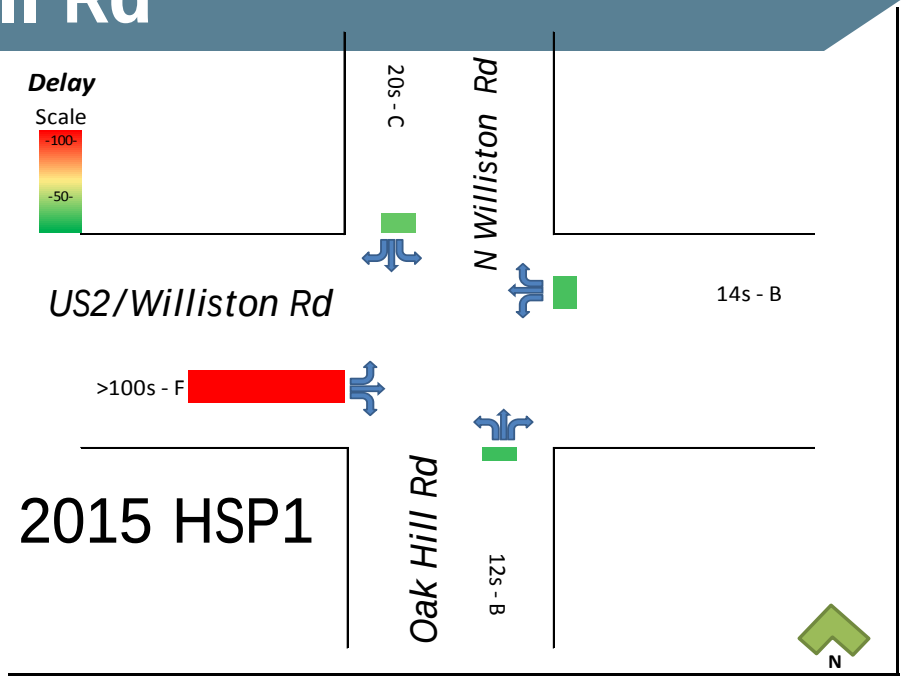




US2/North Williston/Oak Hill Rd





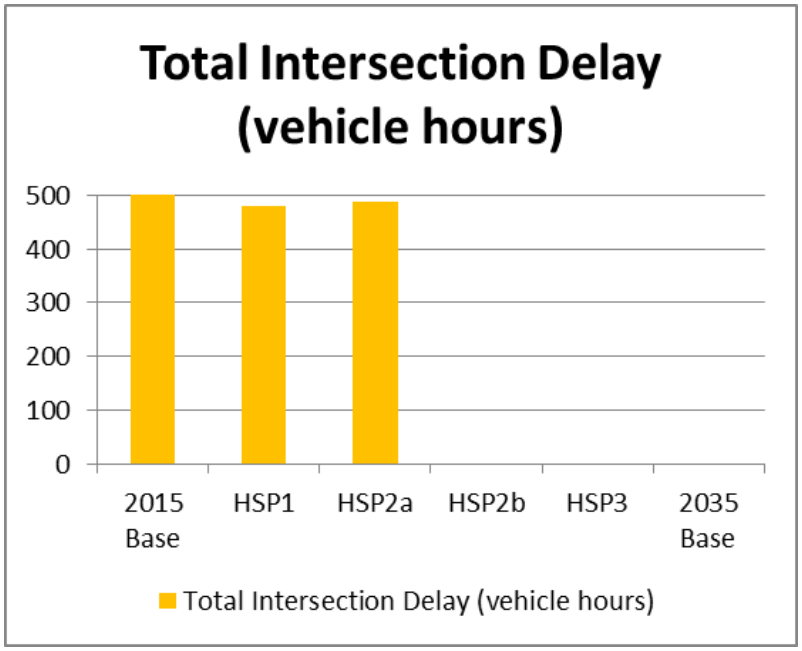
Hybrid Strategy Package 2a

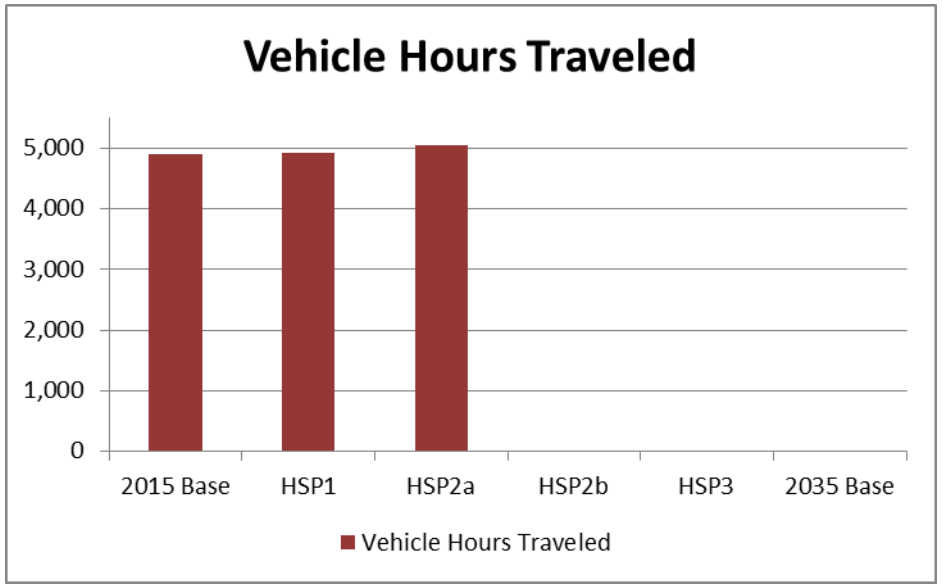
Capacity Improvements

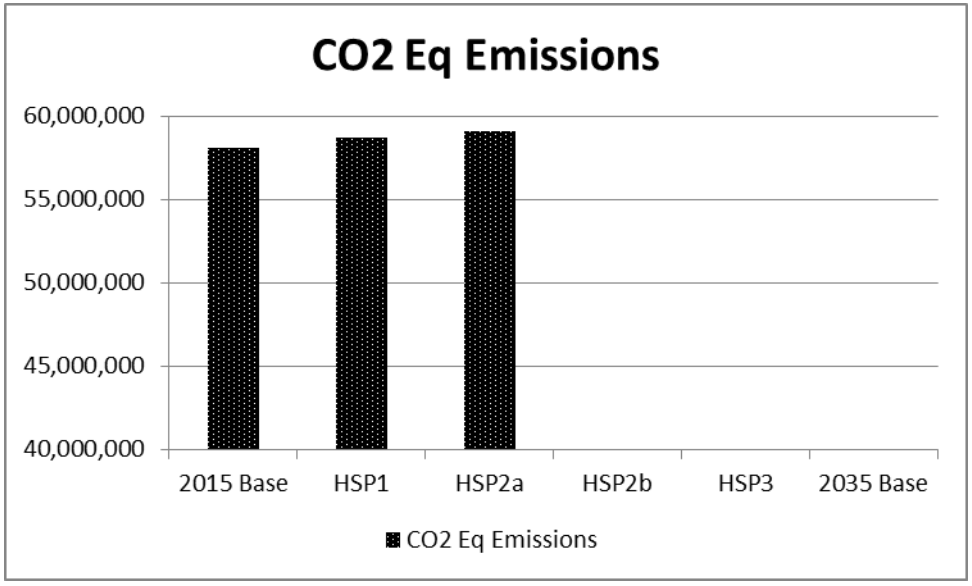
1. Towers Rd / VT 128/ VT 15
2. N. Williston Road/US 2/Oak Hill Road - roundabout
3. N. Williston Road/VT117
4. Industrial / Mountain View / VT2A
5. VT2A/Marshall Avenue
6. New northbound LT lane at Exit 12

Estimated Cost for HSP2a: $24-39 million

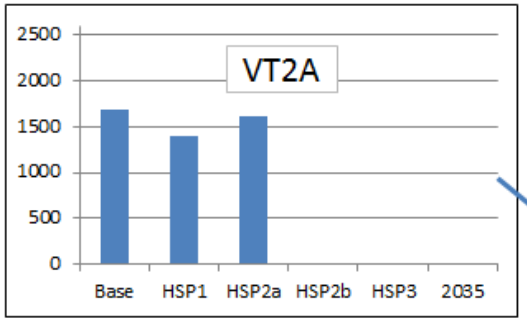
Performance Measures for HSP2a

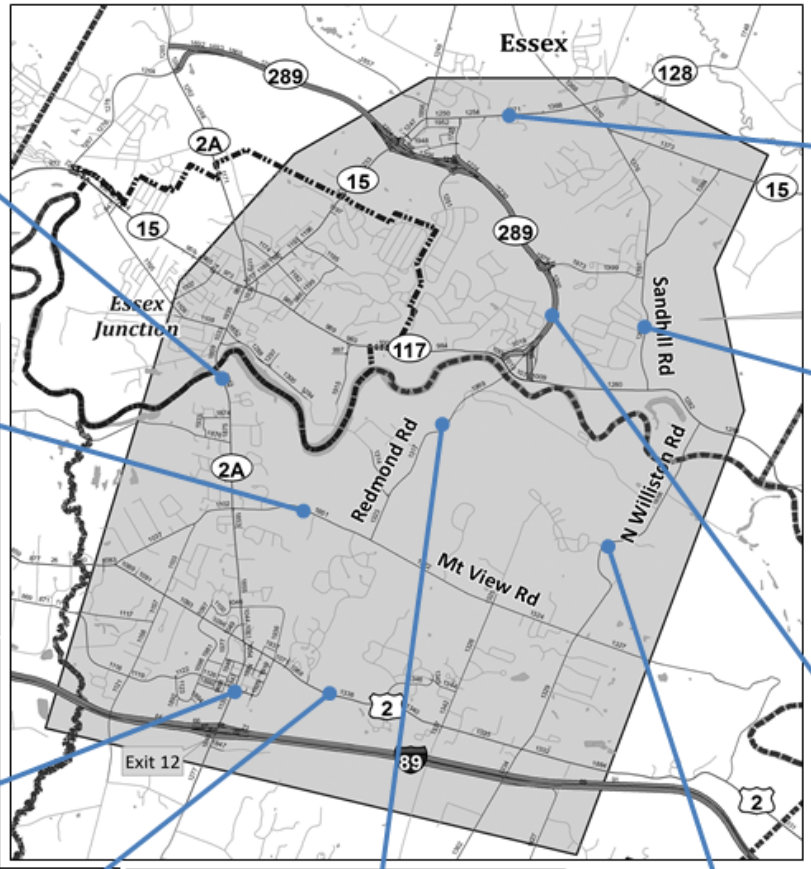


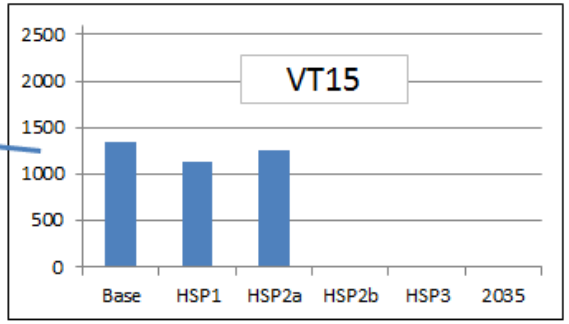


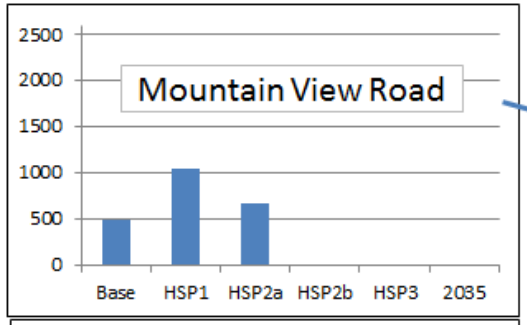


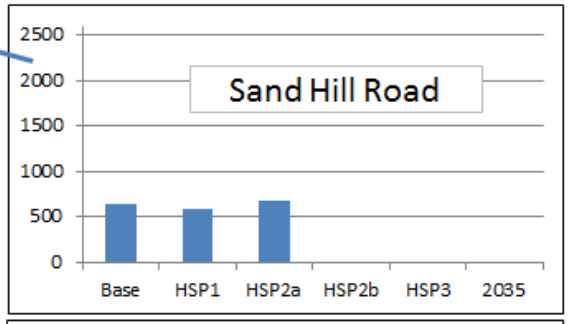
Traffic Flows: 2015 HSP2a

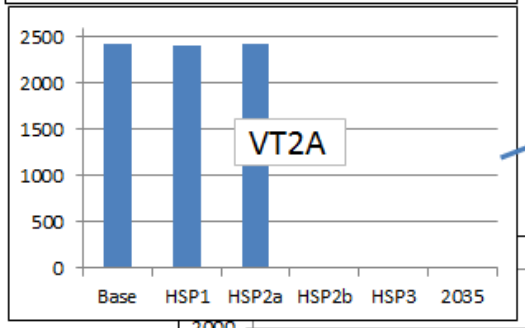


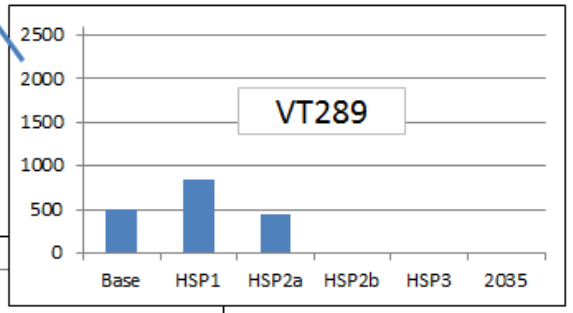


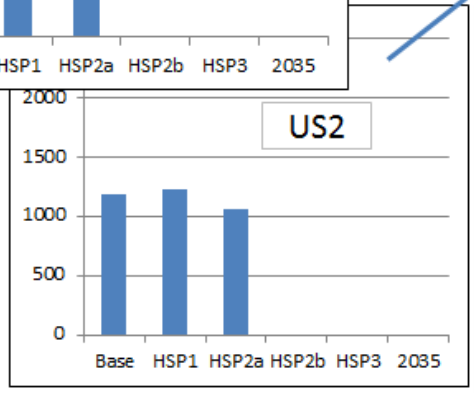


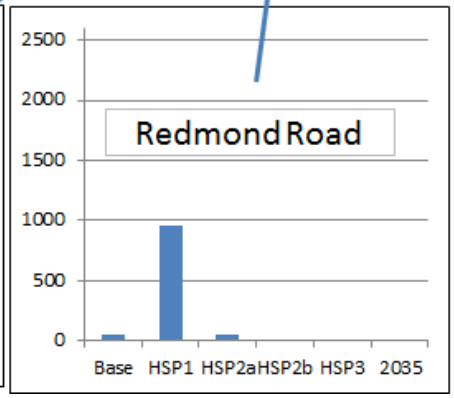


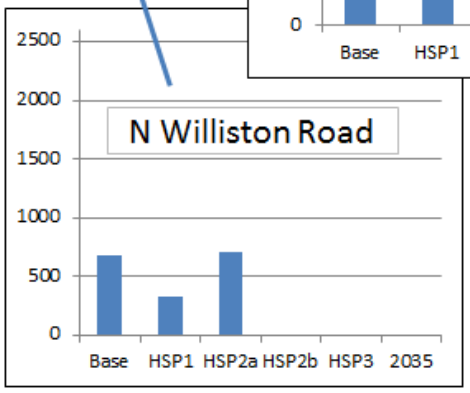




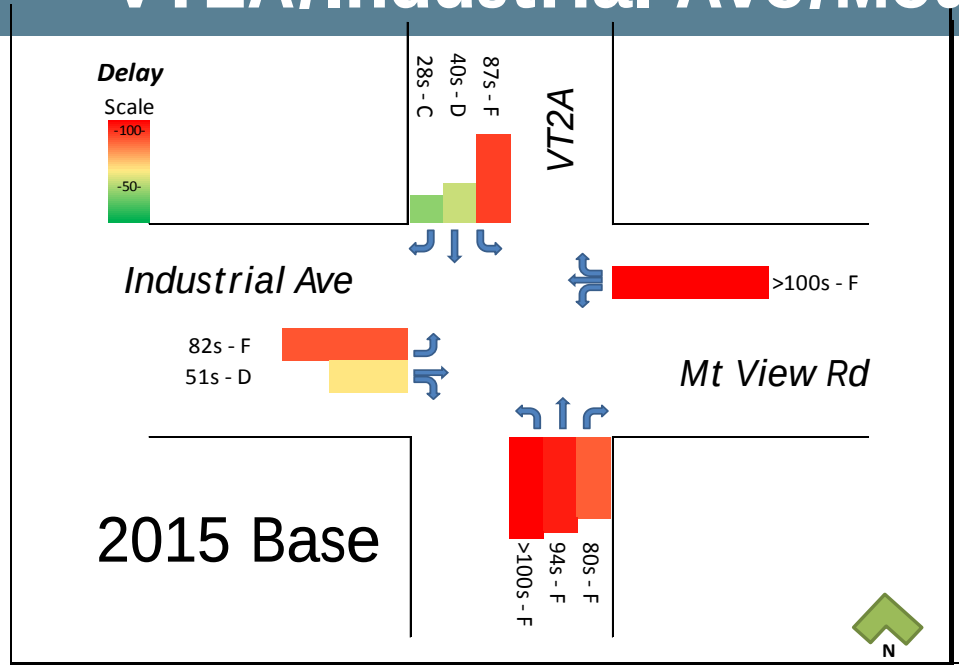


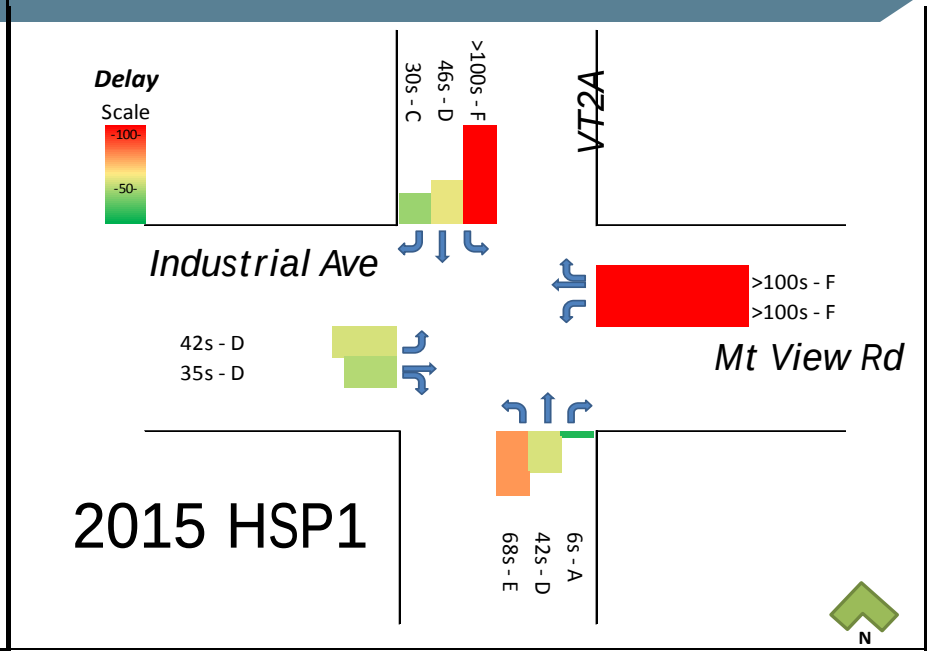


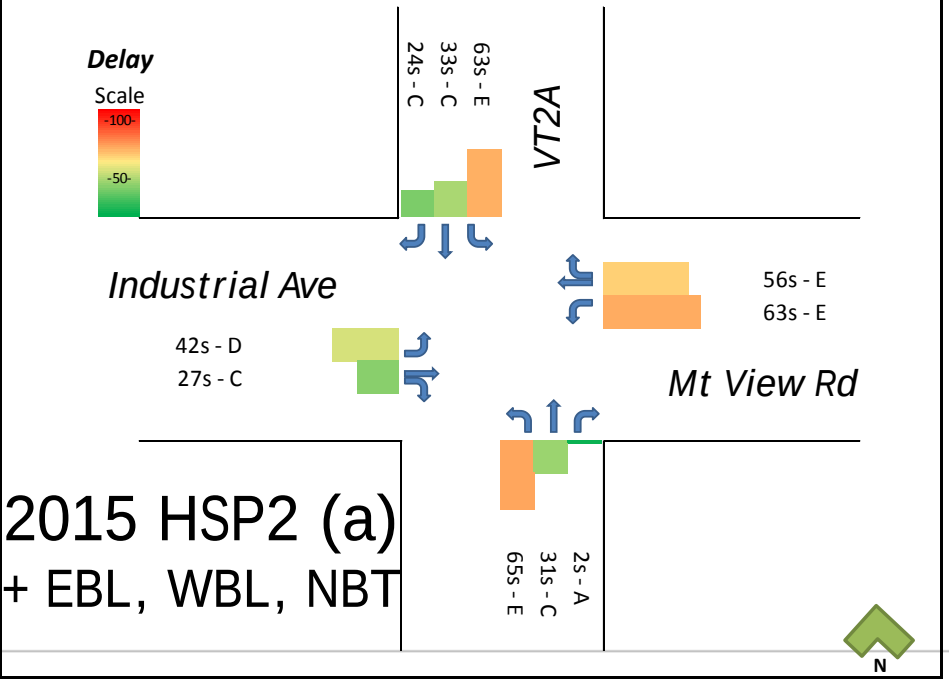




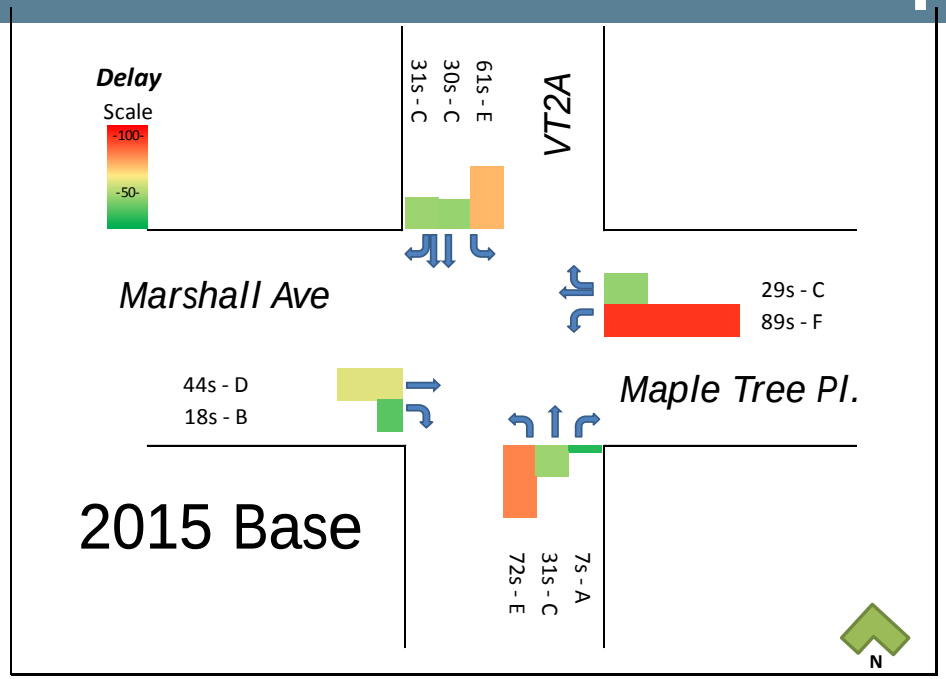
VT2A/Industrial Ave/Mountain View Rd

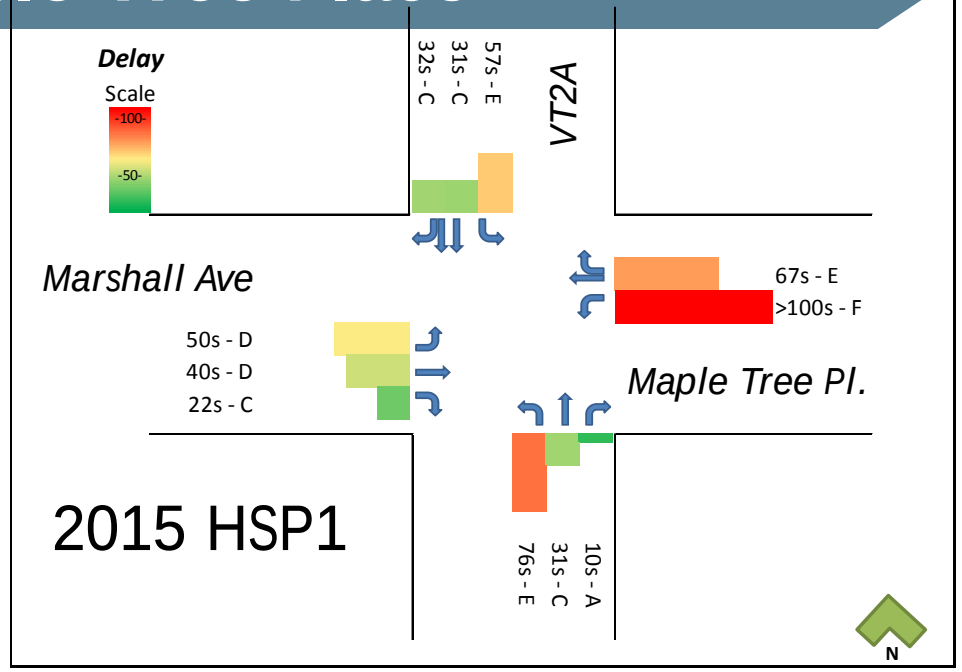


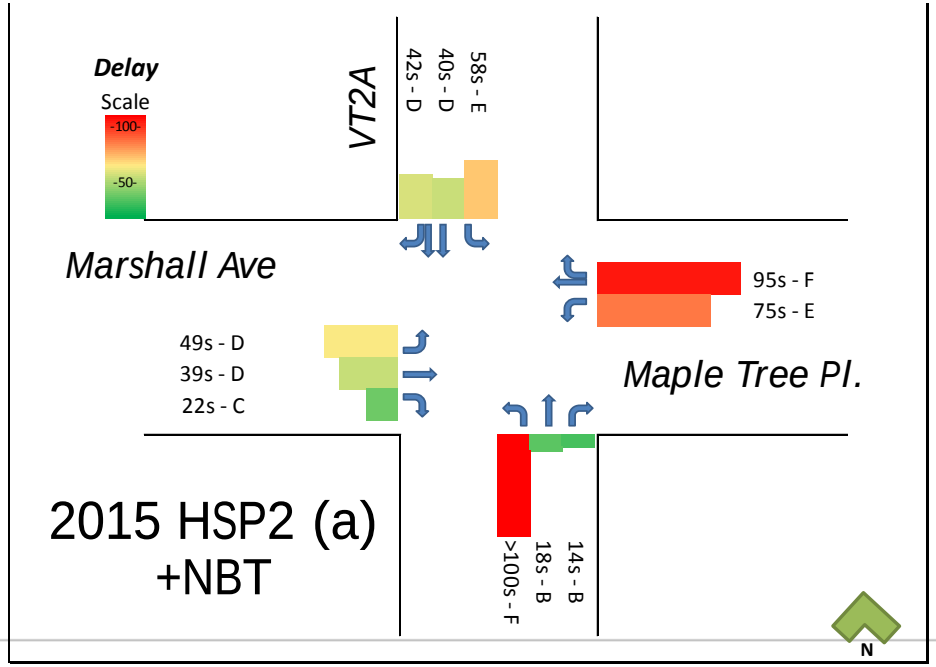




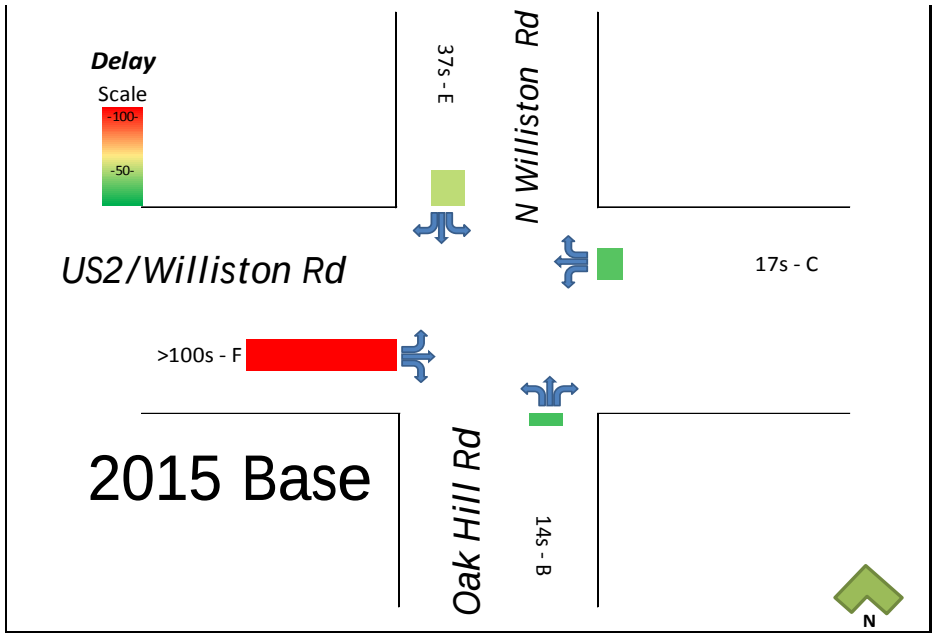
VT2A/Marshall Ave./Maple Tree Place

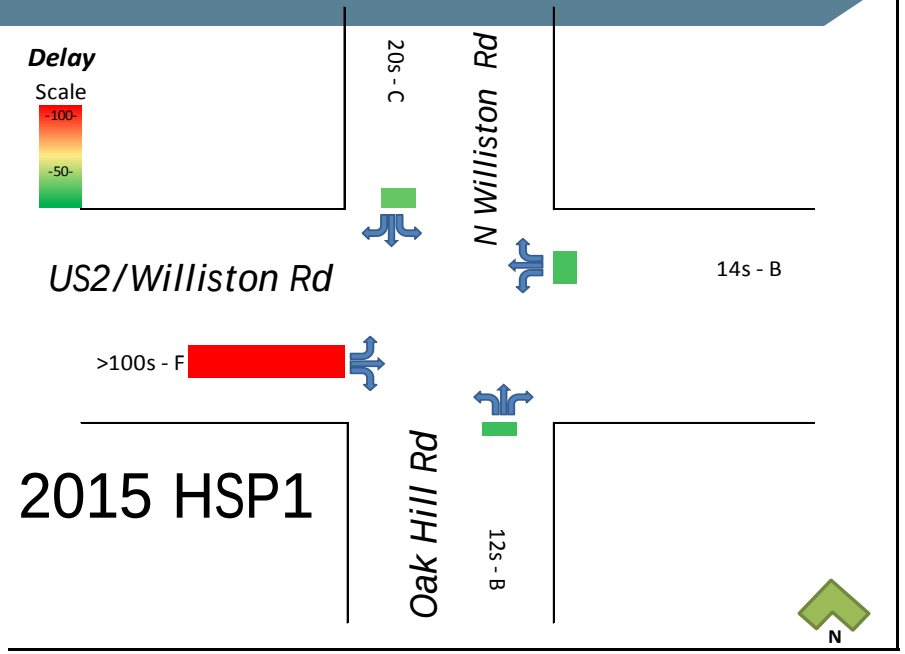


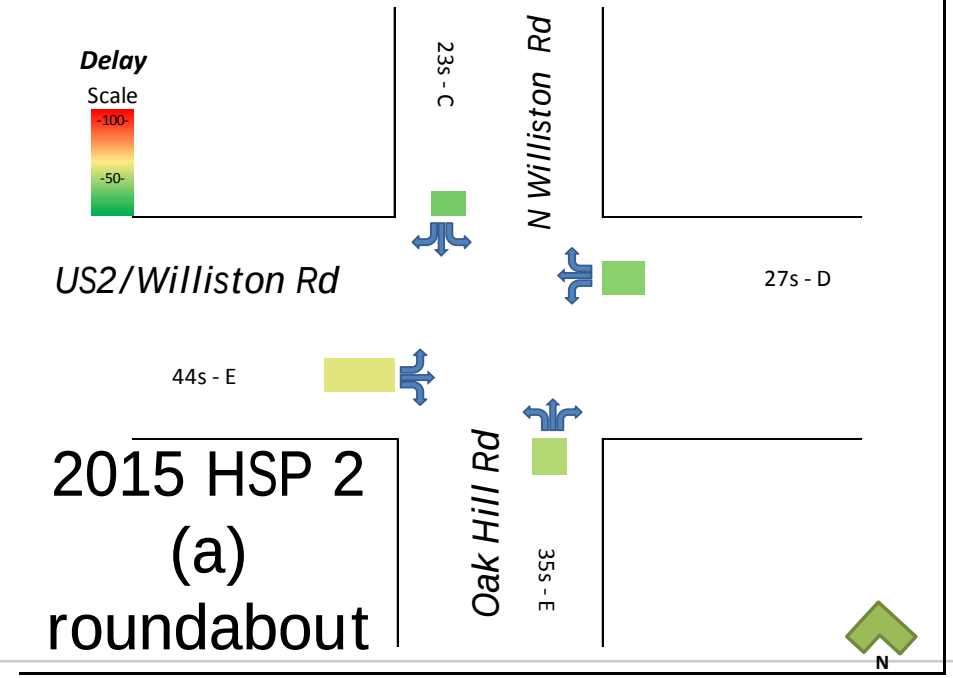




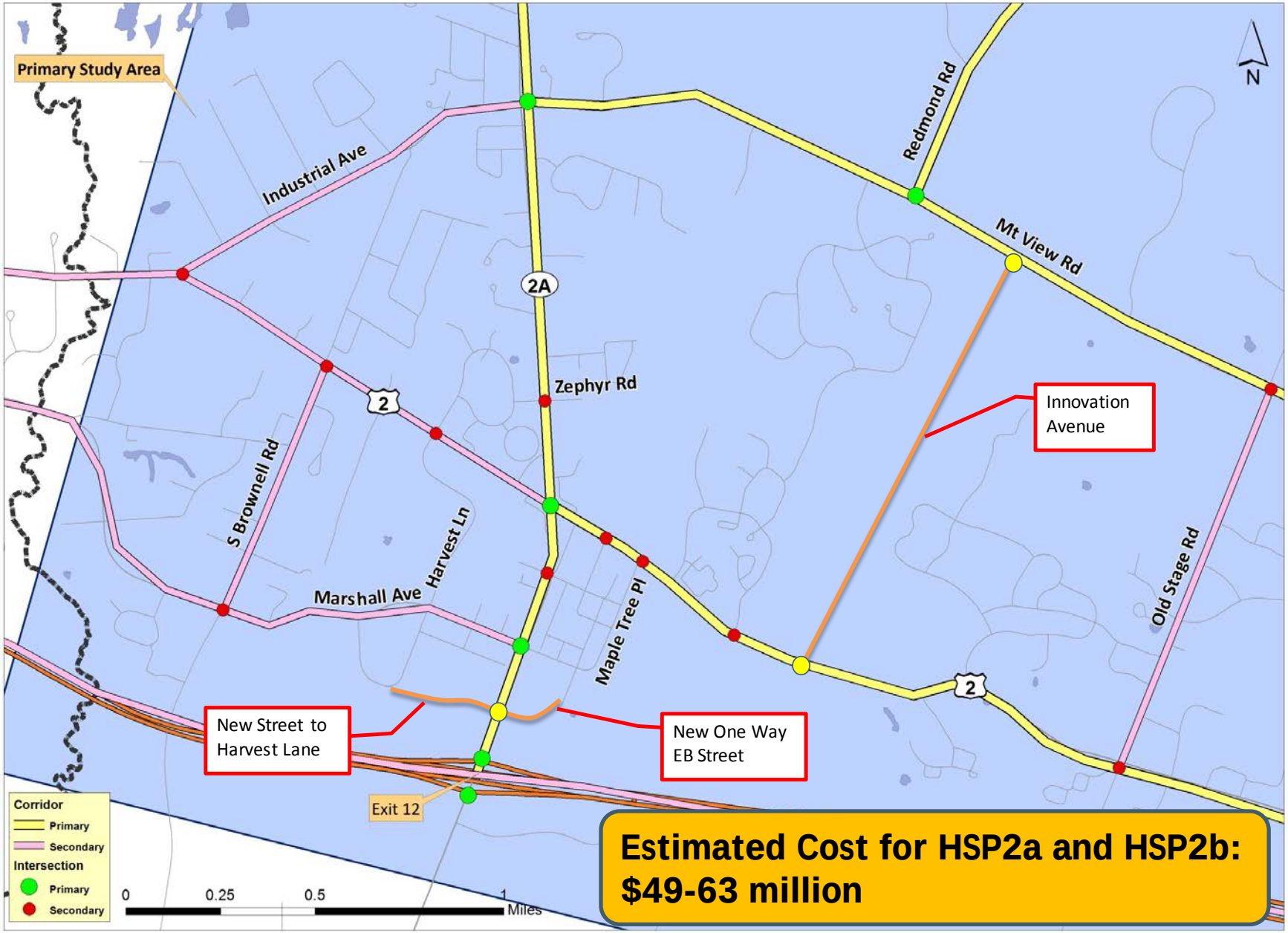
US2/North Williston/Oak Hill Rd





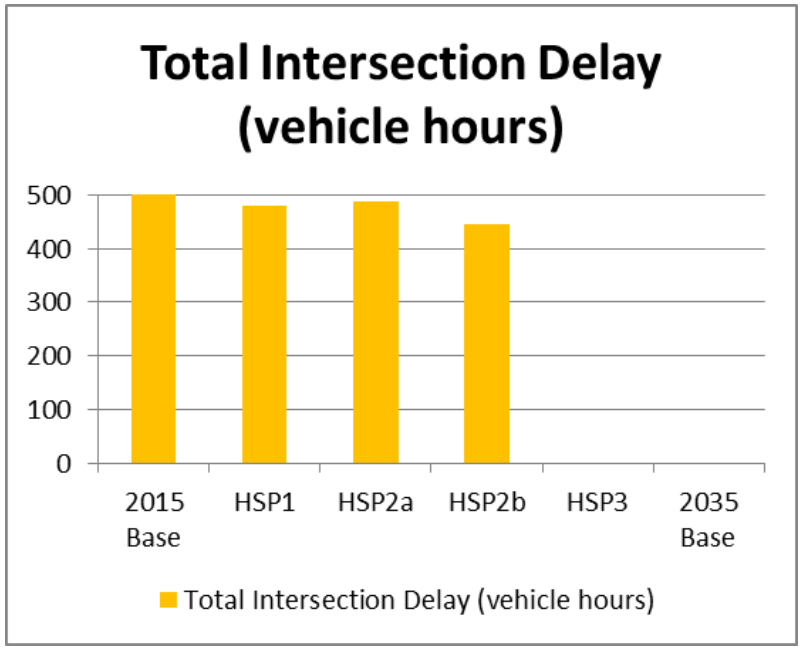


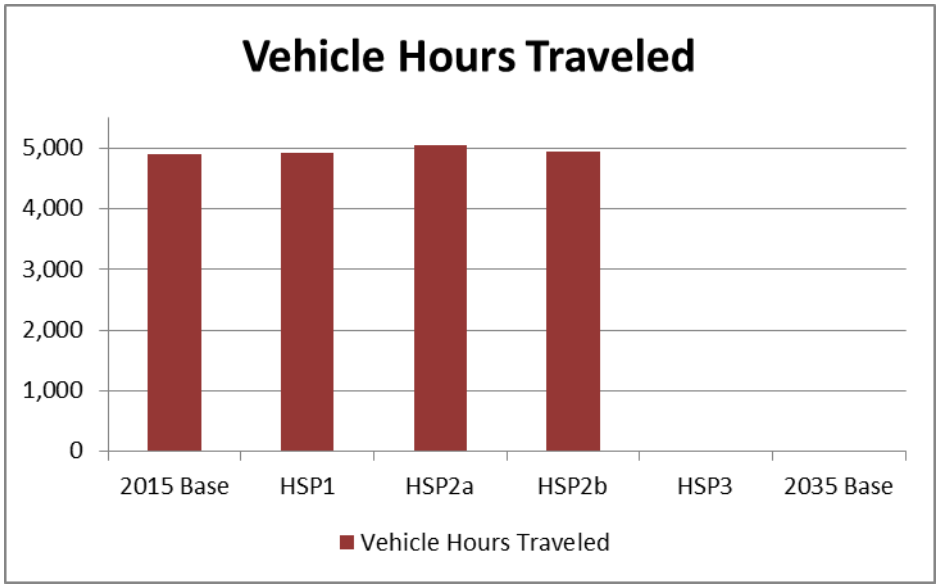
Hybrid Strategy Package 2b – New Streets

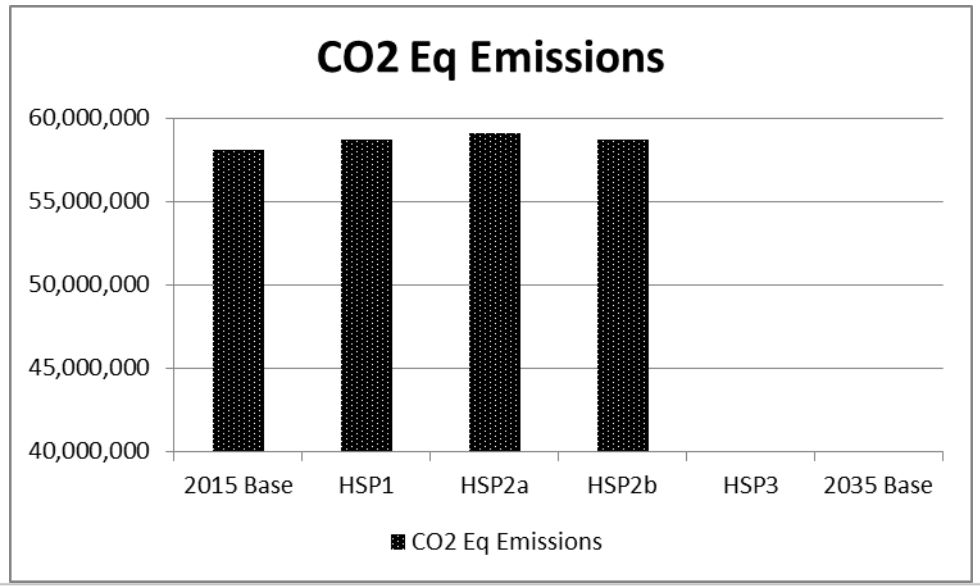


Estimated Cost for HSP2a and HSP2b: $49-63 million

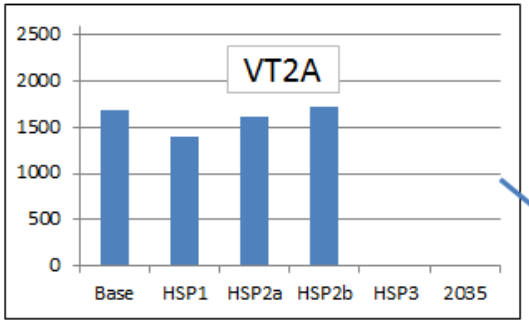
Performance Measures for HSP2b

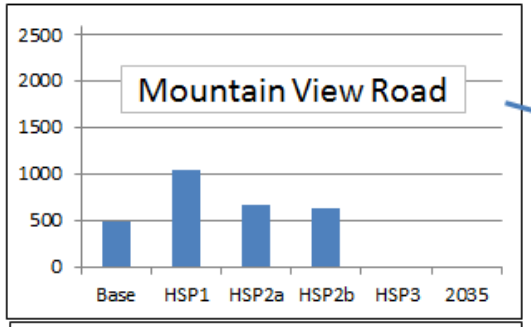


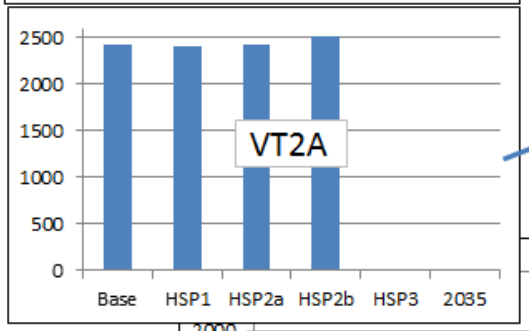


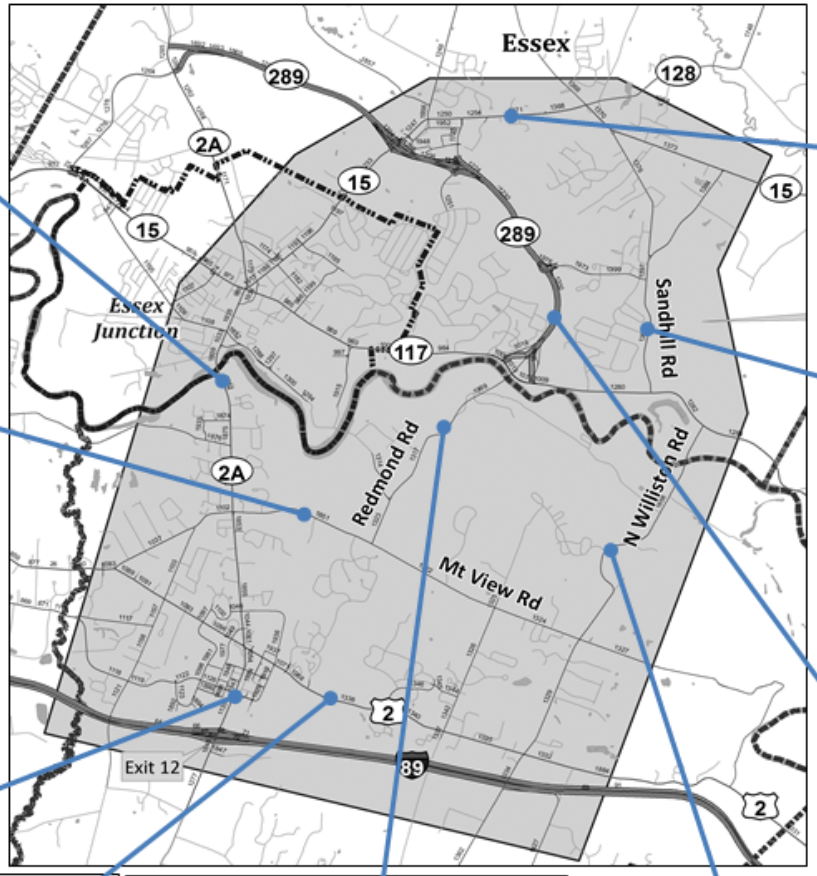


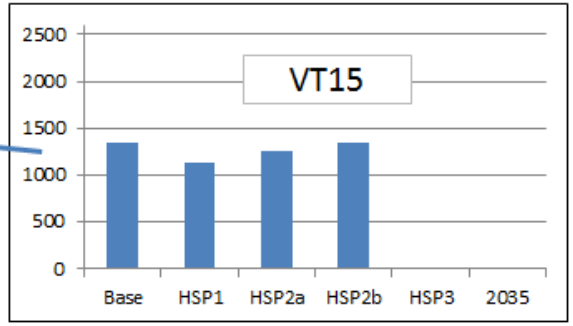
Traffic Flows: 2015 HSP2b

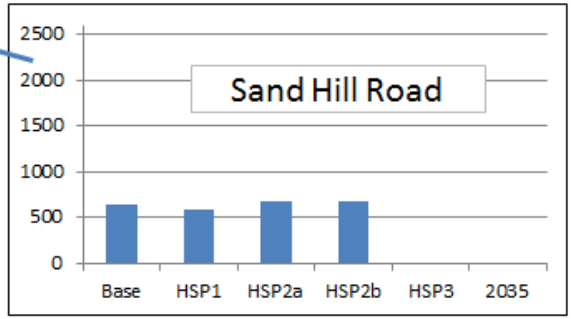


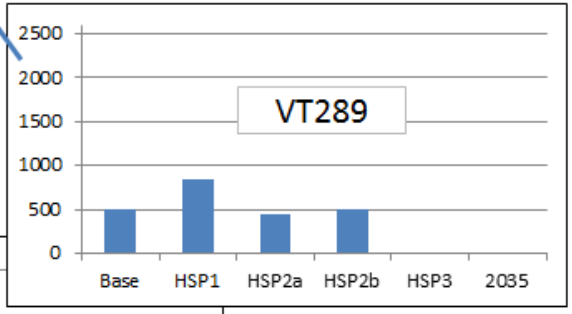


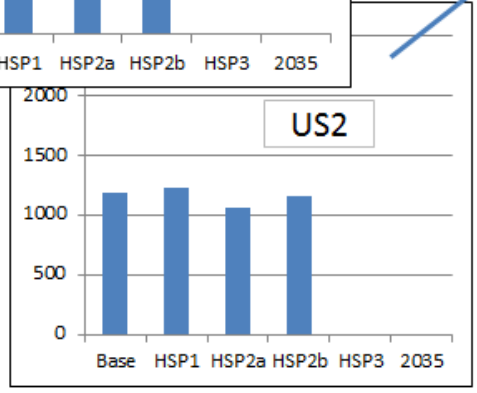


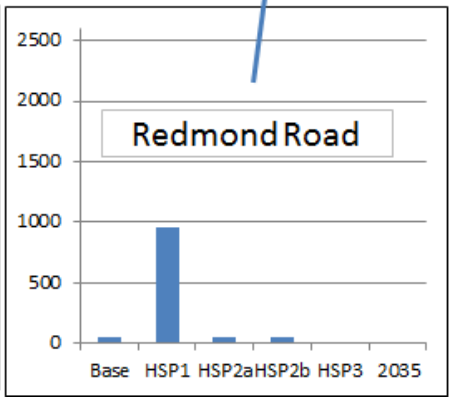


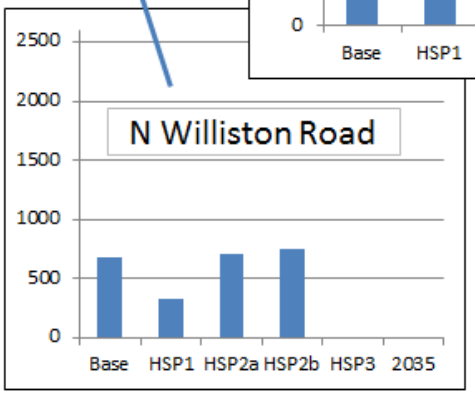




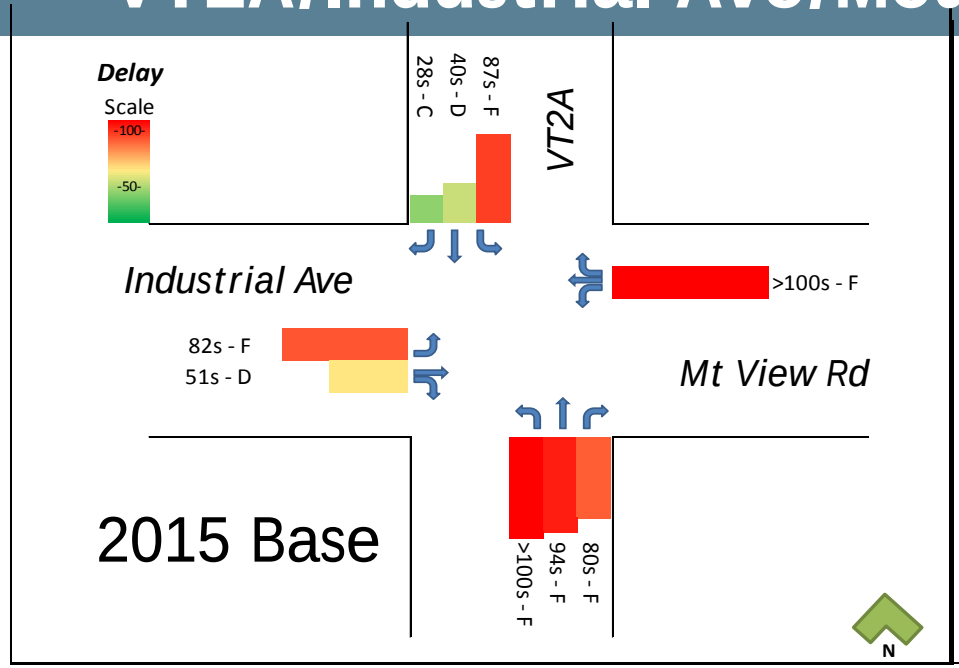


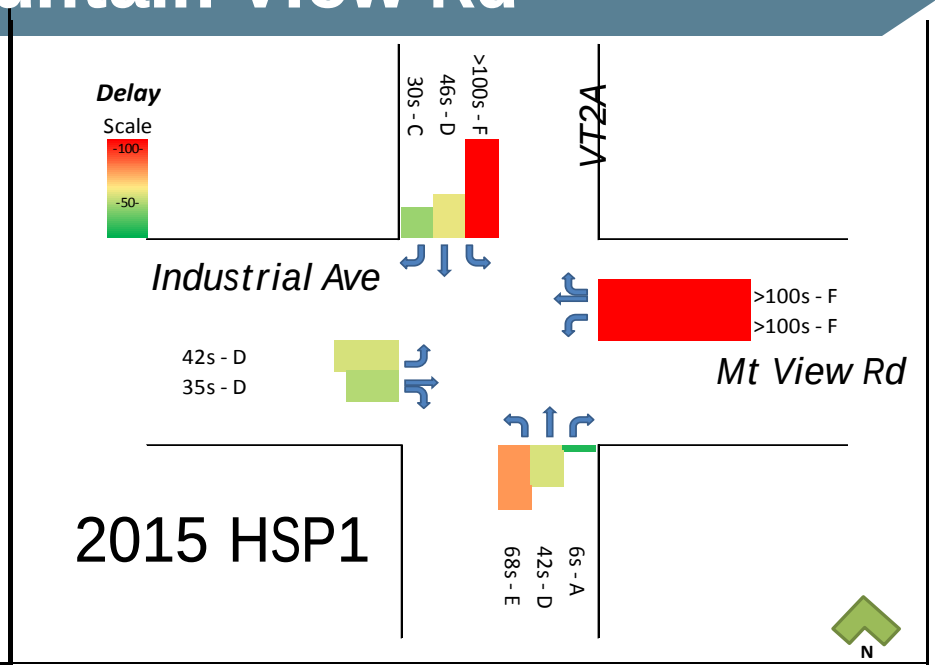


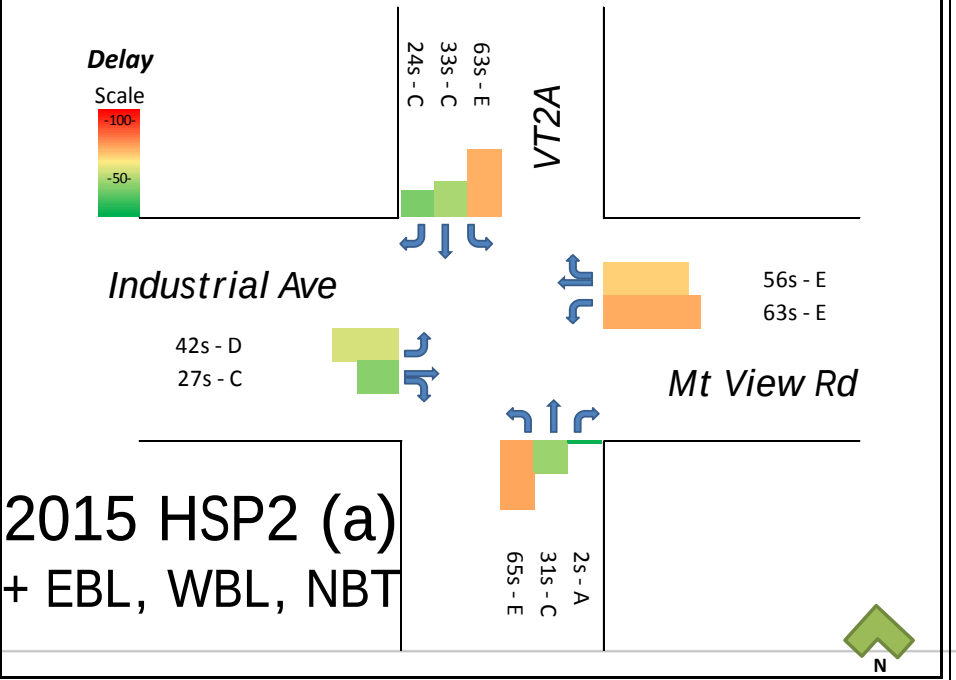


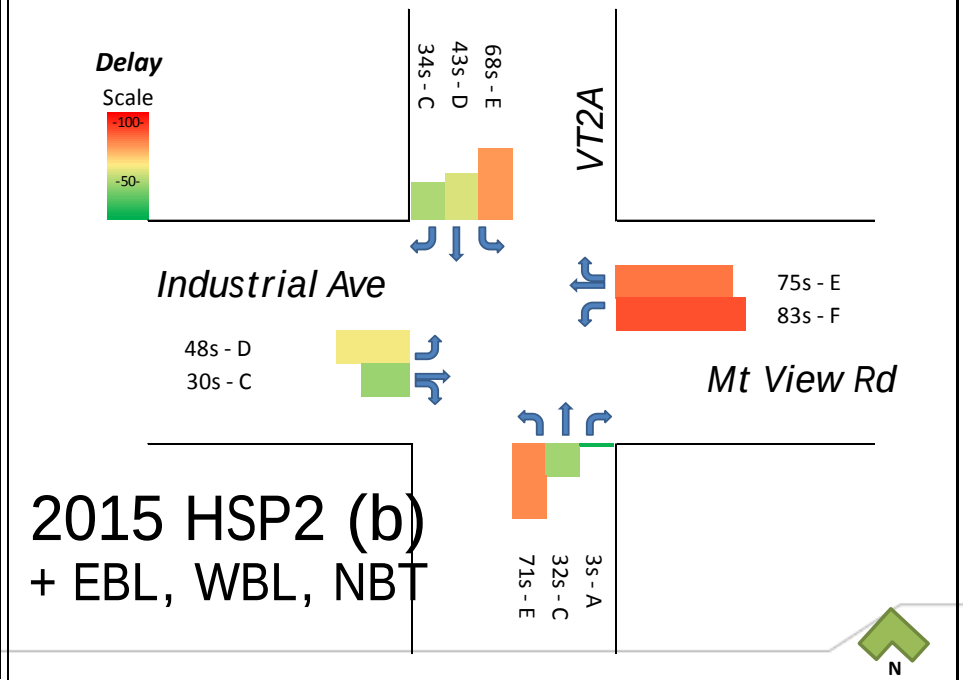


VT2A/Industrial Ave/Mountain View Rd

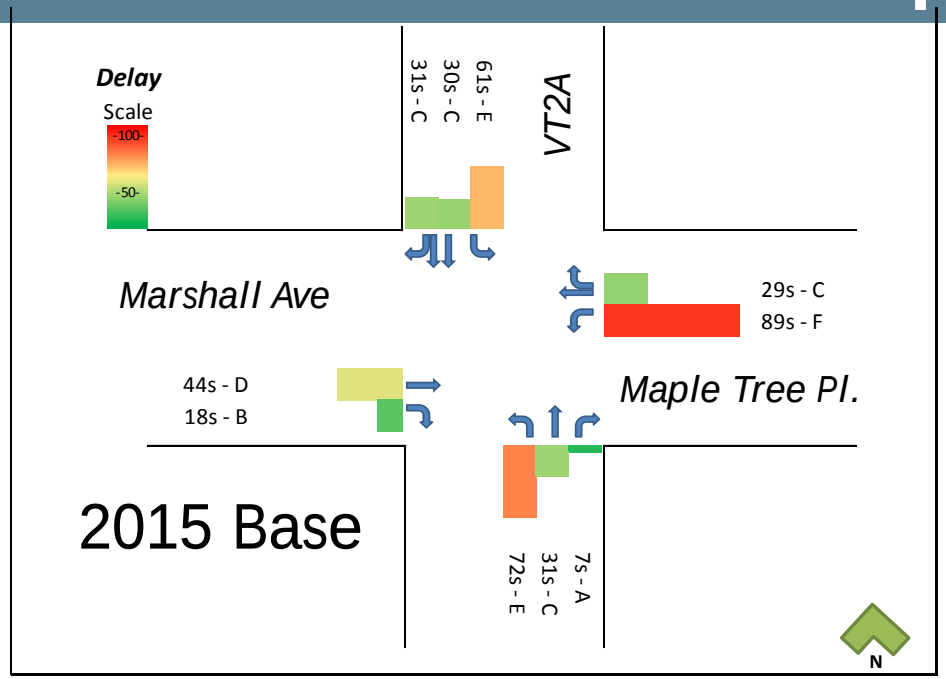


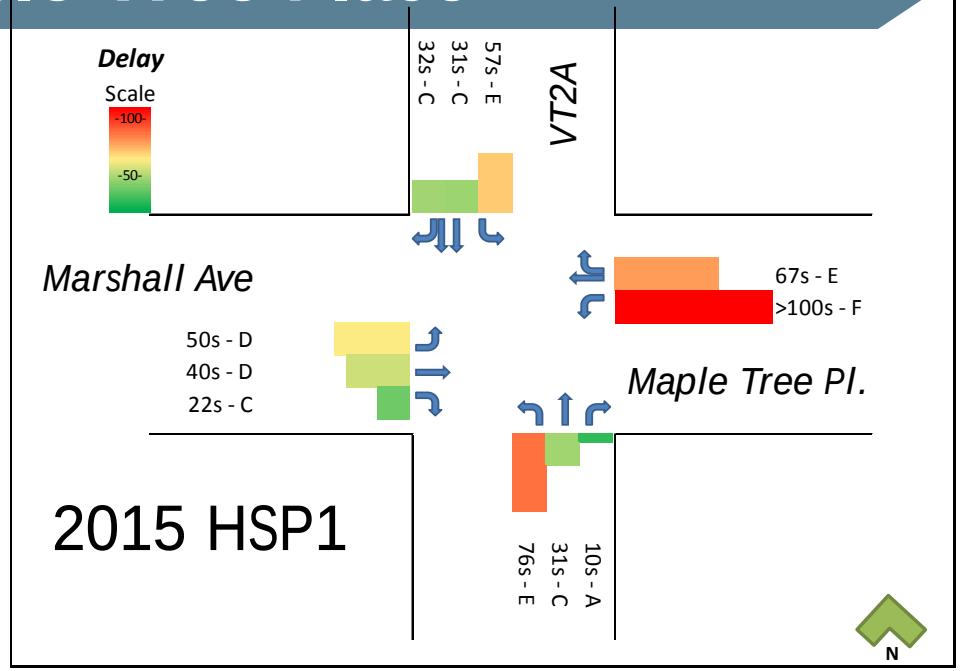


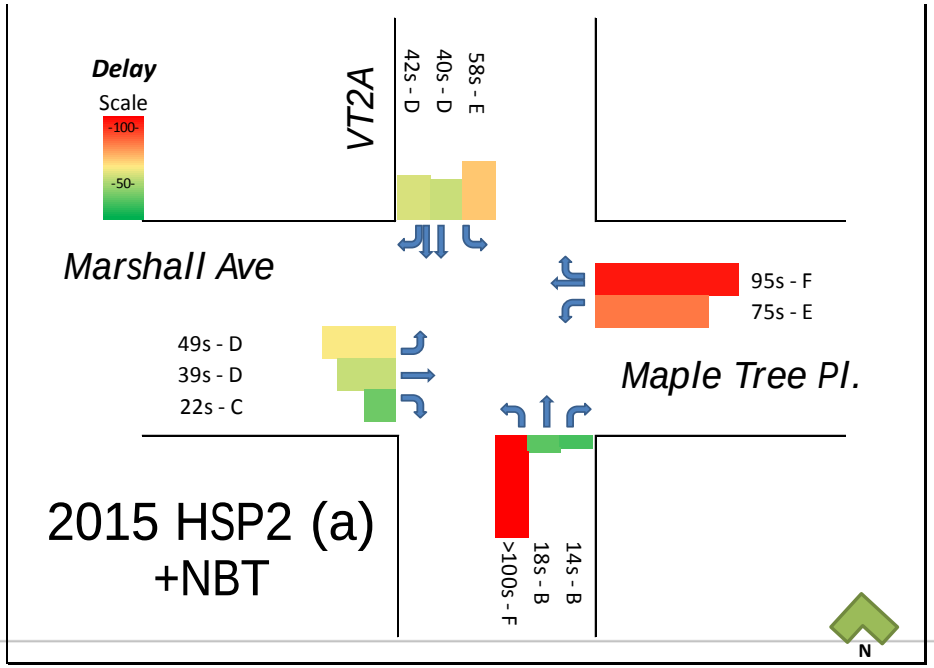


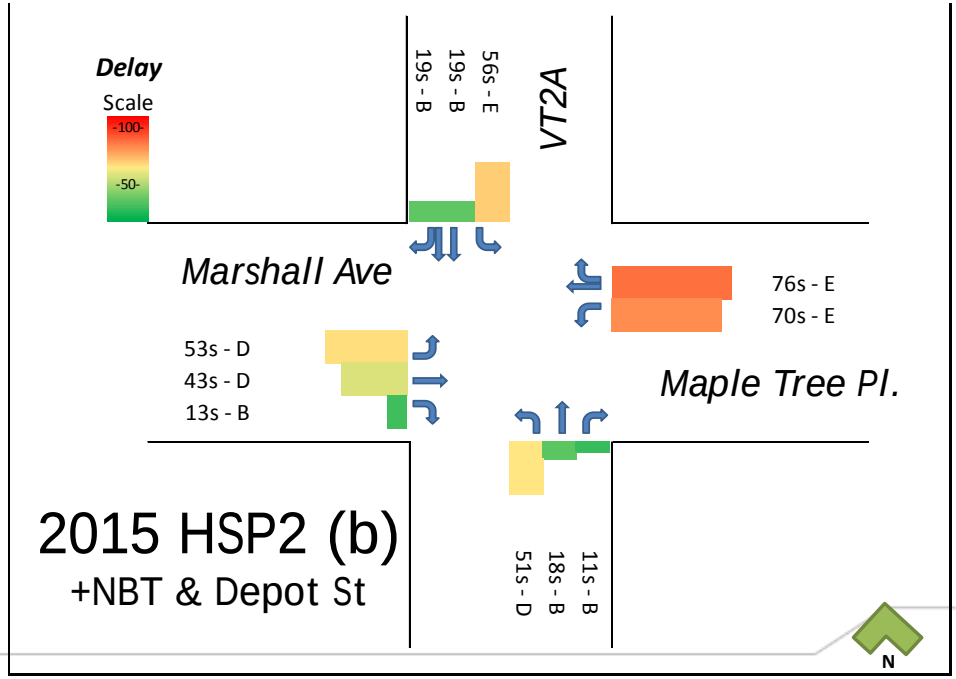


VT2A/Marshall Ave./Maple Tree Place

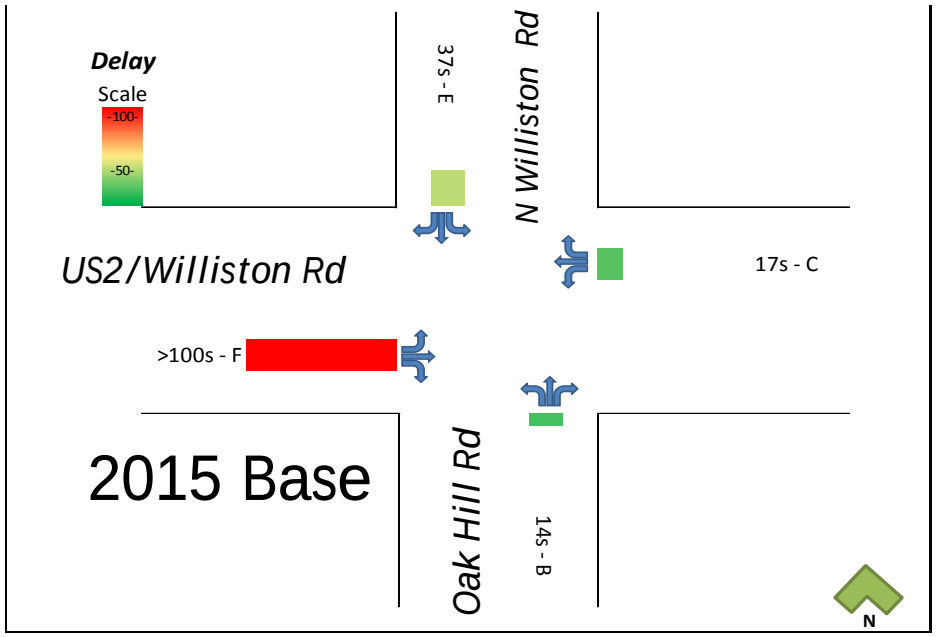


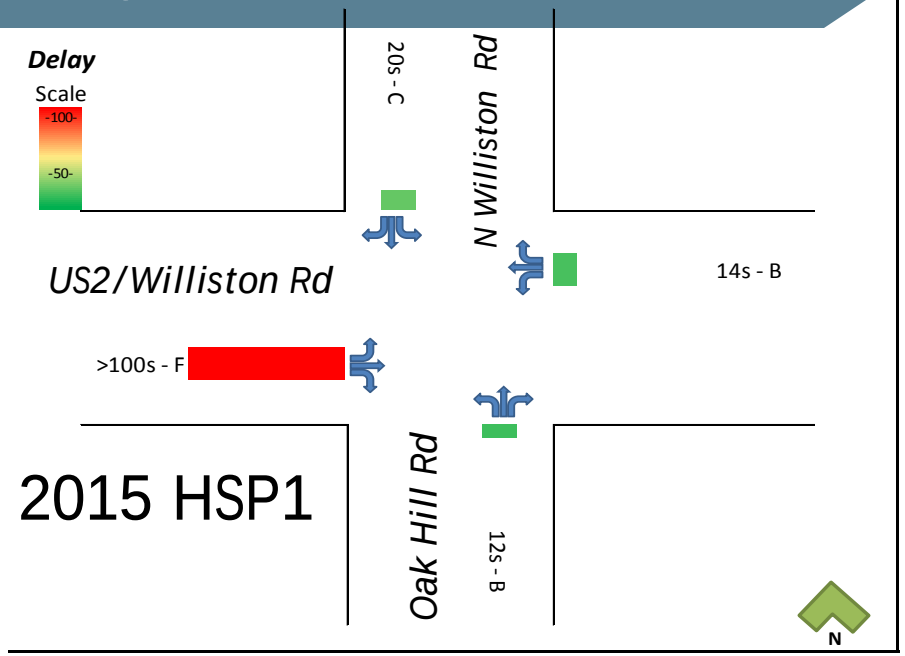


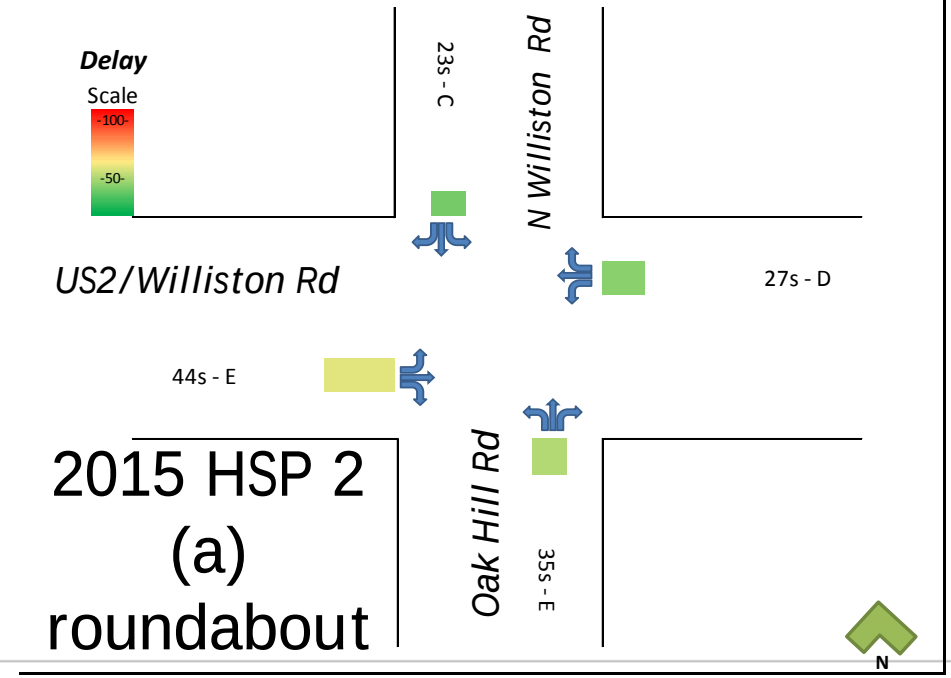


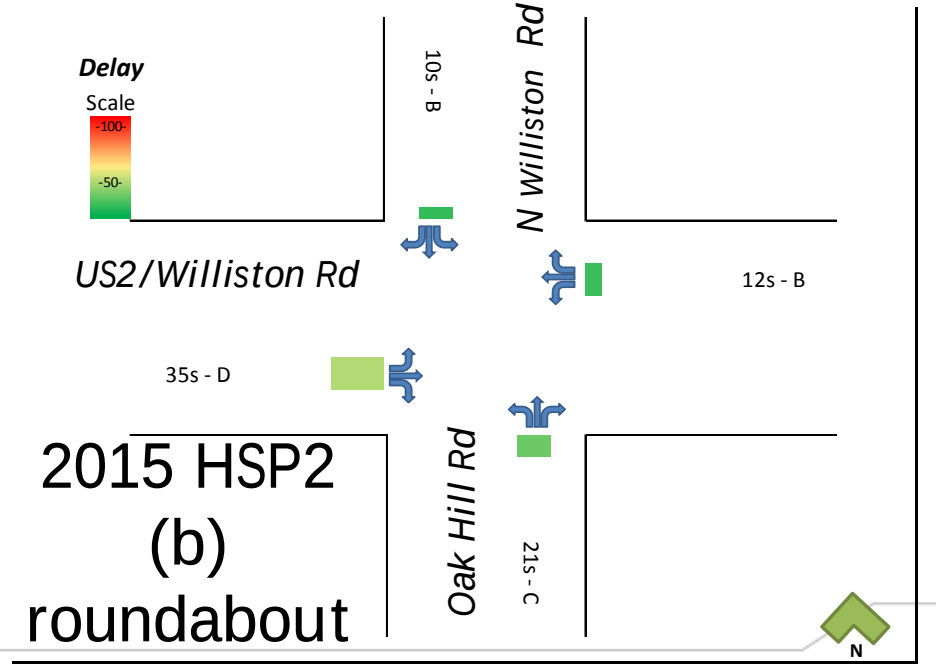


US2/North Williston/Oak Hill Rd









Hybrid Strategy Package 3 (HSP3)

Rebuild the VT2A Corridor from Exit 12 to the Winooski River bridge:

1. Capacity Improvements

i. At Marshall add NB thru lane to Taft Corners (US2)

ii. Marshall Avenue / Maple Tree Place - 2nd west bound thru lane

iii. Industrial/Mountain View/VT2A - 2nd NB thru lane, 2nd EB left turn lane & add WB left turn lane

iv. Exit 12 - add NB left @ NB ramps

2. Add LTLs at all intersections from Industrial/Mountain View to the bridge

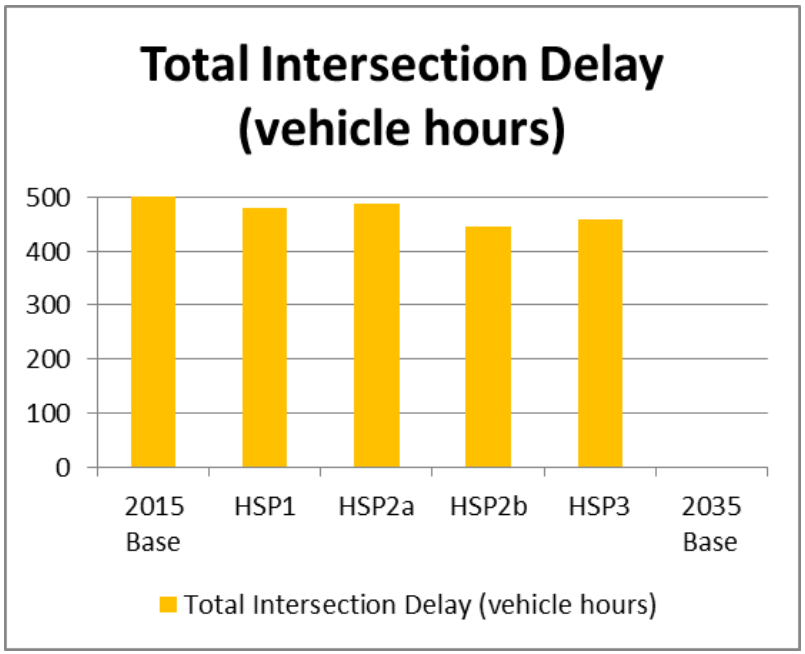
3. New Grid Streets

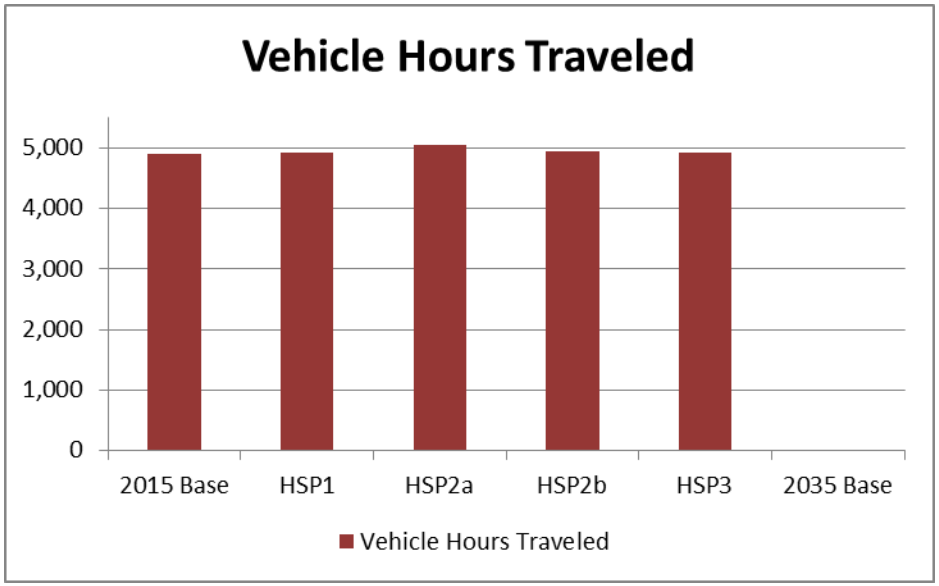
i. Connect VT 2A (at the state police barracks) to Harvest Lane near Home Depot

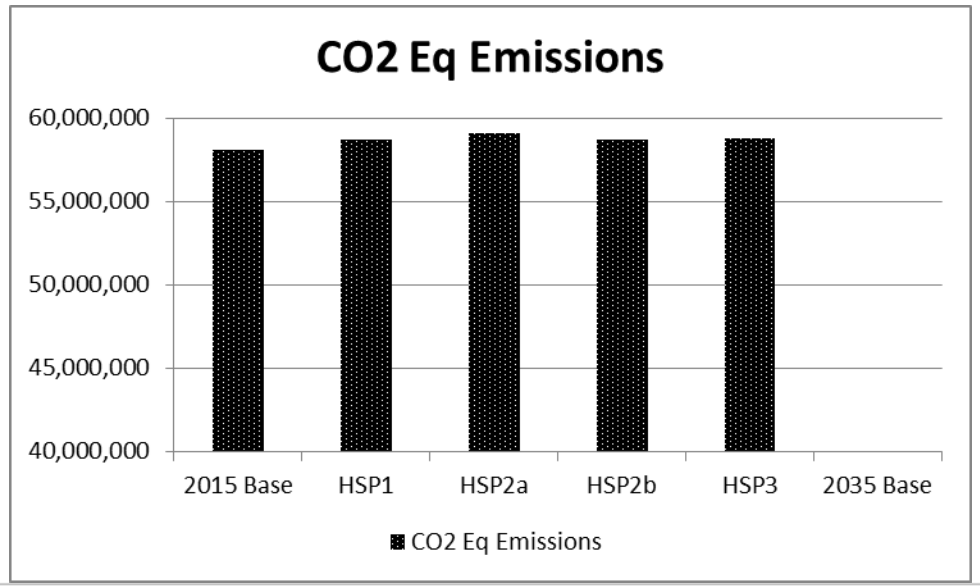
ii. Connect VT2A through state police barracks to the roundabout in Maple Tree Place

Estimated Cost for HSP3: $32-43 million

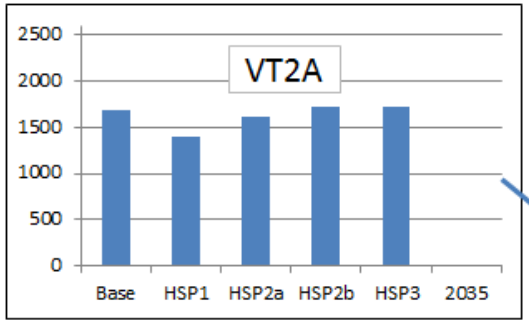
Performance Measures for HSP3

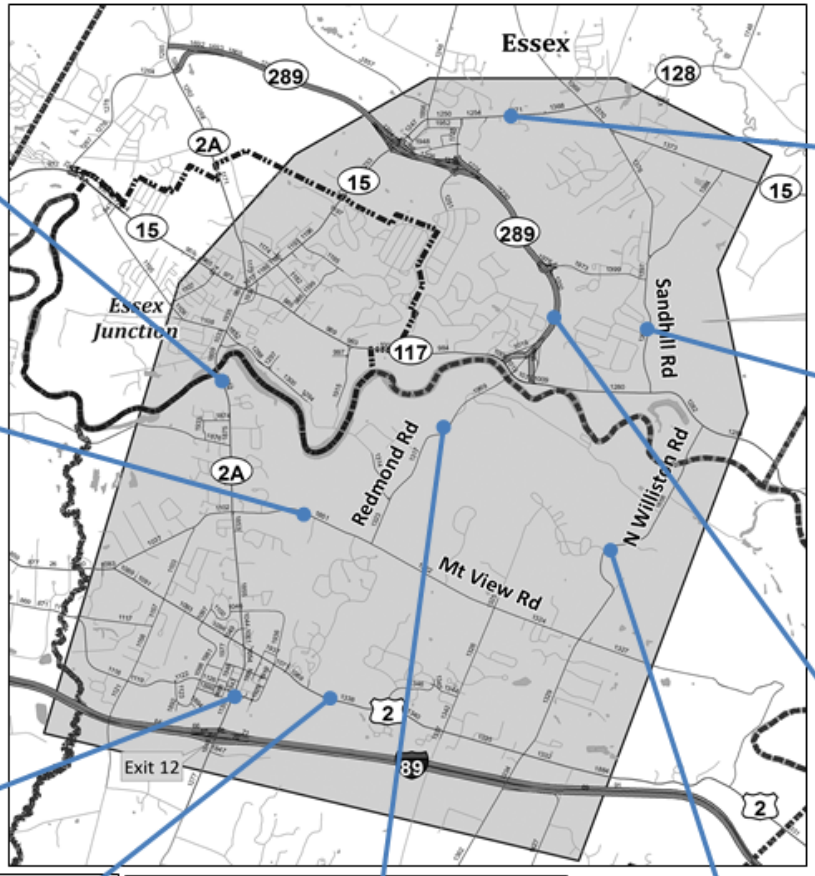


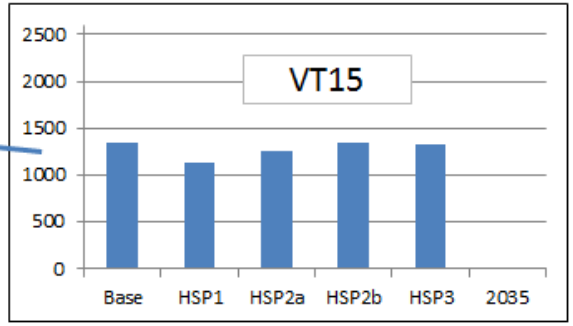


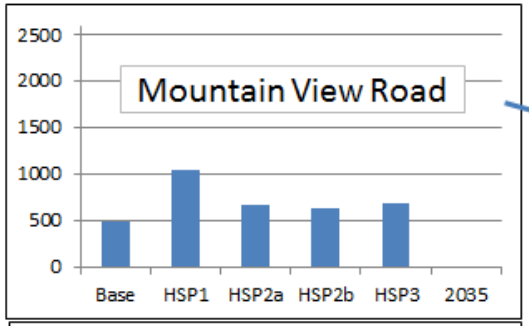


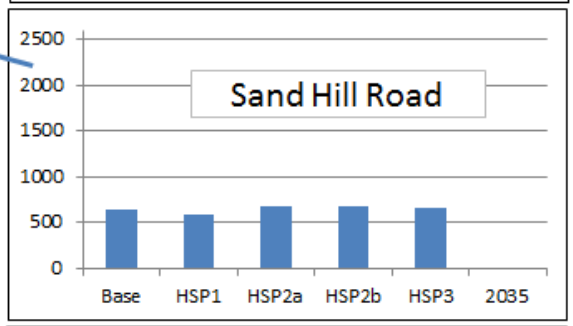
Traffic Flows: 2015 HSP3

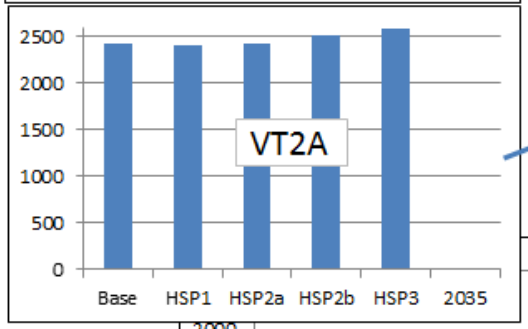


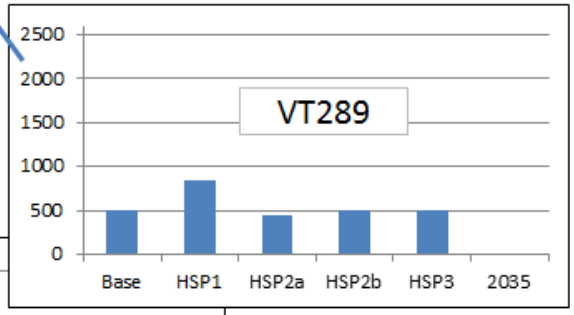


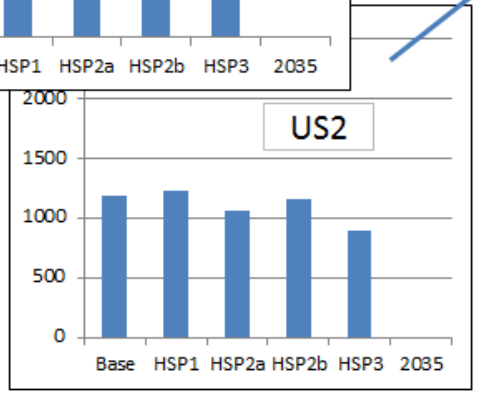


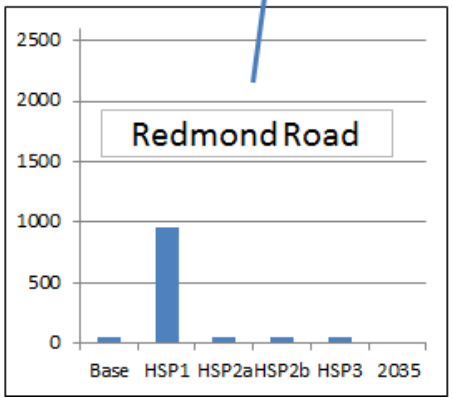


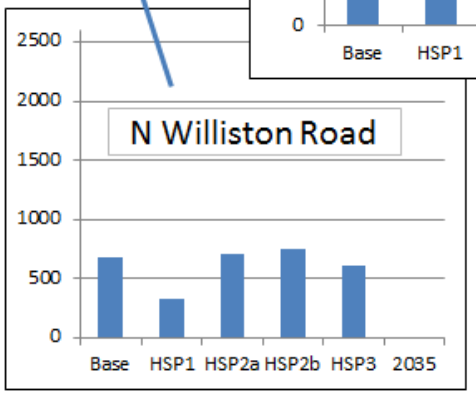




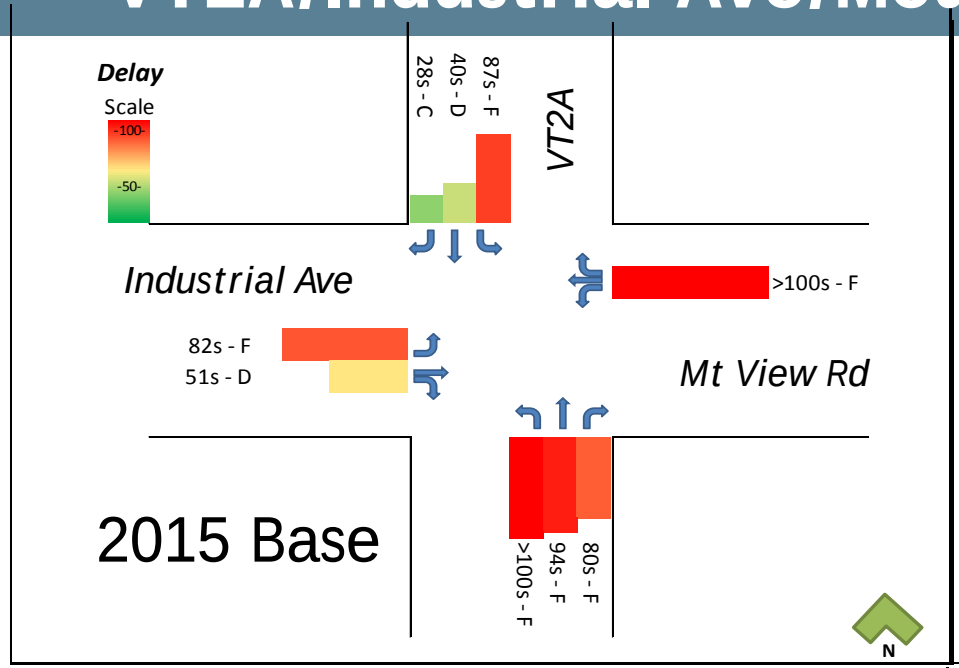


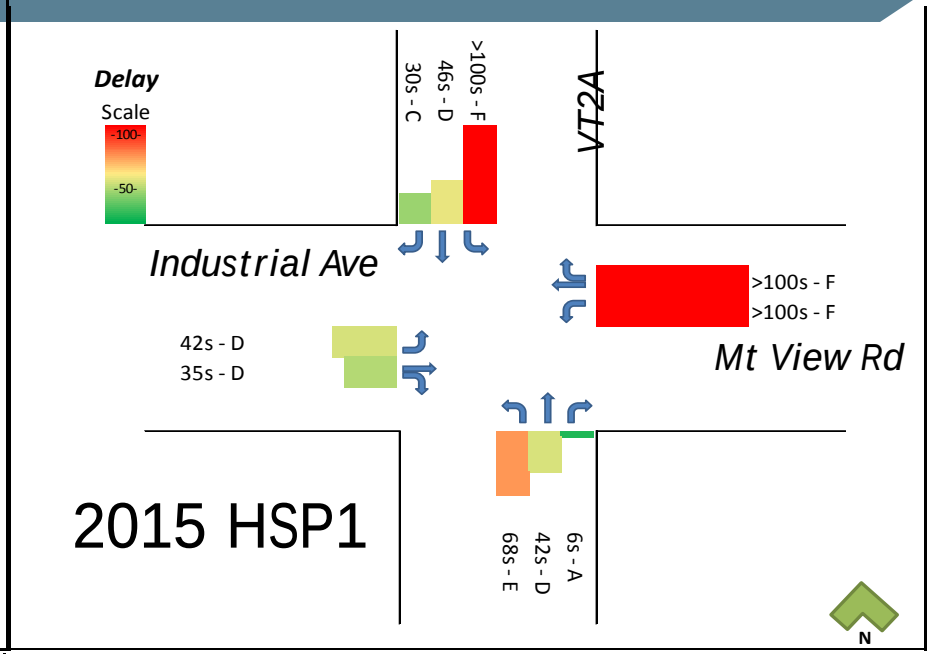


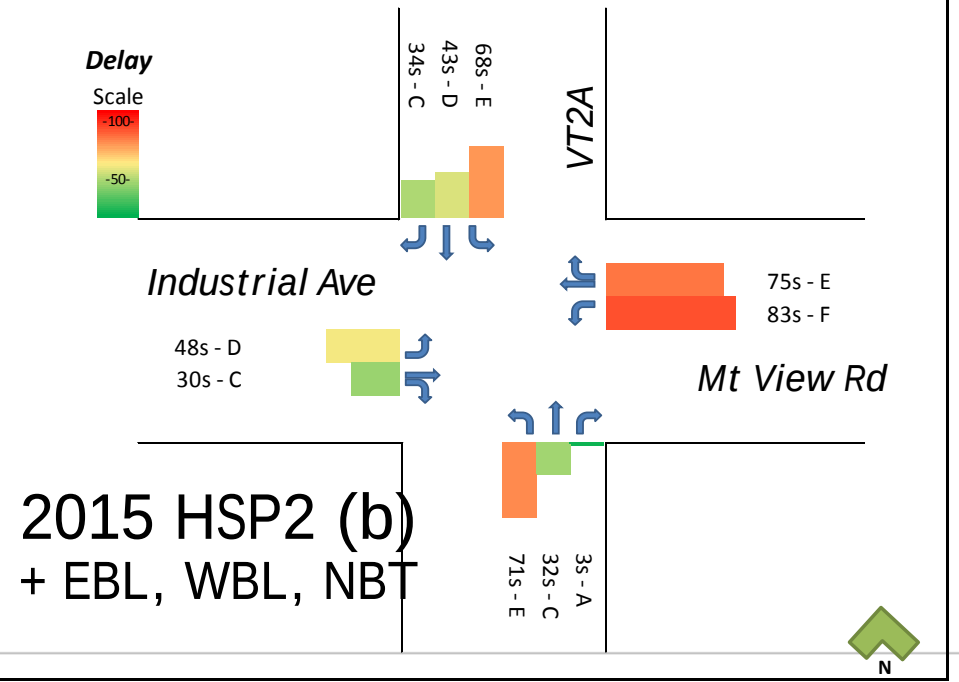


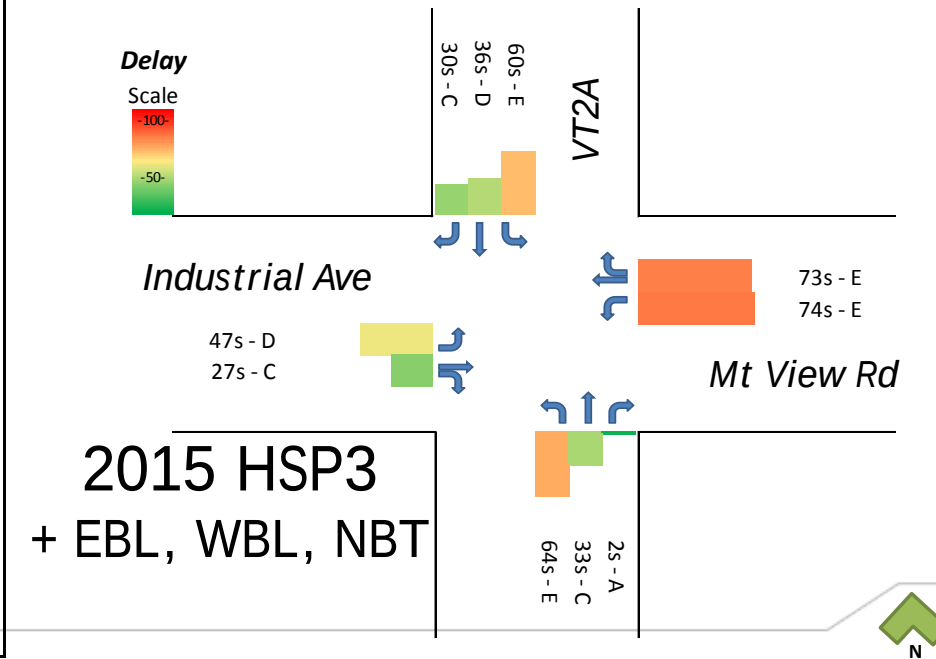


VT2A/Industrial Ave/Mountain View Rd

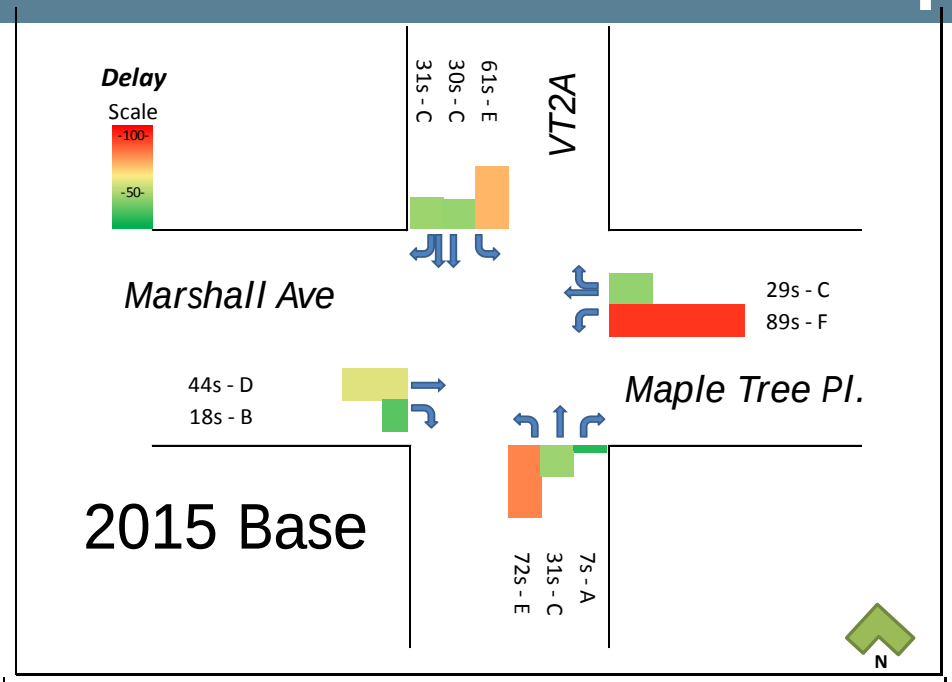


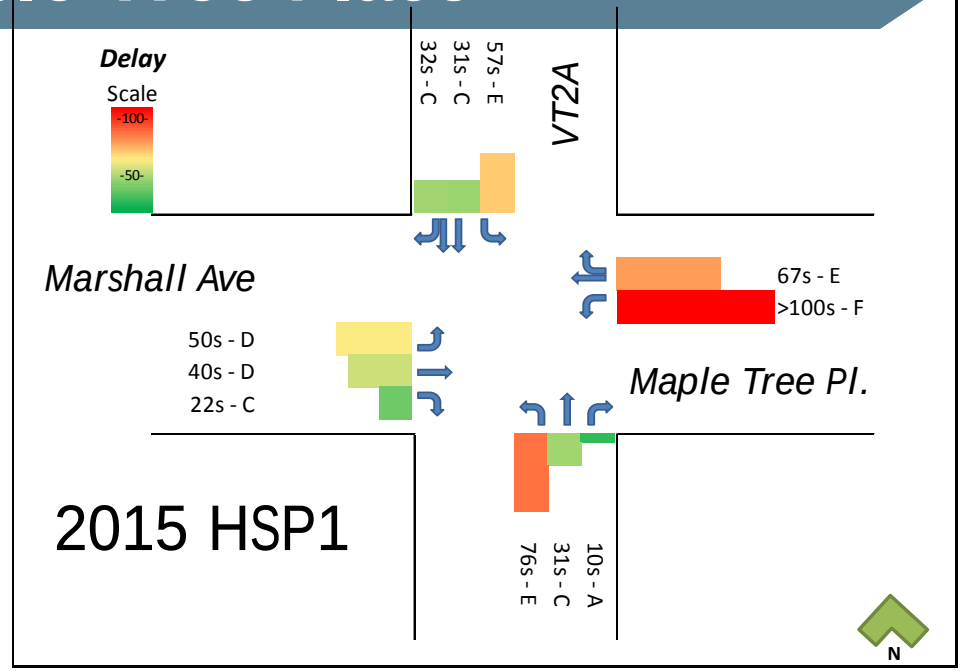


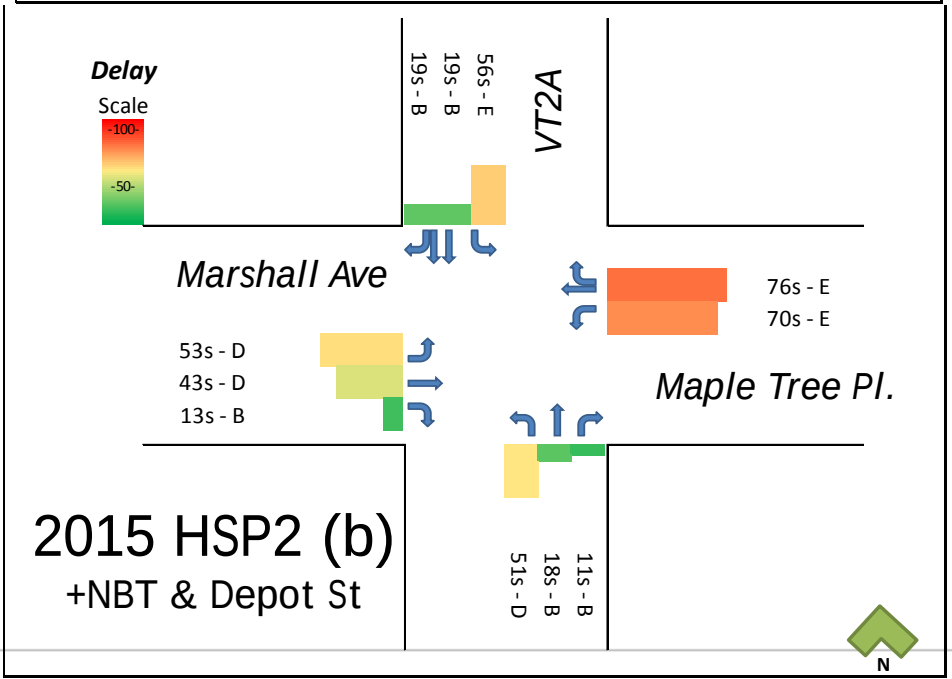


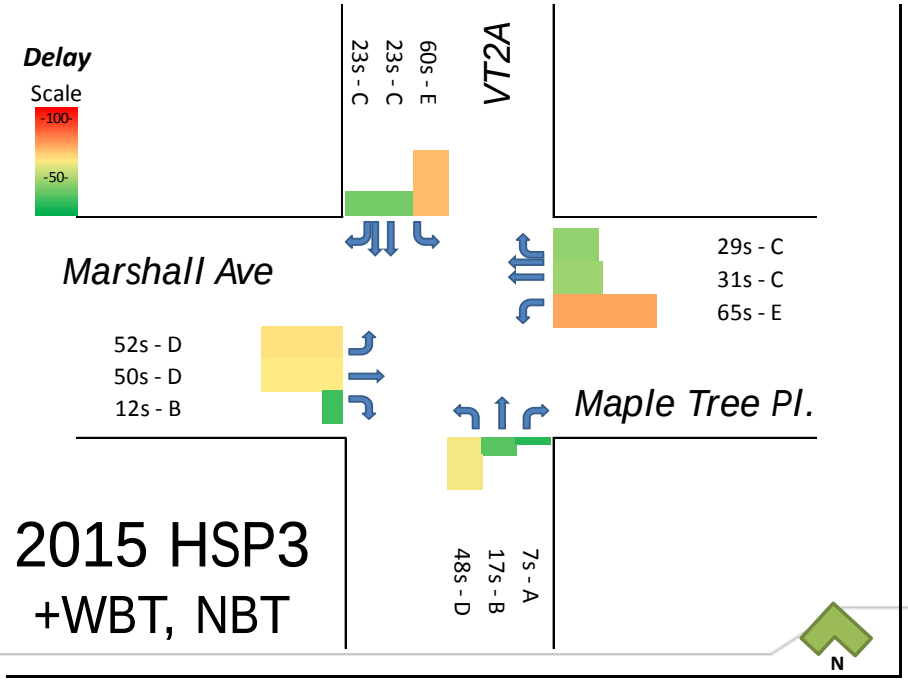


VT2A/Marshall Ave./Maple Tree Place

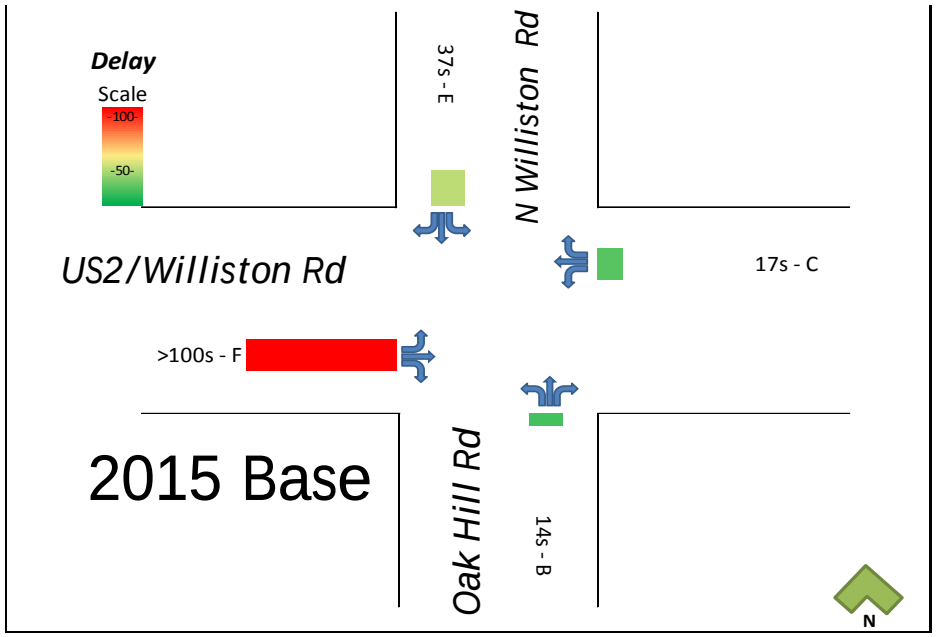


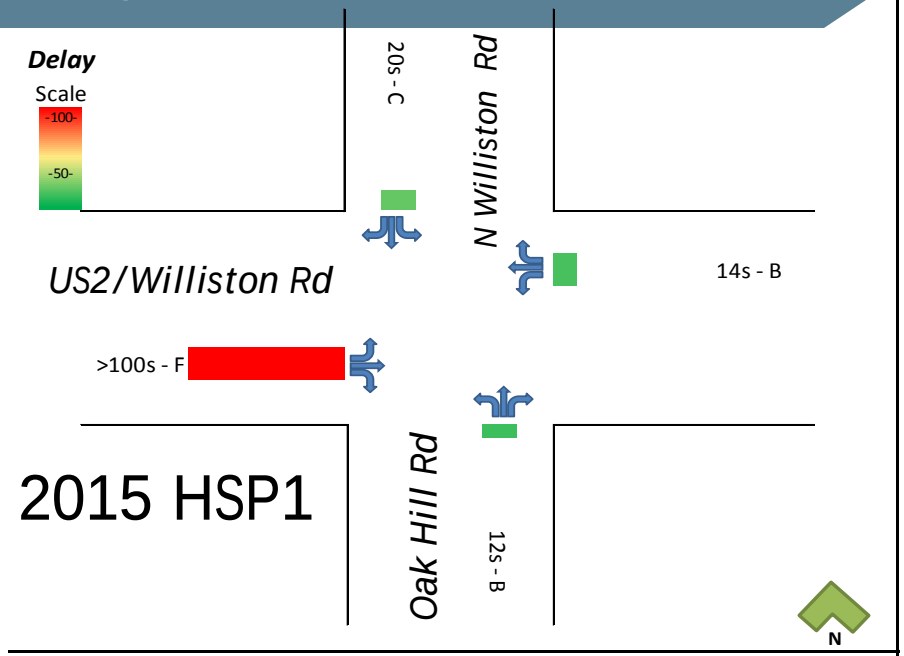


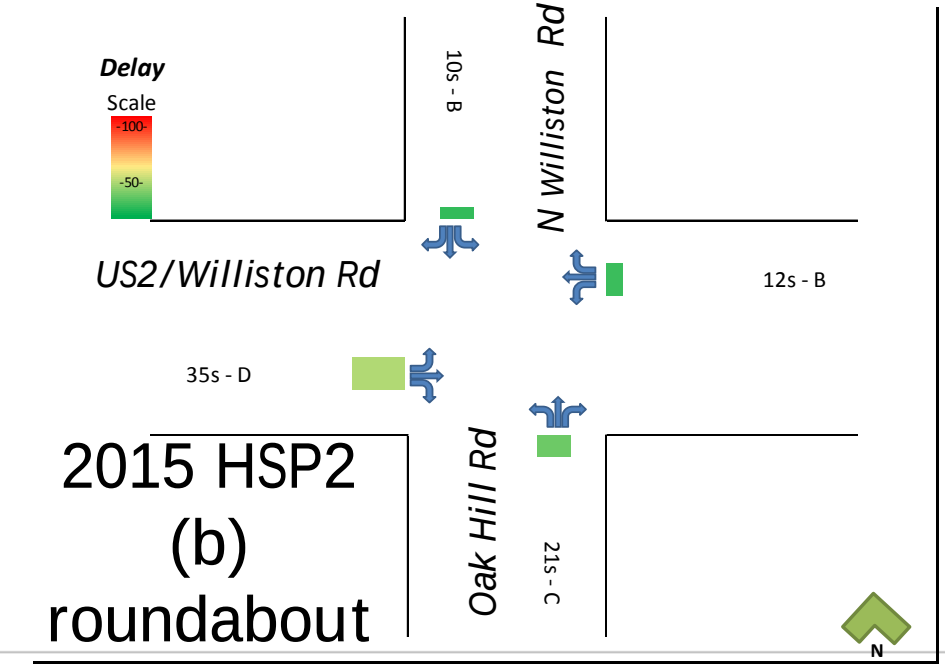


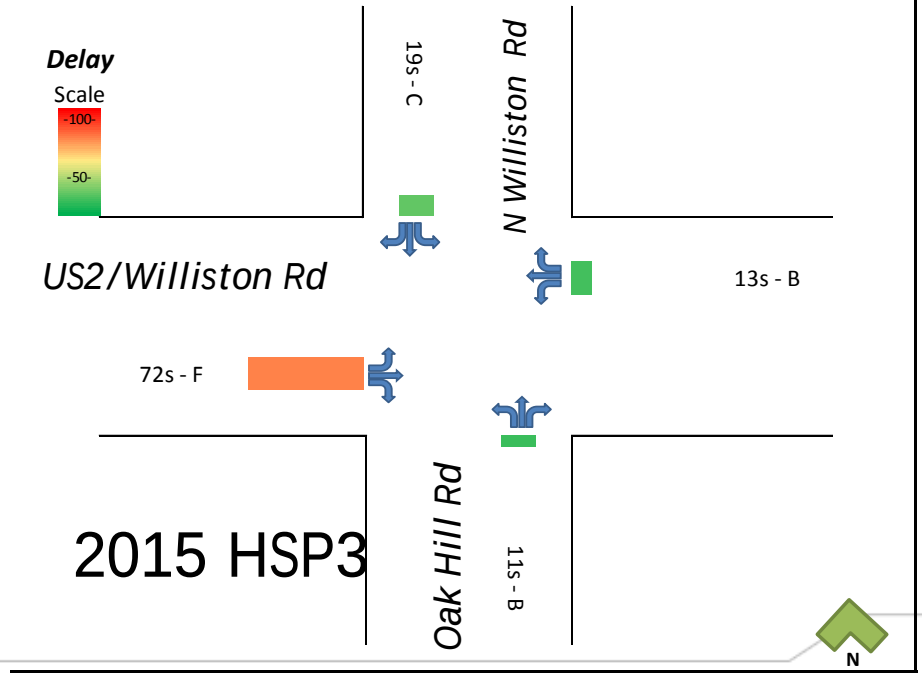


US2/North Williston/Oak Hill Rd

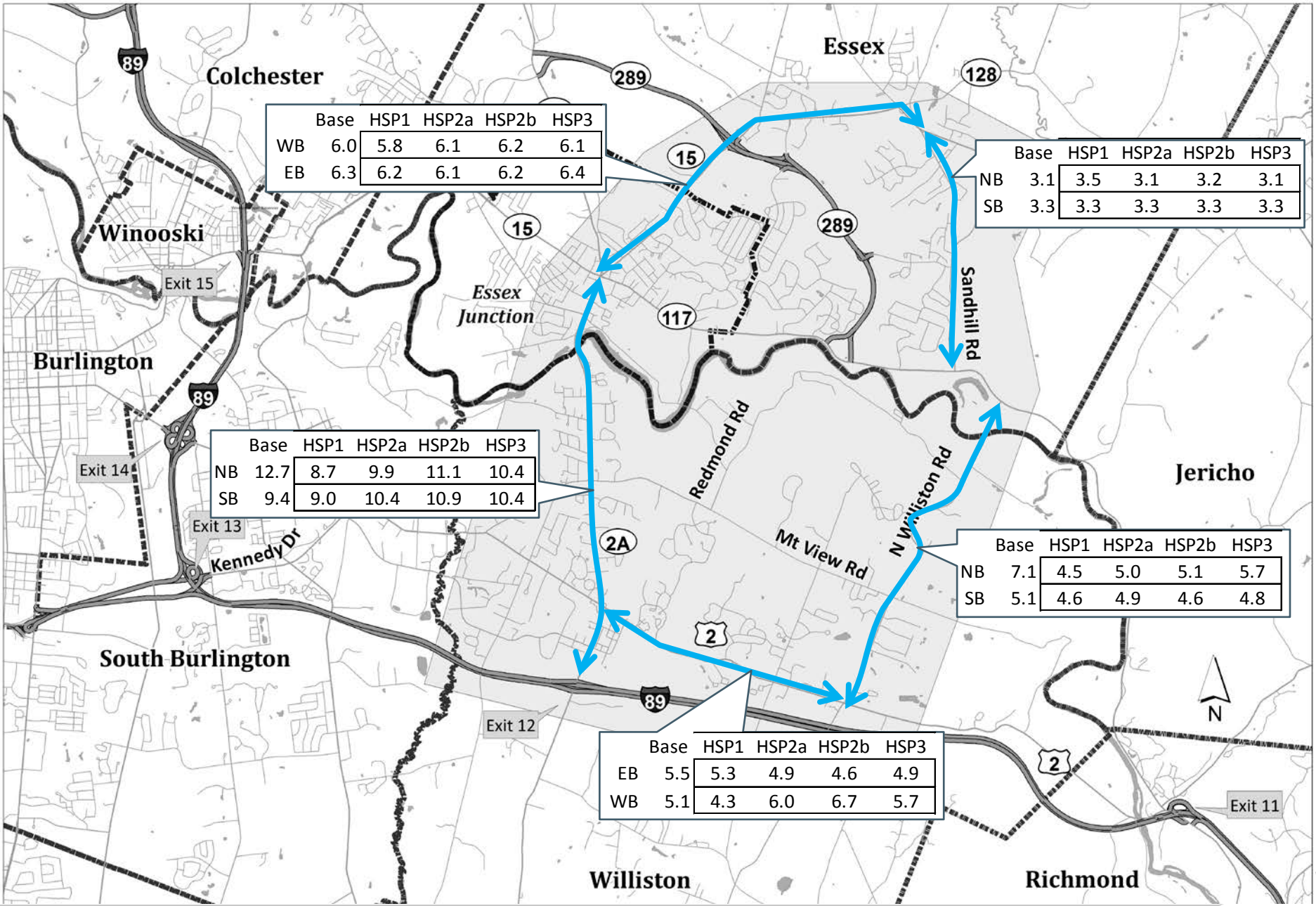








CORRIDOR TRAVEL TIMES COMPARED (in minutes)



	Base	HSP1	HSP2a	HSP2b	HSP3
WB	6.0	5.8	6.1	6.2	6.1
EB	6.3	6.2	6.1	6.2	6.4

	Base	HSP1	HSP2a	HSP2b	HSP3
NB	3.1	3.5	3.1	3.2	3.1
SB	3.3	3.3	3.3	3.3	3.3

	Base	HSP1	HSP2a	HSP2b	HSP3
NB	12.7	8.7	9.9	11.1	10.4
SB	9.4	9.0	10.4	10.9	10.4

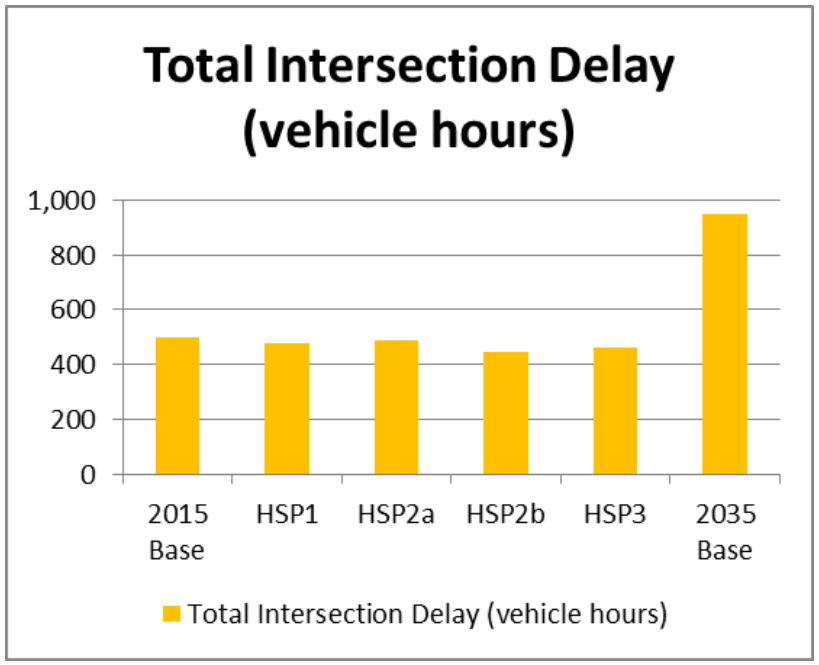
	Base	HSP1	HSP2a	HSP2b	HSP3
NB	7.1	4.5	5.0	5.1	5.7
SB	5.1	4.6	4.9	4.6	4.8

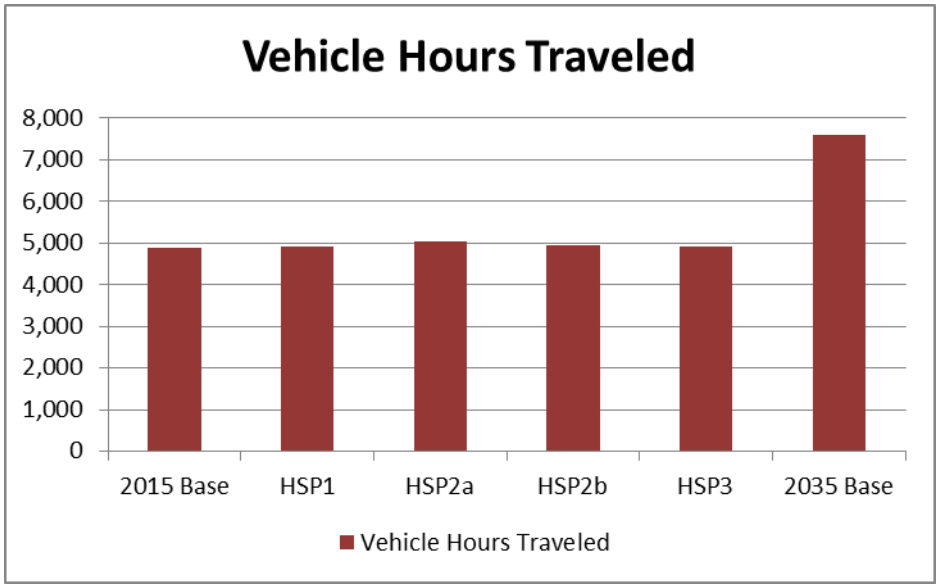
	Base	HSP1	HSP2a	HSP2b	HSP3
EB	5.5	5.3	4.9	4.6	4.9
WB	5.1	4.3	6.0	6.7	5.7

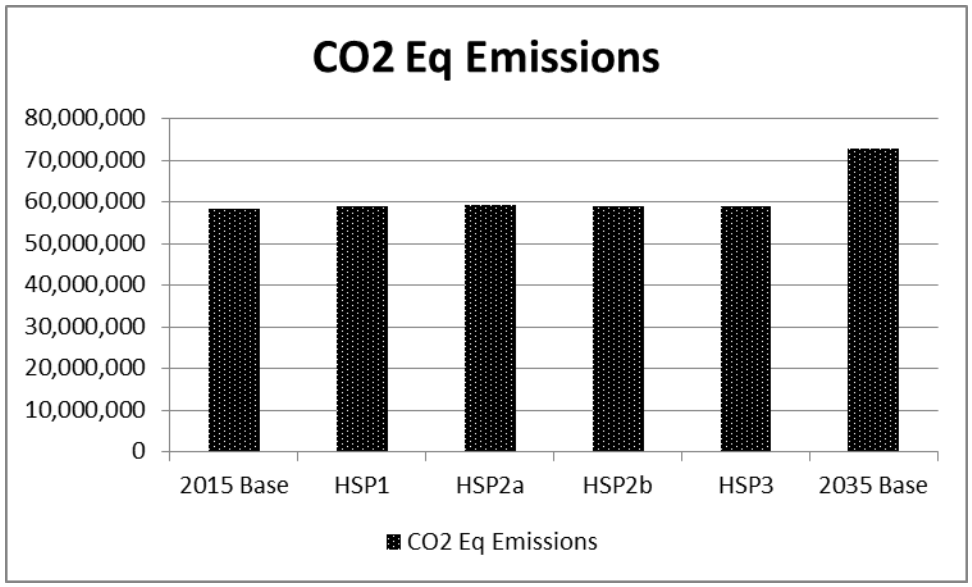
Review of Estimated Costs

- Hybrid Strategy Package 1: $49-73 million
- Hybrid Strategy Package 2a: $24-39 million
- Hybrid Strategy Package 2a & 2b: $49-63 million
- Hybrid Strategy Package 3: $32-43 million
- Core Improvements: $15-20 million

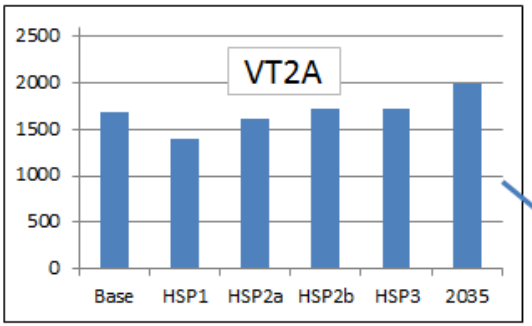
Performance Measures for 2035 Base Case

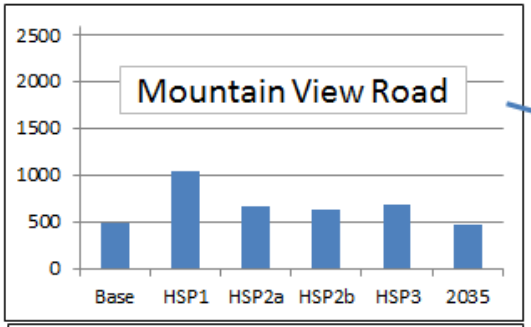


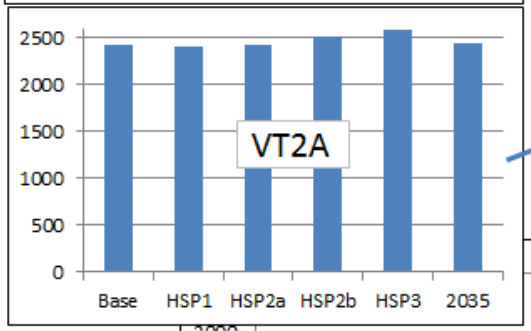


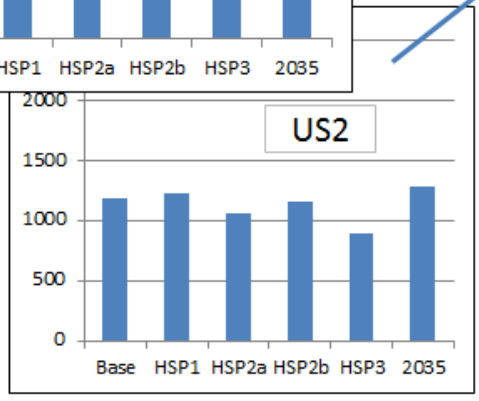


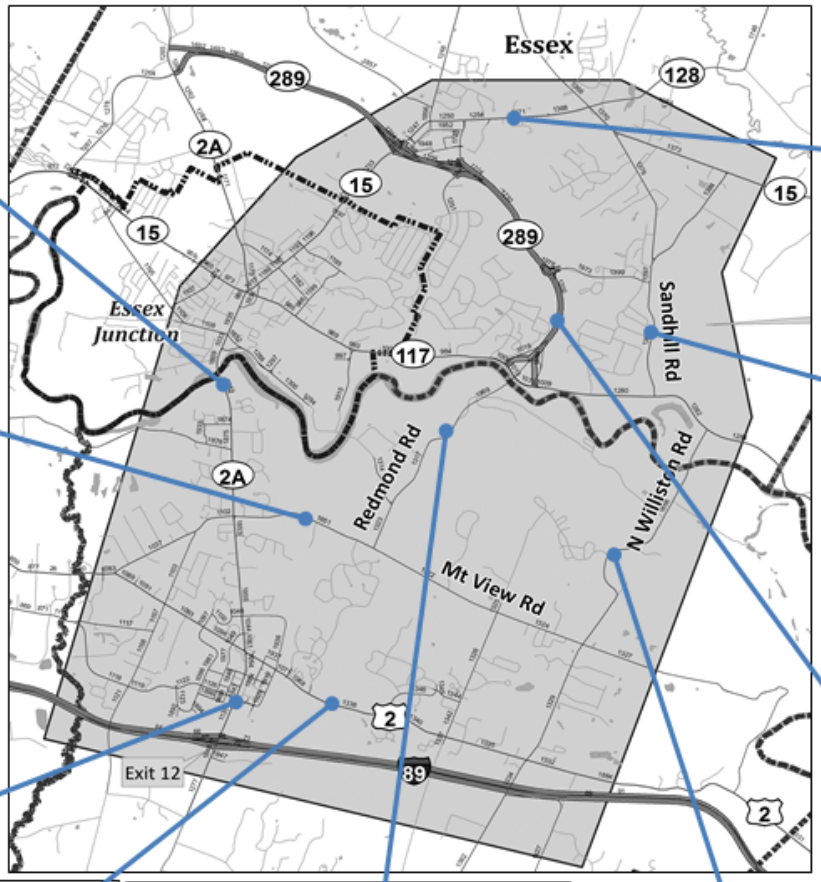
Traffic Flows: 2035 Base

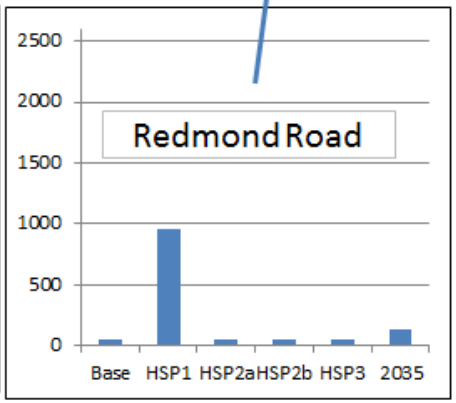


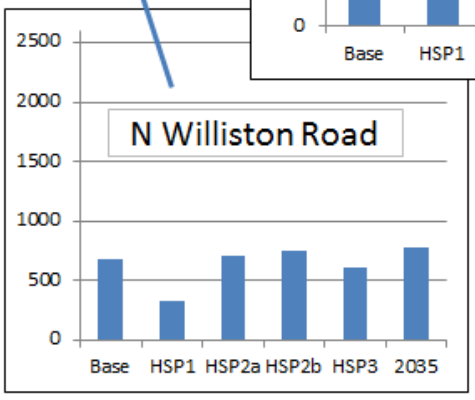


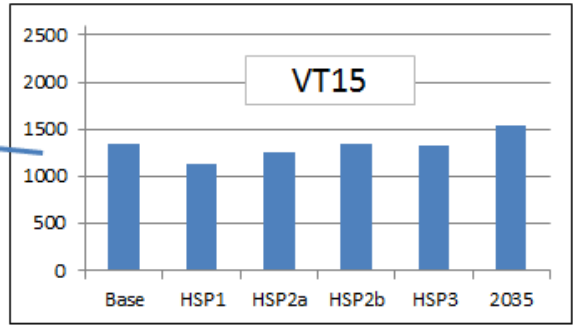


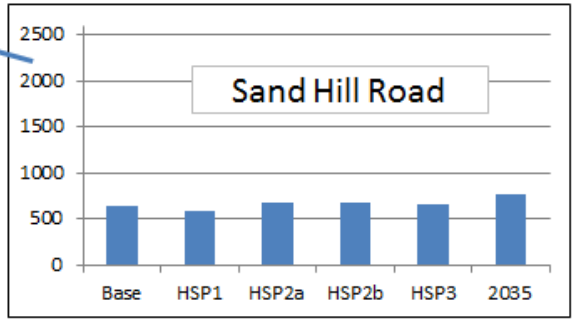


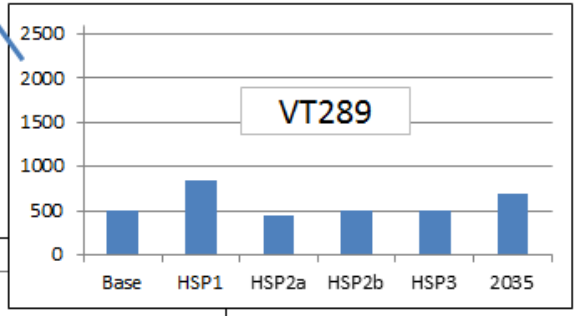






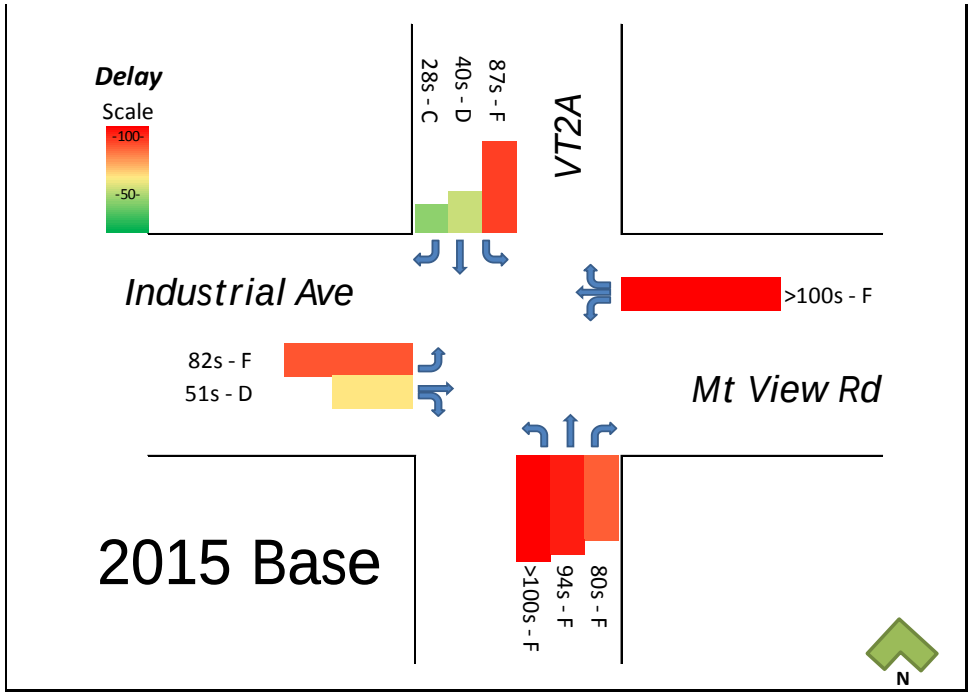


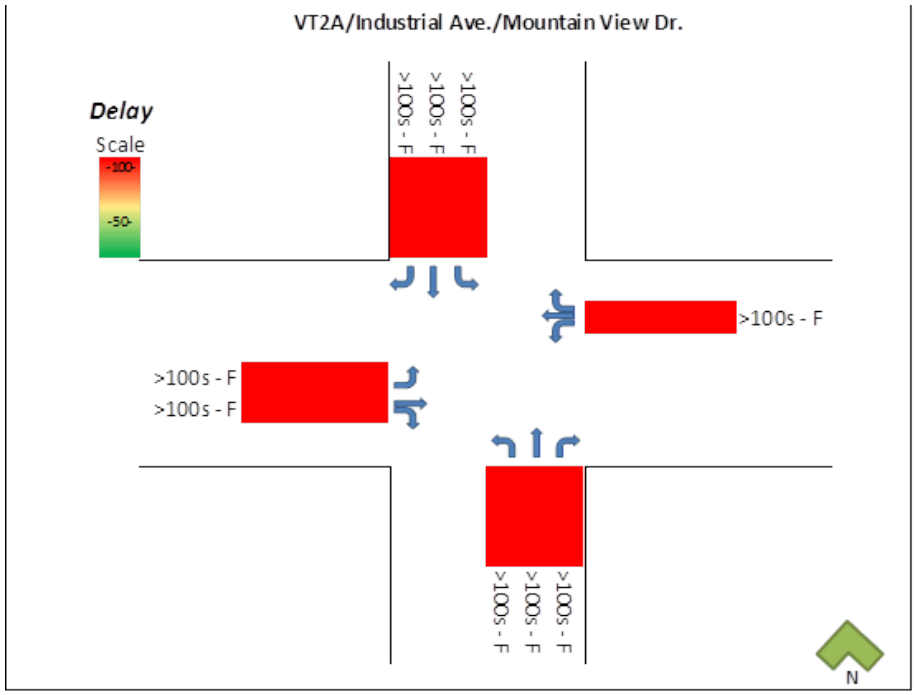




Capacity Comparisons for Base Case 2015 & 2035

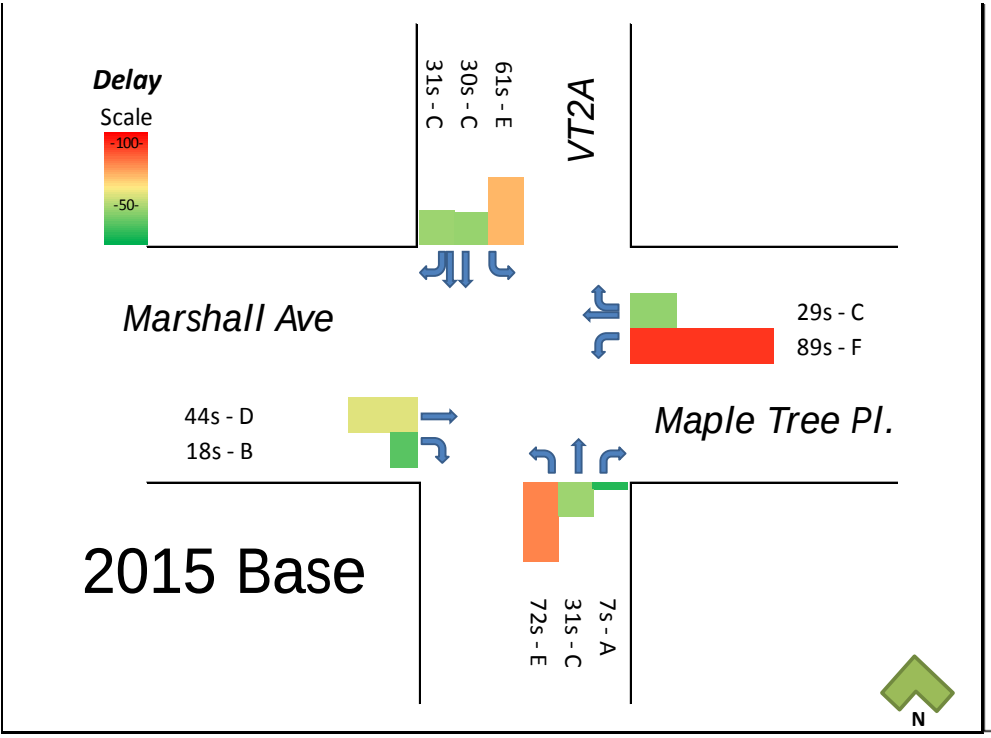
VT2A/Industrial Ave/Mountain View Rd Intersection

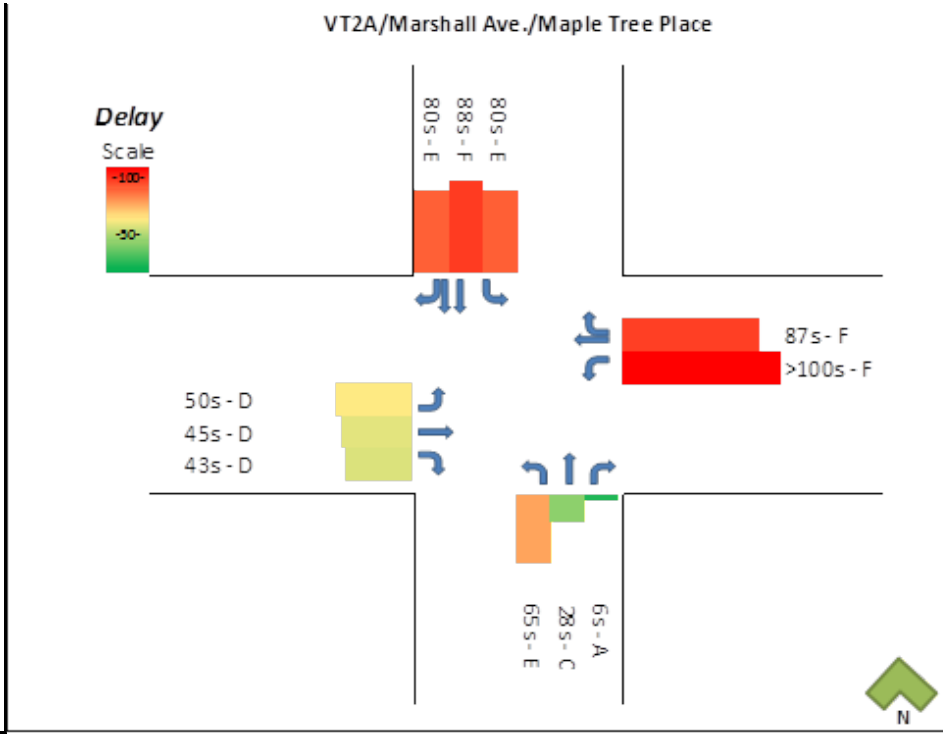




Capacity Comparisons for Base Case 2015 & 2035

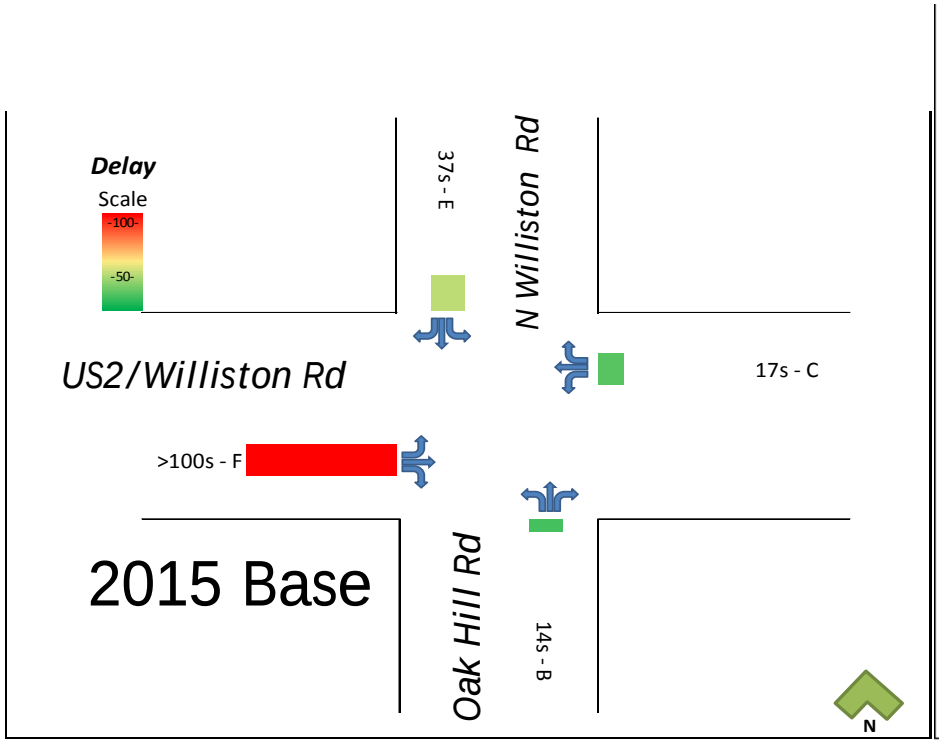
VT2A/Marshall Ave./Maple Tree Place Intersection

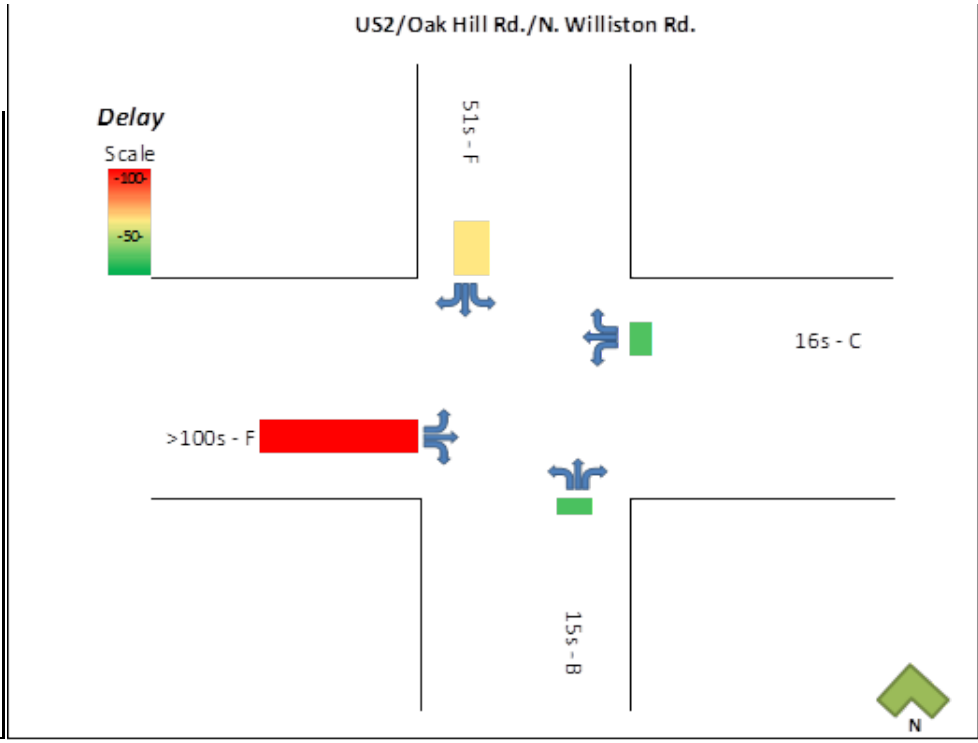




Capacity Comparisons for Base Case 2015 & 2035

US2/North Williston Road/Oak Hill Road Intersection





Next Steps

- **Quantitative Evaluation of Three Hybrid Strategy Packages for 2035**
  - Iteration of 2035 Scenarios to Provide More Definition
  - Development of Performance Measures
  - Right-of-Way Impacts
  - Natural Resources Impacts and Permitting
  - Refinement of Cost Estimates and Timeline
- **Future Meetings**
  - Two Selectboard Presentations (January 9, 2013)
  - Public Meeting #2 (February 2013)
- **Development of Network Implementation Plan**
  - Development of the preferred strategy package which will include a comprehensive list of multimodal recommendations that support the Goals and Objectives