PA Route 352 and King Road

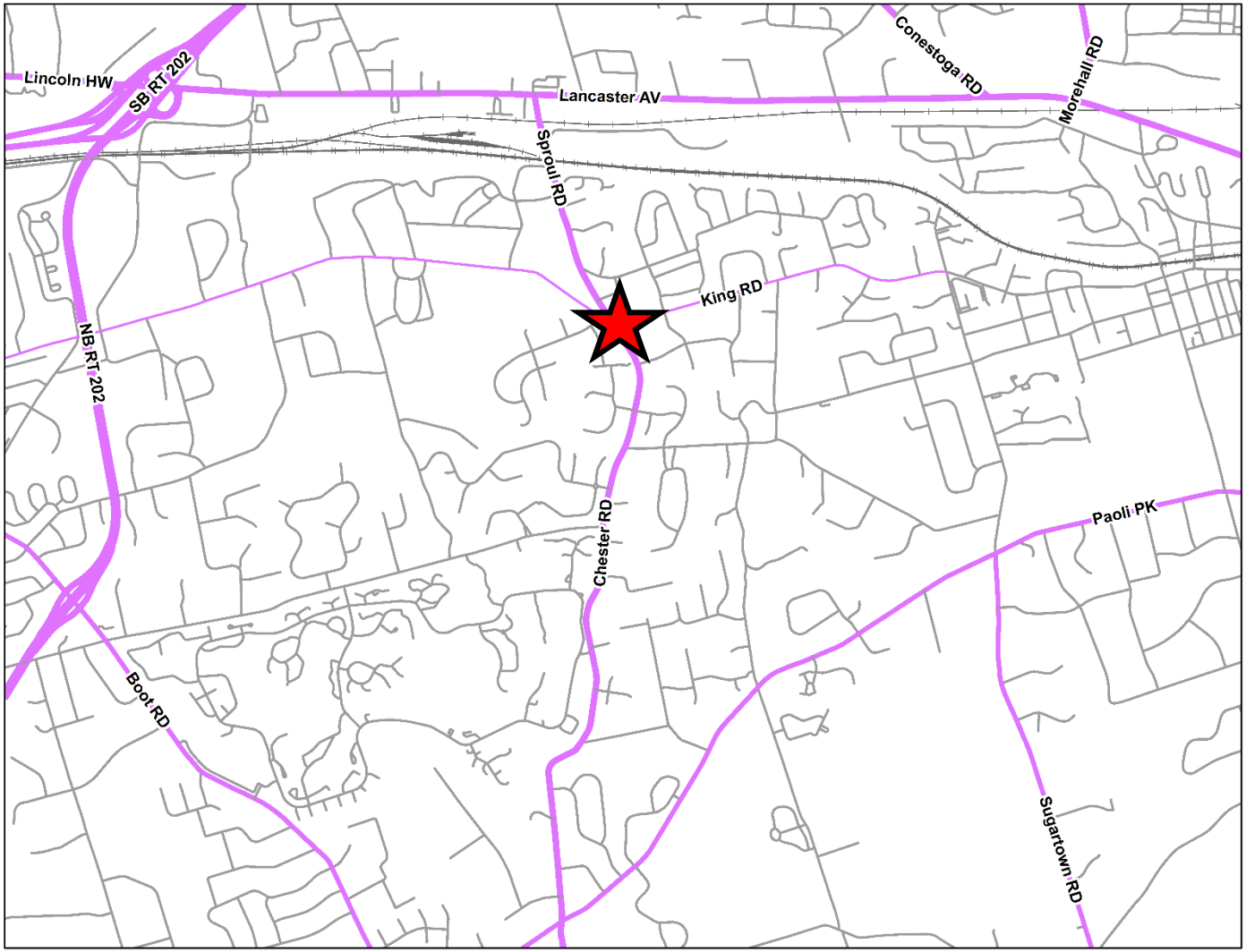
Transportation Improvements Informational Meeting

June 5, 2019

Meeting Purpose

- Summarize current intersection conditions
- Present improvement options
- Discuss next steps
- Gain feedback from the community

Intersection Location



PA Route 352 and King Road

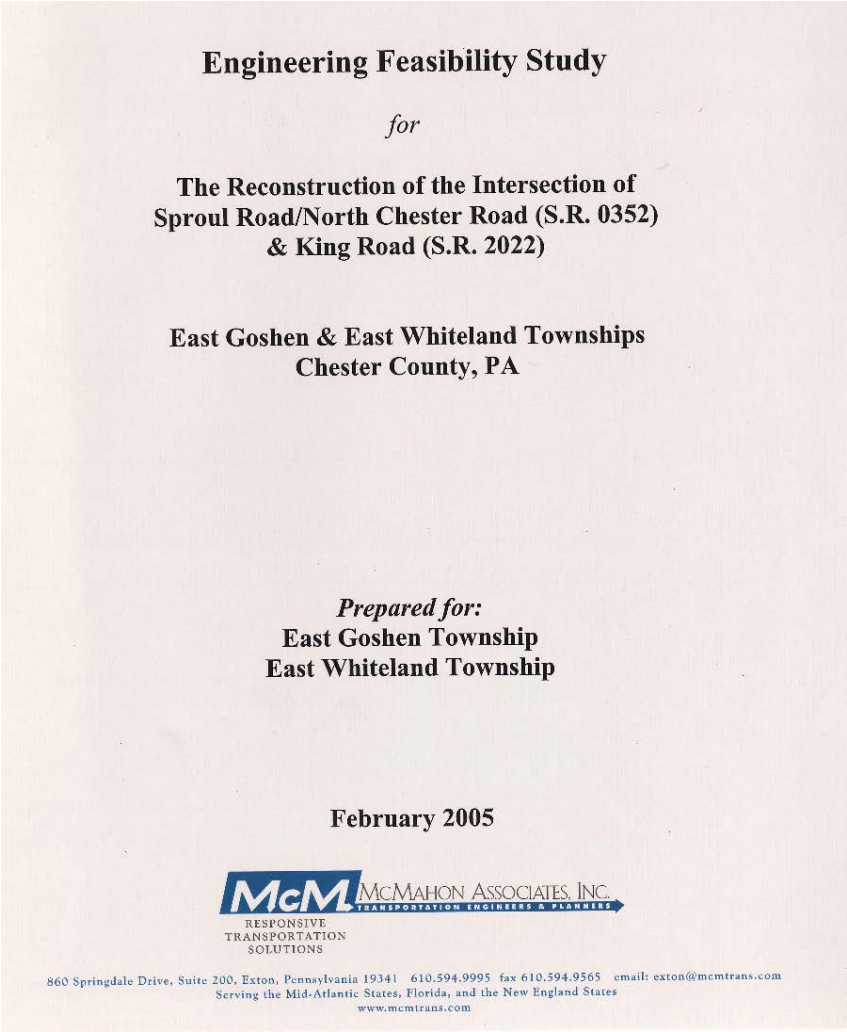
2019 Daily Traffic Volumes

vehicles/day

Source:
PennDOT

Project Background

- Studied by both Townships in 2004 and 2005
- Evaluated improvements to improve intersection layout and add left-turn lanes
- Improvements included on the Chester County Transportation Improvement Inventory
- Project has not moved forward due to funding



Engineering Feasibility Study

for

The Reconstruction of the Intersection of Sproul Road/North Chester Road (S.R. 0352) & King Road (S.R. 2022)

East Goshen & East Whiteland Townships
Chester County, PA

Prepared for:
East Goshen Township
East Whiteland Township

February 2005

McMahon Associates, Inc.
Transportation Engineers & Planners
Responsive Transportation Solutions

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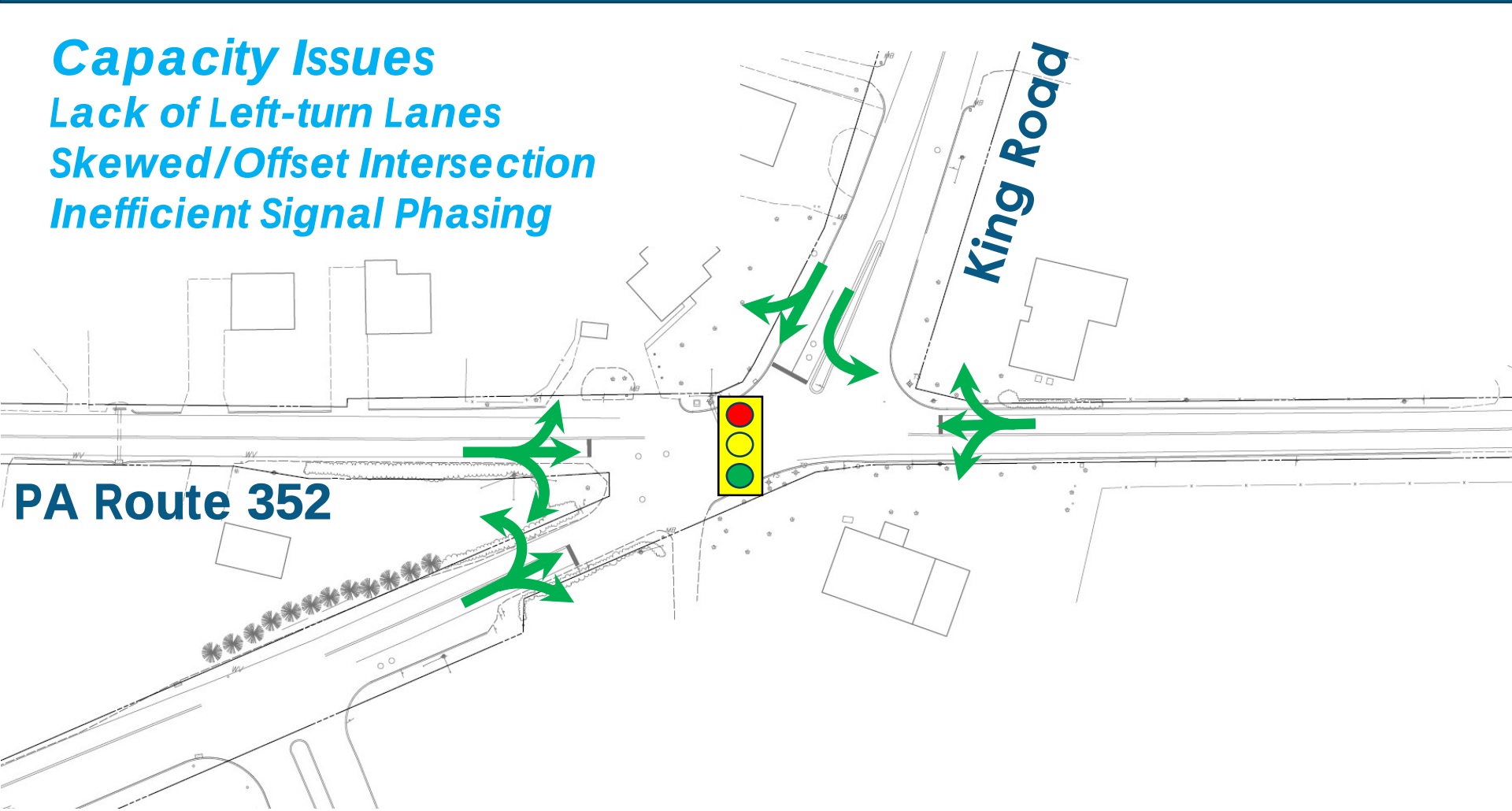
Progress To Date

- Evaluated improvement options to improve traffic conditions
- Developed conceptual improvement plans only
- Consultation with PennDOT
- <u>No decisions have been made</u>

Current Conditions



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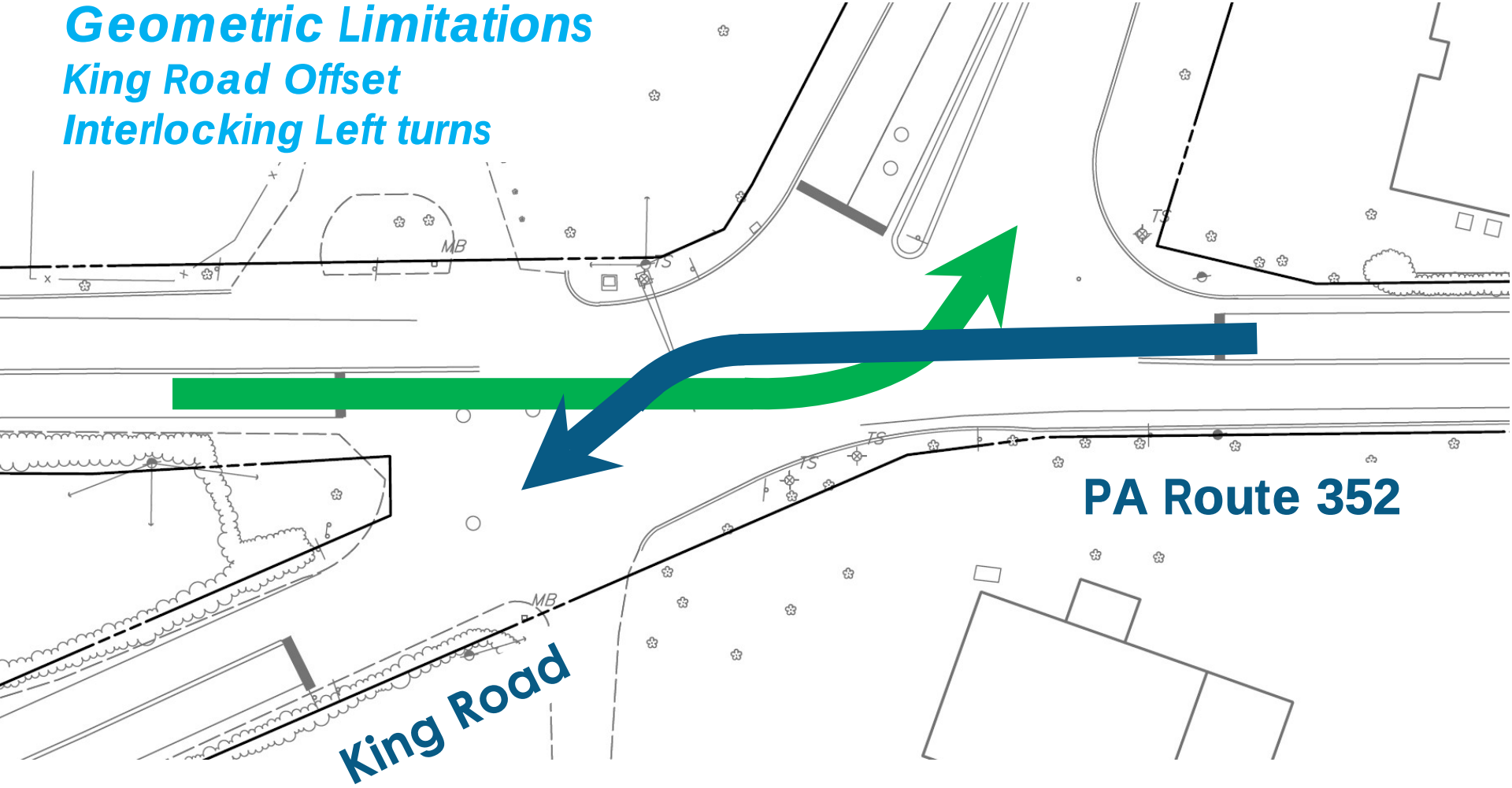
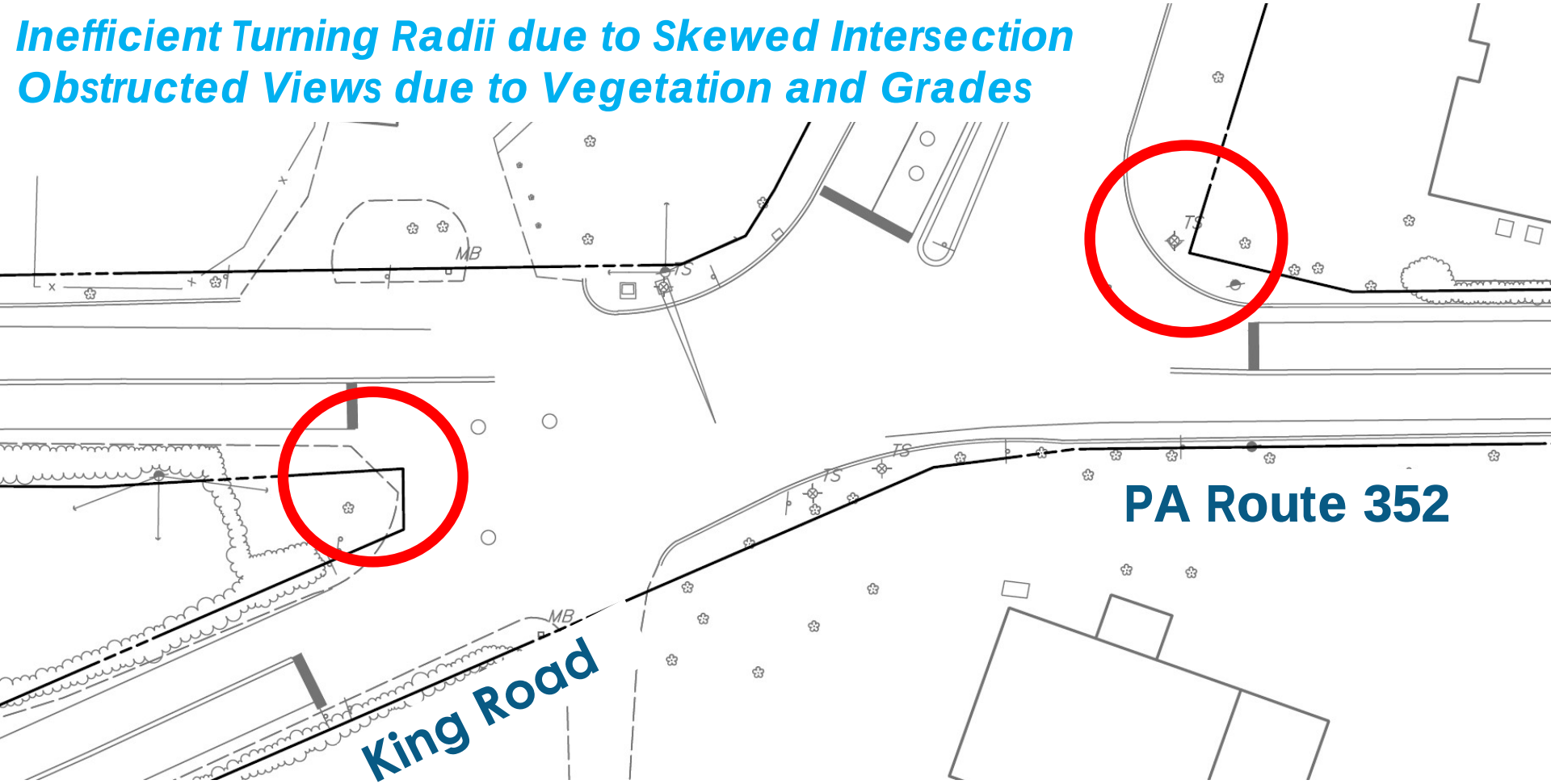


Current Conditions

Geometric Limitations

Inefficient Turning Radii due to Skewed Intersection

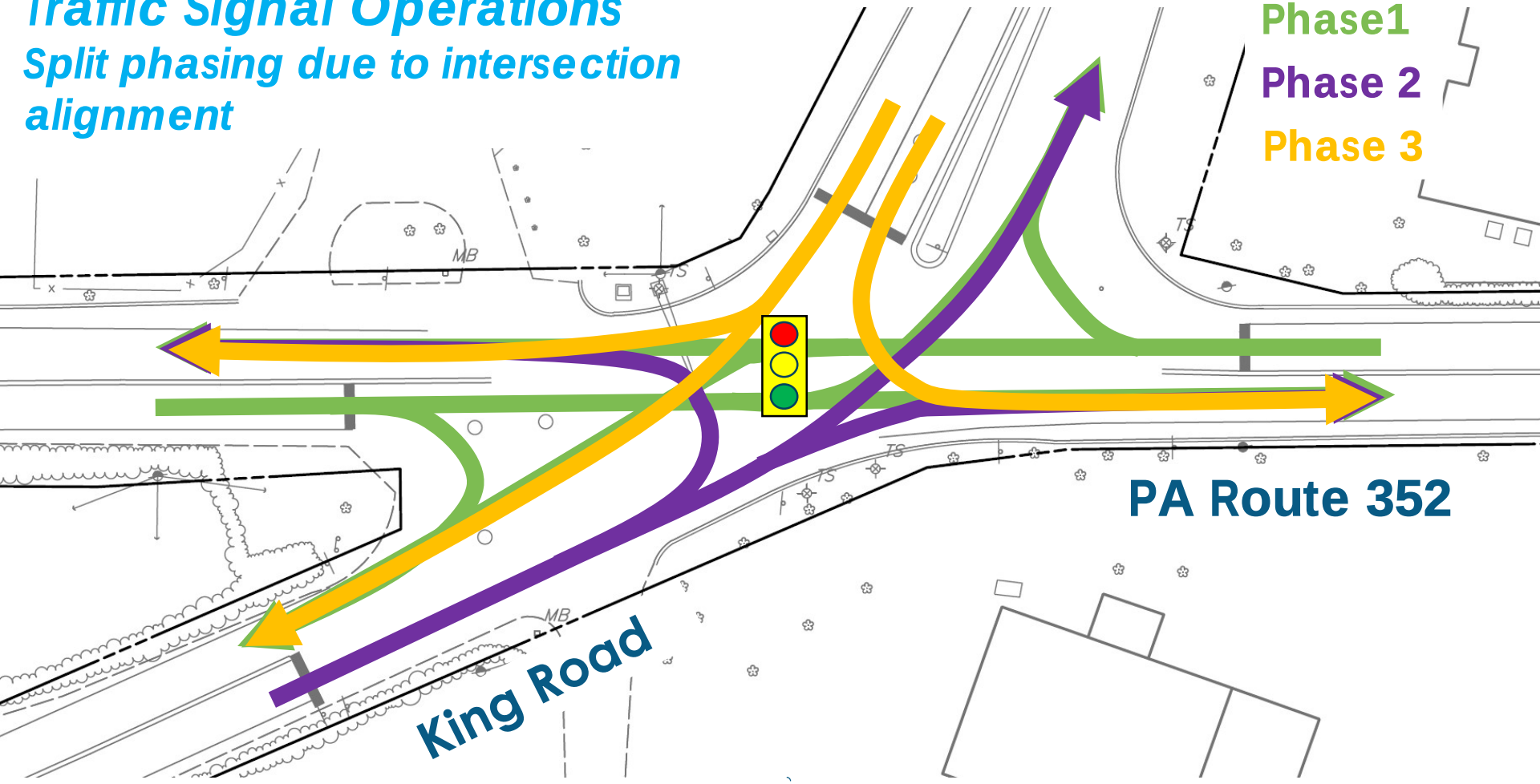
Obstructed Views due to Vegetation and Grades



Current Conditions

Traffic Signal Operations

Split phasing due to intersection alignment



Current Conditions

Current Conditions

Crash History (2013 to 2018)

- 32 Total Crashes
- Average of 5 Per Year

- Crash Type
  - 13 Rear End
  - 13 Angle
  - 5 Hit Fixed Object
  - 1 Side Swipe

- Crash Severity
  - 25 Property Damage
  - 4 Injury Crashes
  - 3 Unknown Severity

Evaluate Intersection Performance

- *Delay = Level of Service*
  - Intersection Report Card
  - Weekday AM and PM Commuter Peak Hours
  - LOS A through D = 0 to 55 seconds
    - Acceptable
  - LOS E = 55 to 80 seconds
    - Approaching Capacity Conditions
  - **LOS F = more than 80 seconds**
    - **Operations Exceed Intersection Capacity**
    - **Improvements Are Needed**

- *Queues*
  - Weekday Commuter Peak Hour Vehicle Stacking

Operations Today

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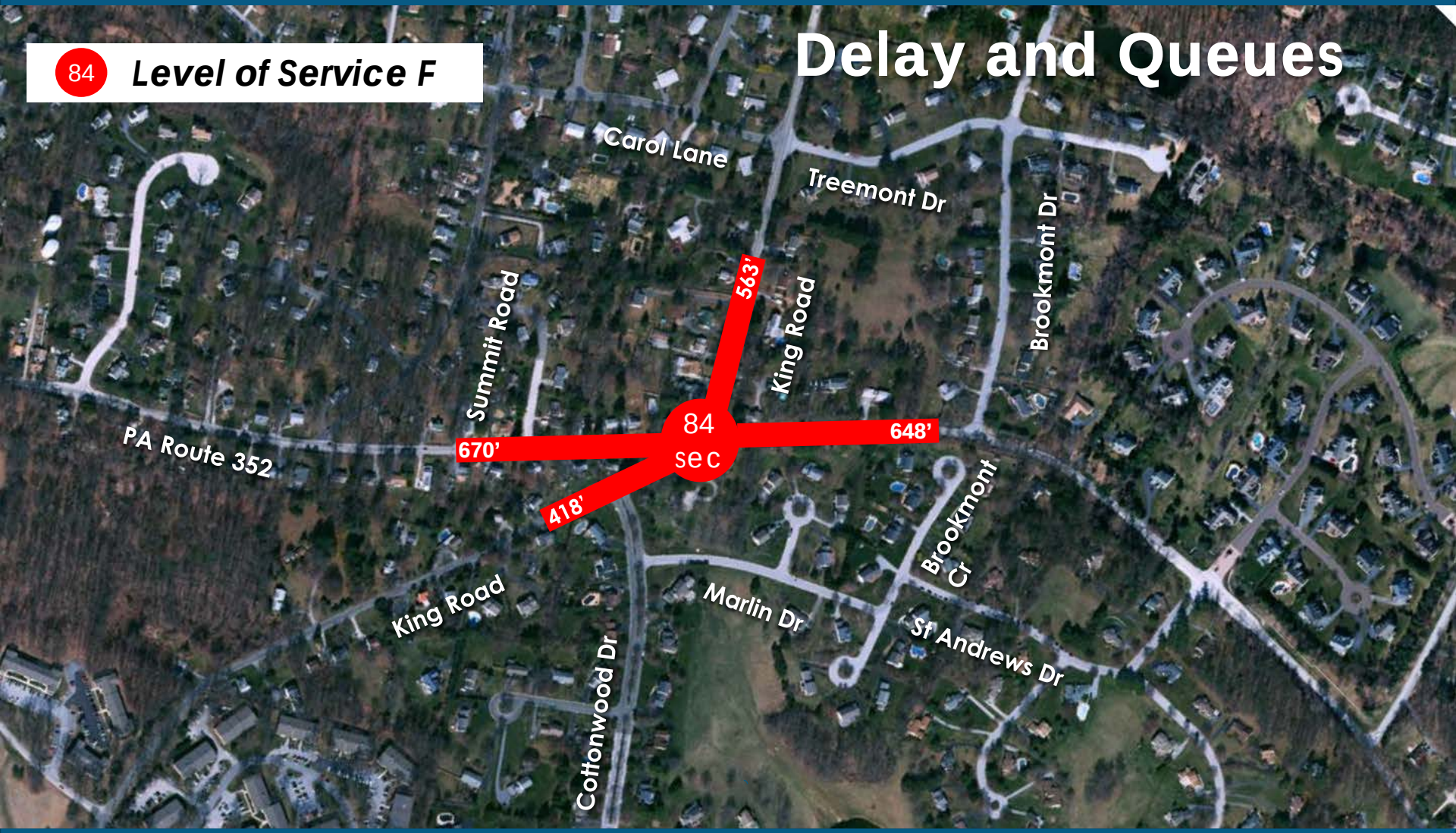
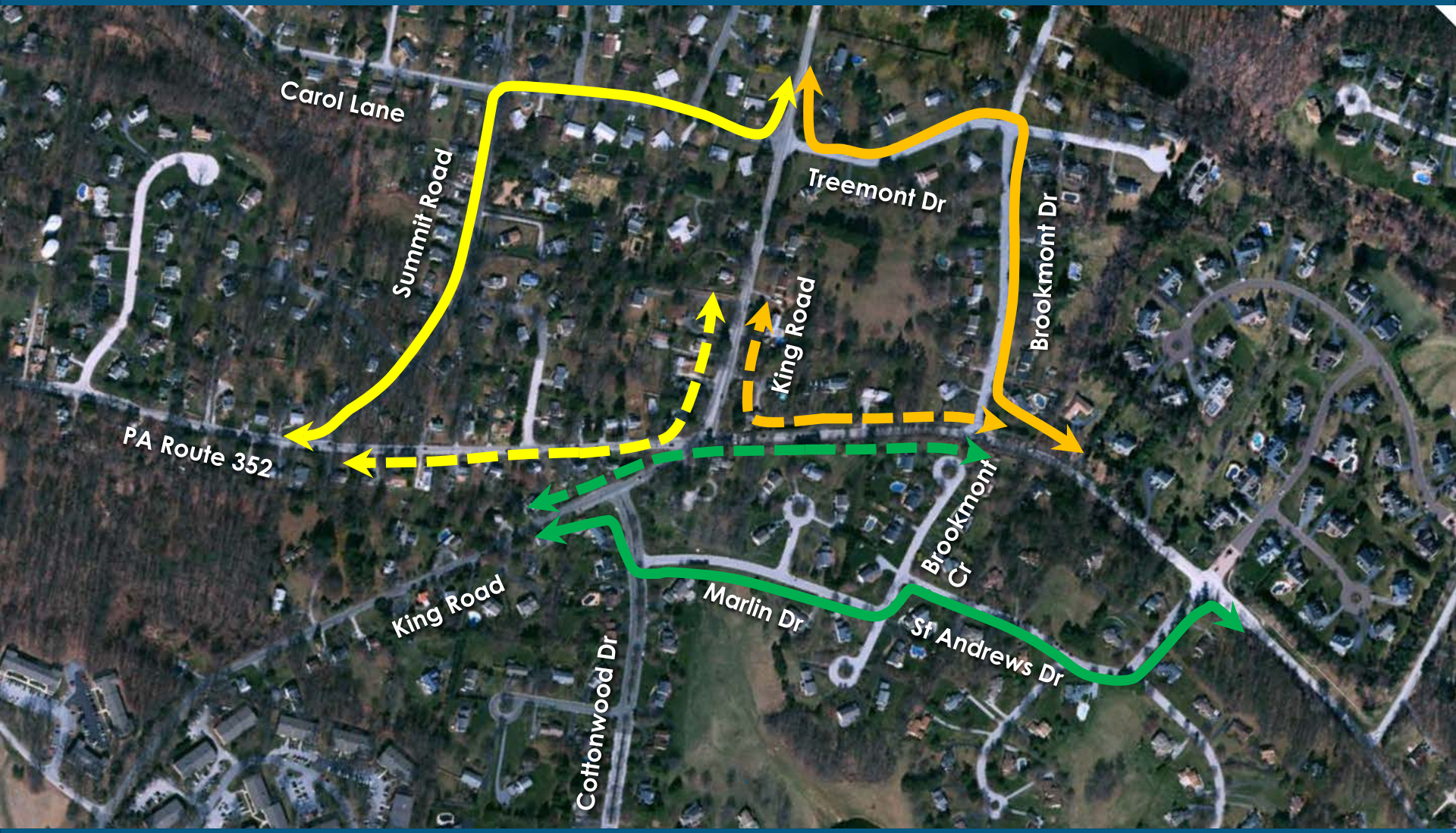
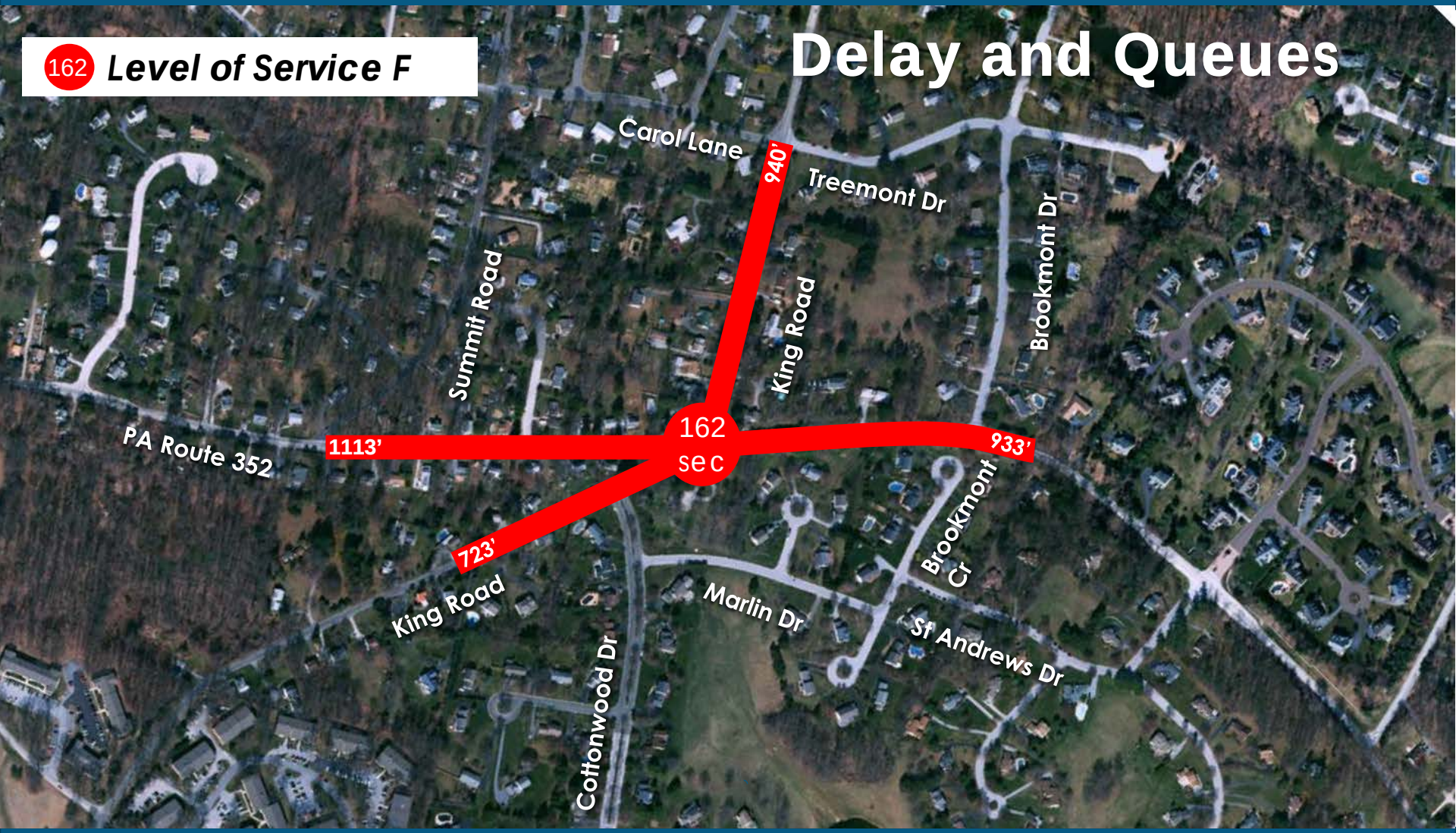


Neighborhood Cut-through



Future – If No Improvements



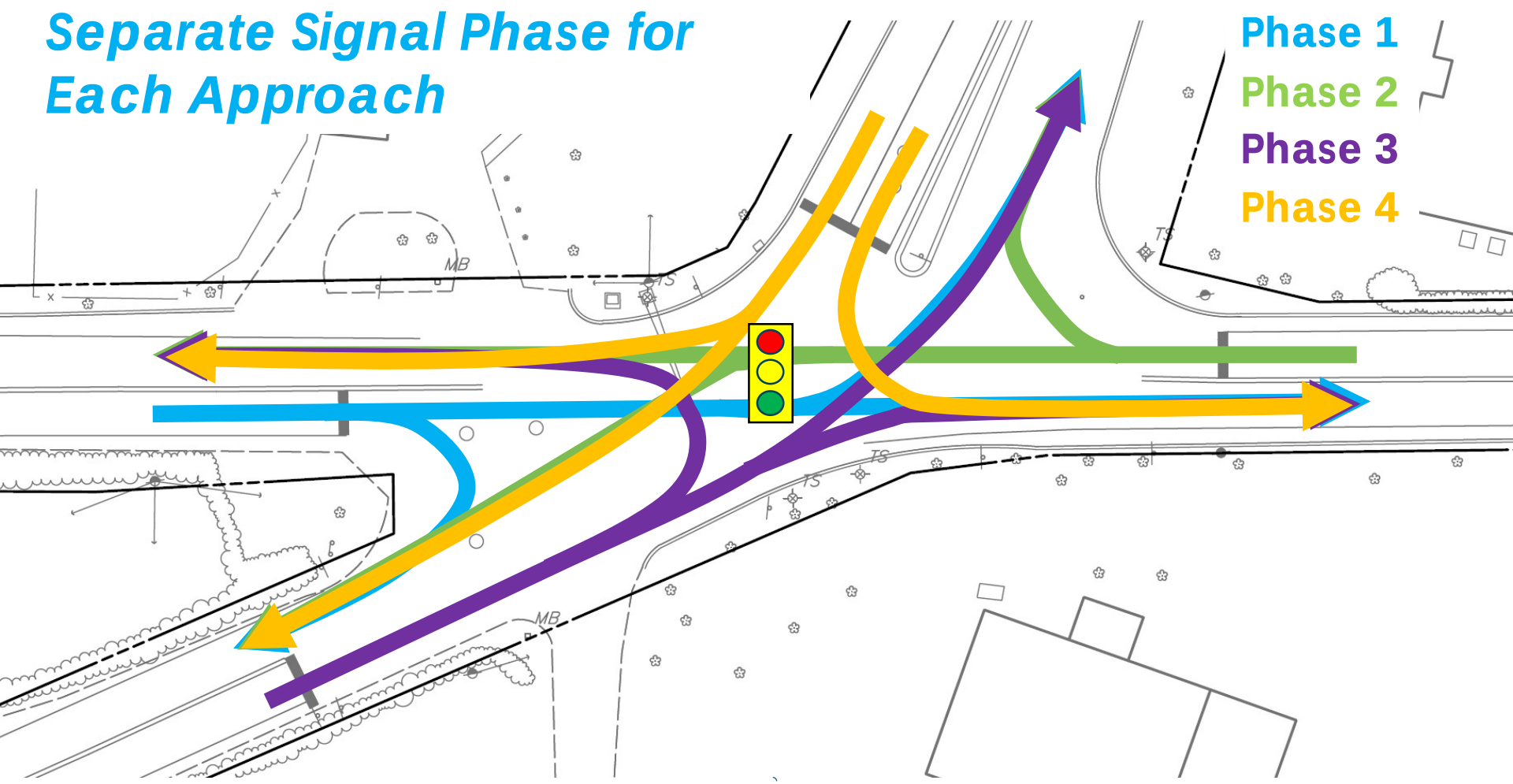
Purpose and Need

- Today
  - Intersection layout problems
  - Traffic flow problems = delays and queuing
  - Neighborhood cut-throughs

- In the future, if we do nothing…
  - Worse traffic flow = greater delays and queues

- **Conclusion = Improvements Needed**

Improvement Option 1A – Signal Phasing



Improvement Option 1A – Signal Phasing

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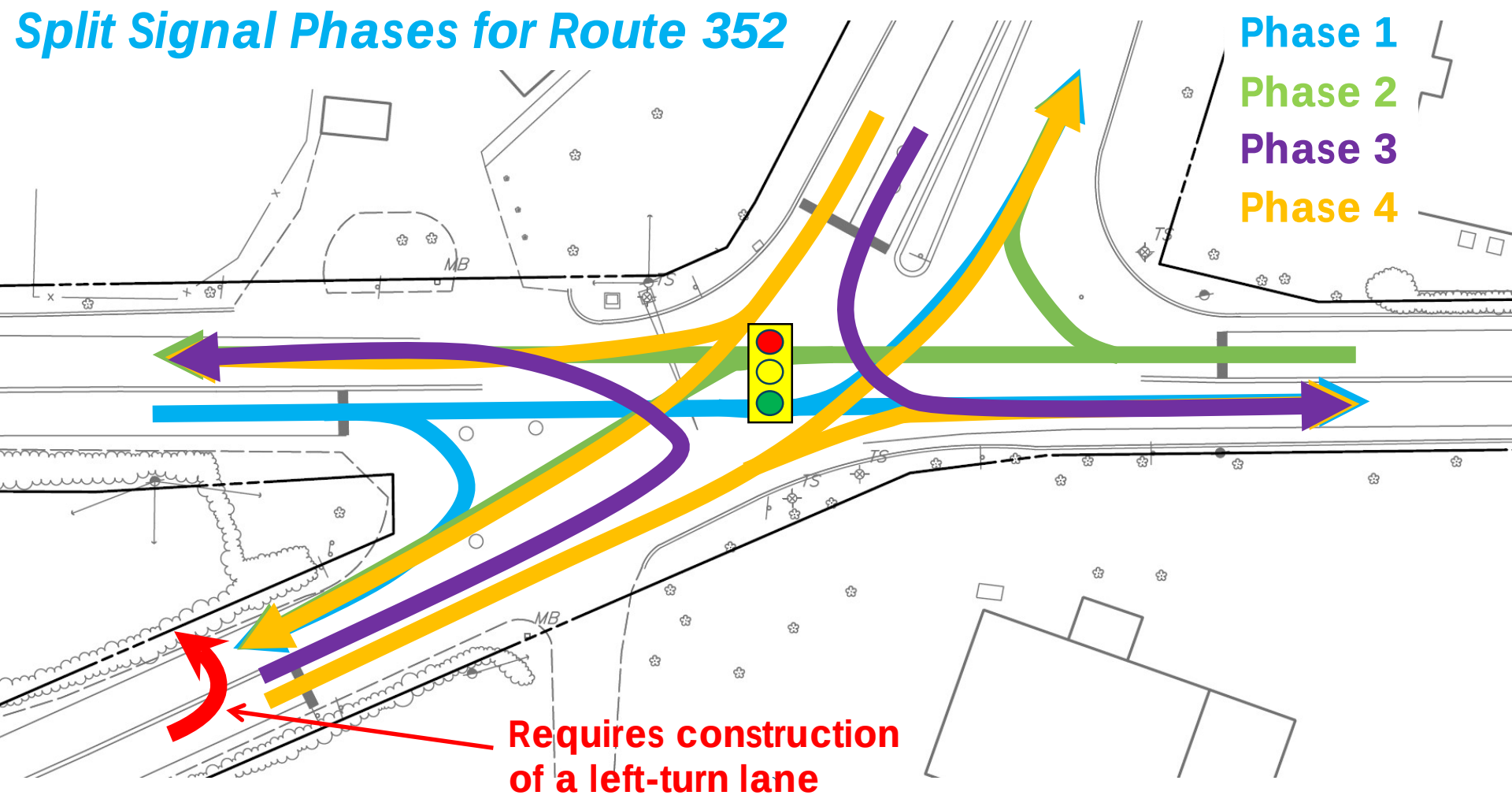
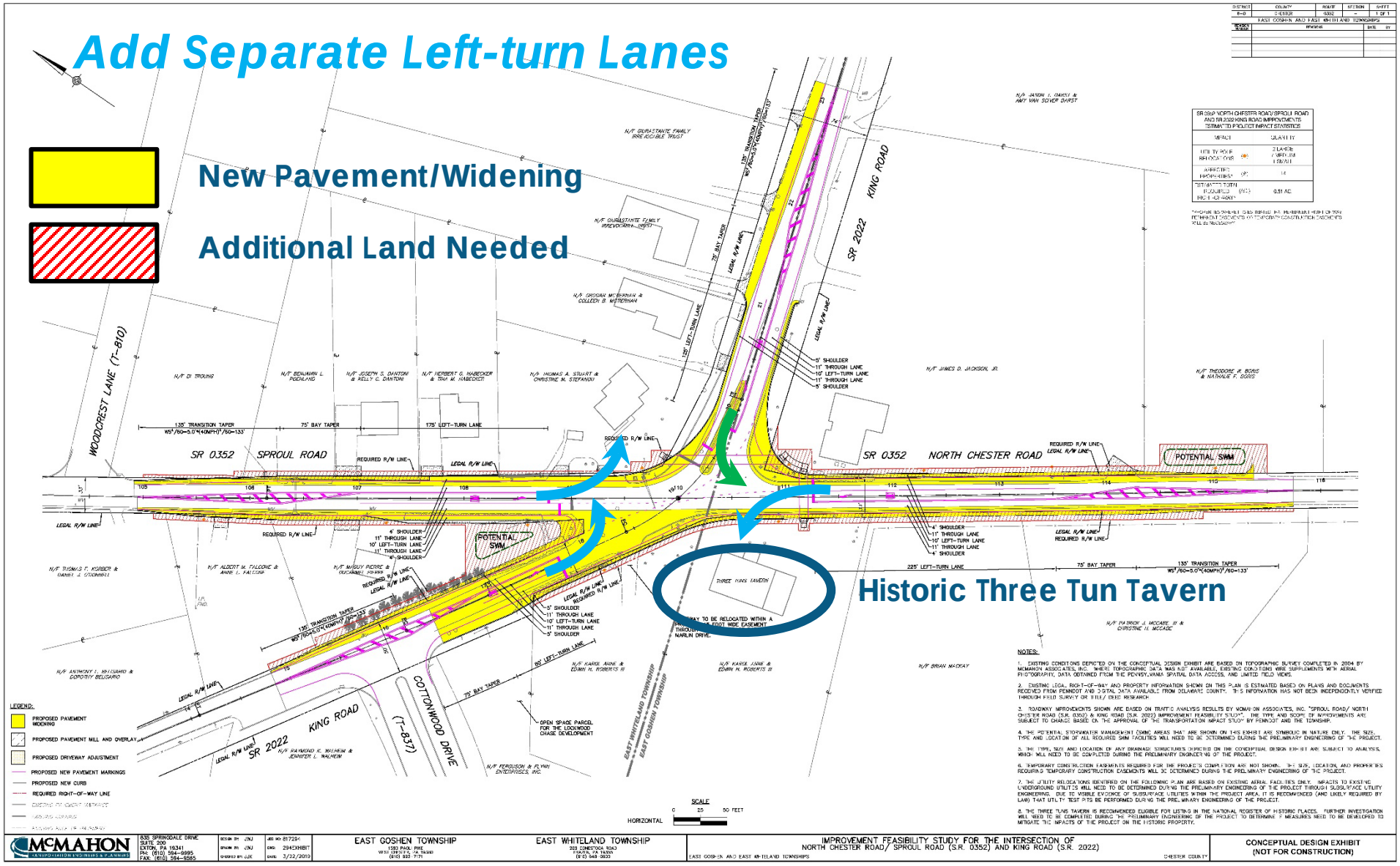
Improvement Option 1B – Signal Phasing



Improvement Option 1B – Signal Phasing

Improvement Option 2 – Left-turn Lanes



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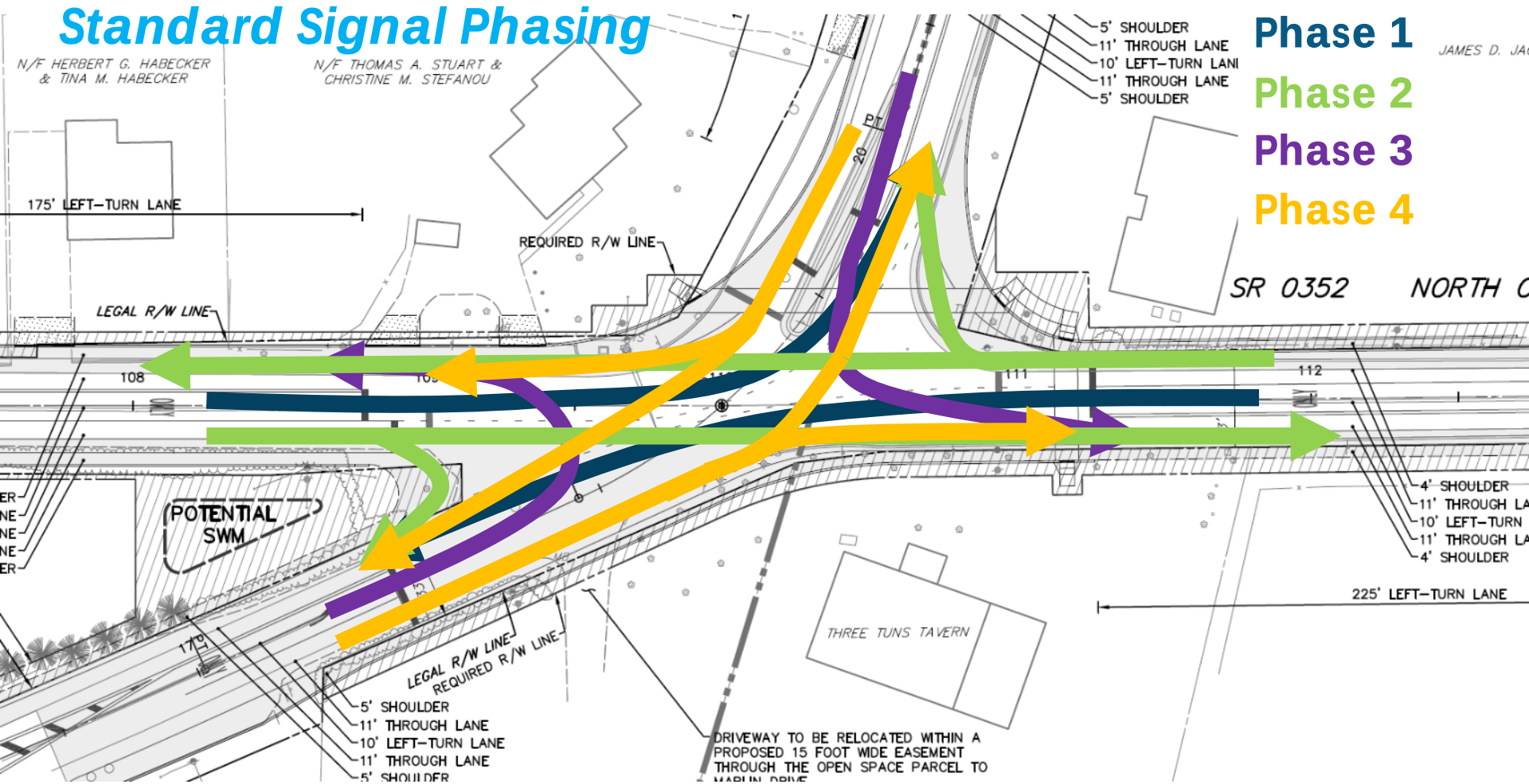
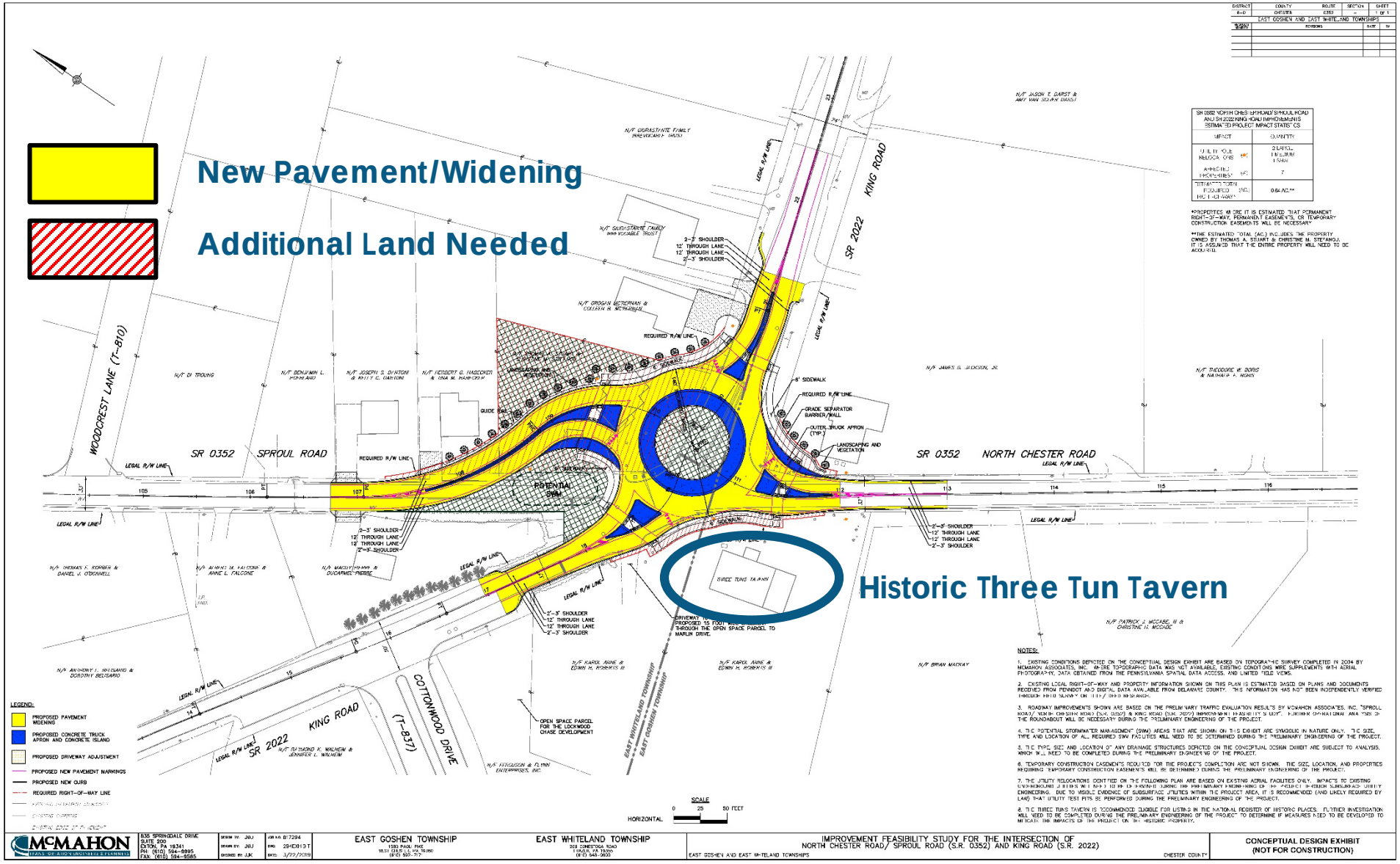


Improvement Option 2 – Left-turn Lanes

Improvement Option 3 – Roundabout



Improvement Option 3 – Roundabout

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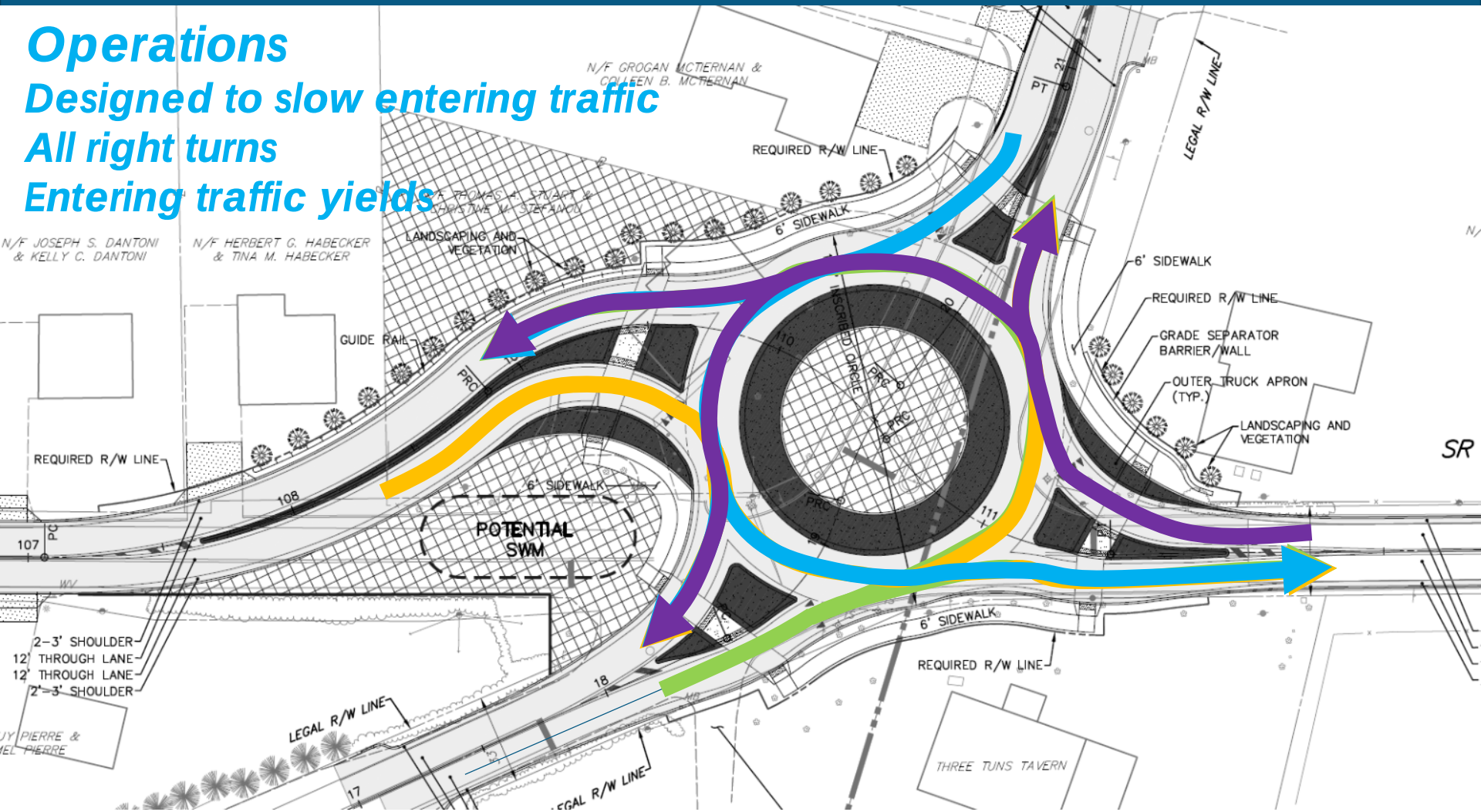
Operations

Designed to slow entering traffic

All right turns

Entering traffic yields



Improvement Option 3 – Roundabout

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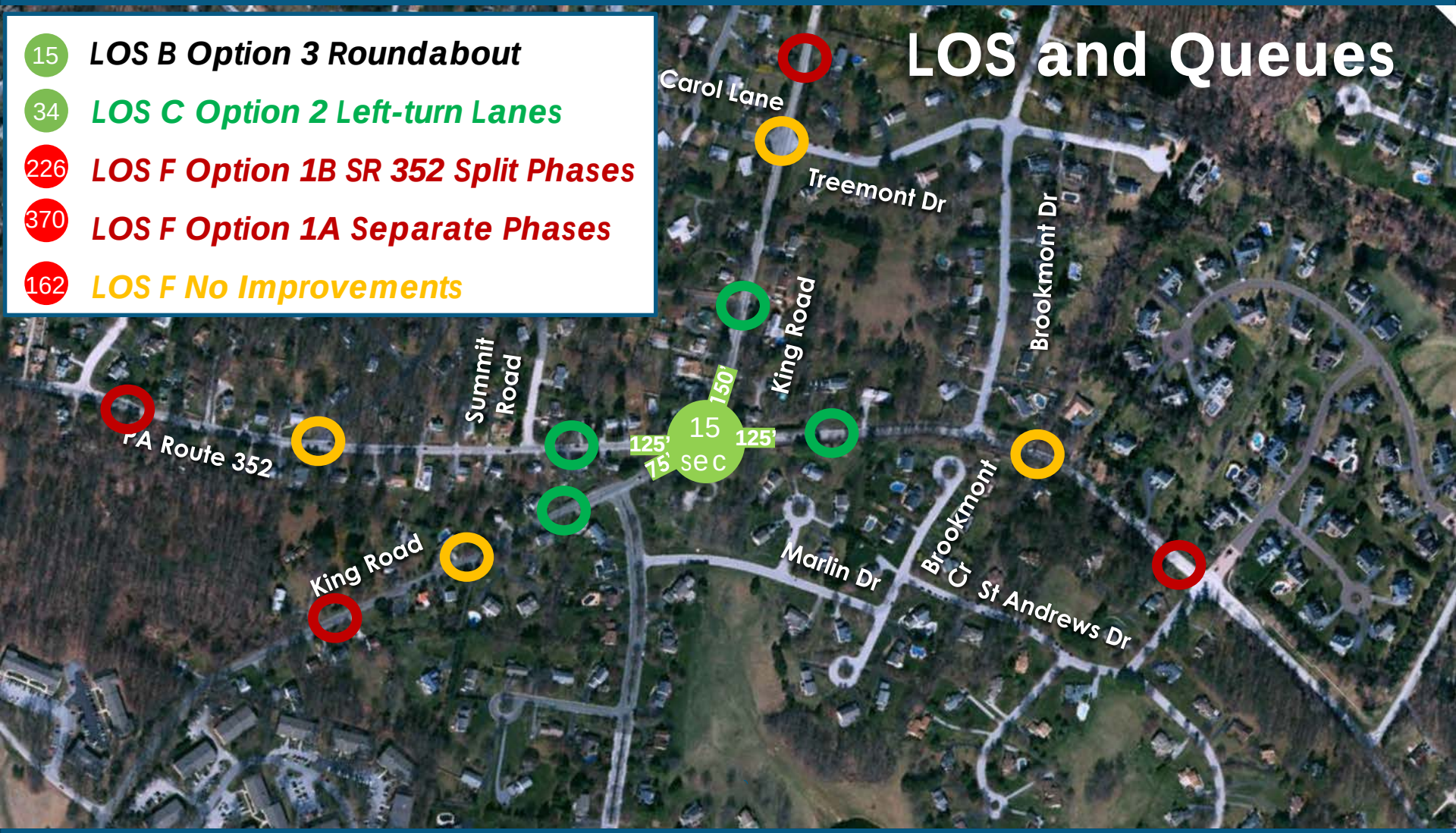

Improvement Selection Considerations

- Balance Intersection Performance with Construction Impacts
- Property/Land Impacts
- Utilities
- Costs
- Historic Structure

Intersection Performance Criteria

Category	No Improvements	Option 1A – Separate Phases	Option 2 - Left-Turn Lanes	Option 3 - Roundabout
Level-of-Service	F	F	C	B
Longest Approach Queue	1,113 feet	1,775 feet	410 feet	150 feet
Rank	3rd	4th	2nd	1st

Construction Considerations

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Category	Option 2 – Left-Turn Lanes	Option 3 - Roundabout
Properties Affected	13 Properties	7 Properties
Total Property Acquisition	0 Properties	1 Property
Land Required	0.51 Acres	0.64 Acres
Utility Pole Relocations	9 Poles	5 Poles
Estimated Cost	$2,525,503	$3,127,098

Next Steps

- Both Townships will decide whether to pursue an improvement and select a preferred solution
- If an improvement is selected, then…
  - pursue grant funding
  - detailed engineering (scope will be refined)
  - construction (at least three years from now)

Thank You

Questions?

email comments to:

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rsmith@eastgoshen.org