

Main Street & Sycamore Steet

An aerial photograph of a town intersection. In the foreground, a large, two-story brick building with a flat roof and large windows is visible. To its left is a parking lot with several cars. In the background, there are several baseball fields with green grass and brown dirt bases. The trees are mostly bare, suggesting a late autumn or winter setting. The sky is overcast.

Zionsville, Indiana

Roadway Network Analysis

10/6/2025

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Current Operational Constraints



Scope of Work

- Estimate year 2025 and year 2035 traffic volumes based on traffic volume counts from the Town of Zionsville Road Impact Fee and a growth rate of 1.5% per year at the following study intersections:
 - Sycamore Street & 1st Street
 - Sycamore Street & Main Street
- Balance and redistribute the traffic volumes for each scenario studied.
- Prepare a capacity analysis, level of service analysis, and queue length analysis for each of the scenarios studied.
- Prepare conclusions and recommendations based on the results of the study.



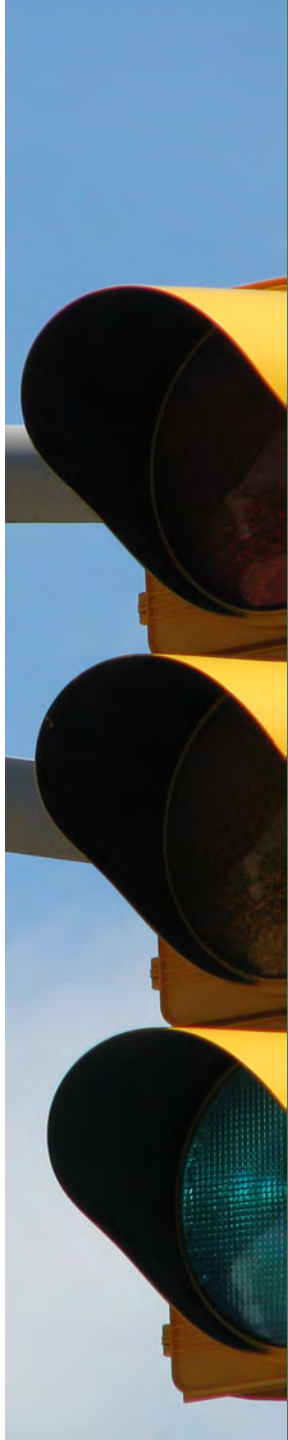
Alternatives Studied

- **Scenario 1: No Build – Year 2025 Traffic Volumes**
- **Scenario 2: No Build – Year 2035 Traffic Volumes**
- **Scenario 3: Coordinated Signal System – Year 2035 Traffic Volumes**
 - Added traffic signal at the intersection of Sycamore Street & 1st Street
- **Scenario 4: Moved Signal/Realignment – Year 2035 Traffic Volumes**
 - Move the existing signal to the intersection of Sycamore Street & 1st Street
 - Realign Main Street south of Sycamore Street to align with 1st Street
- **Scenario 5: “Peanut” Roundabout Two-Way West – Year 2035 Traffic Volumes**
 - Reconstruct the intersections as a “peanut” roundabout
 - Realign Main Street south of Sycamore Street to align with 1st Street
- **Scenario 6: “Peanut” Roundabout Two-Way East – Year 2035 Traffic Volumes**
 - Reconstruct the intersections as a “peanut” roundabout
- **Scenario 7: “Peanut” Roundabout One-Way – Year 2035 Traffic Volumes**
 - Reconstruct the intersections as a “peanut” roundabout
 - One-way operation between Sycamore Street and Eagle Creek



Scenario 1: No Build - 2025

Area Map



Scenario 2: No Build - 2035

Area Map



Scenario 3: Coordinated Signal System

Area Map



Scenario 4: Moved Signal/Realignment

Area Map



Scenario 5: “Peanut” RAB Two-Way West

Area Map



Scenario 6: “Peanut” RAB Two-Way East

Area Map



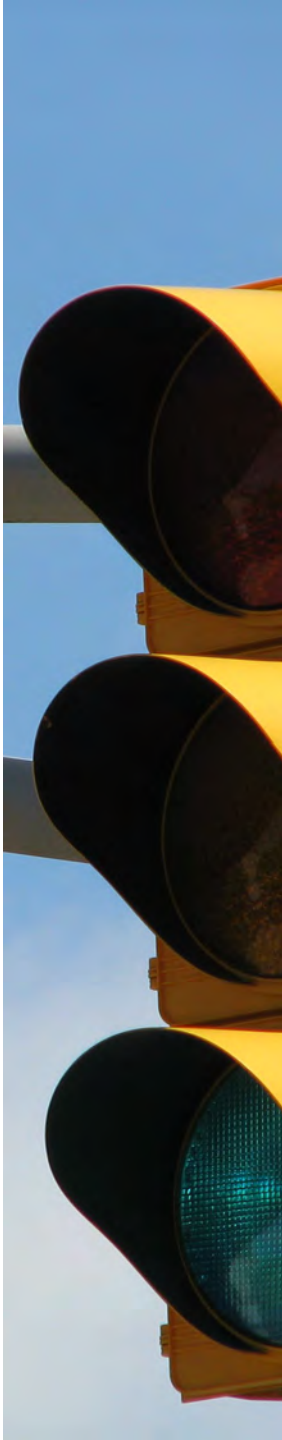
Scenario 7: “Peanut” RAB One-Way

Area Map



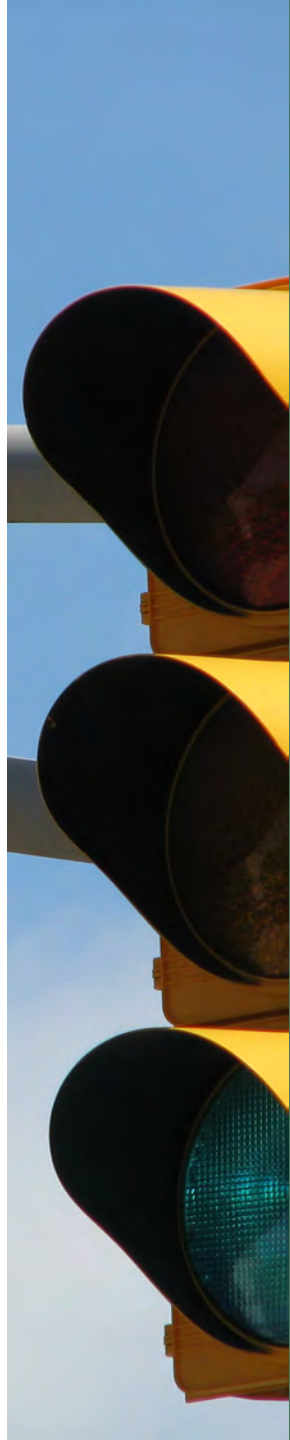
Scenario 1: No Build - 2025

Level of Service Summary



Scenario 2: No Build - 2035

Level of Service Summary



Scenario 3: Coordinated Signal System

Level of
Service
Summary



Scenario 4: Moved Signal/Realignment

Level of
Service
Summary



Scenario 5: “Peanut” RAB Two-Way West

Level of
Service
Summary



Scenario 6: “Peanut” RAB Two-Way East

Level of
Service
Summary



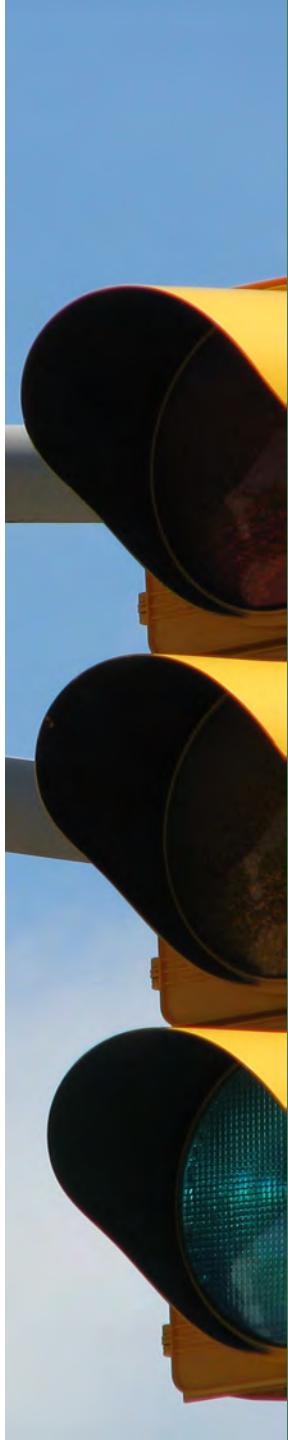
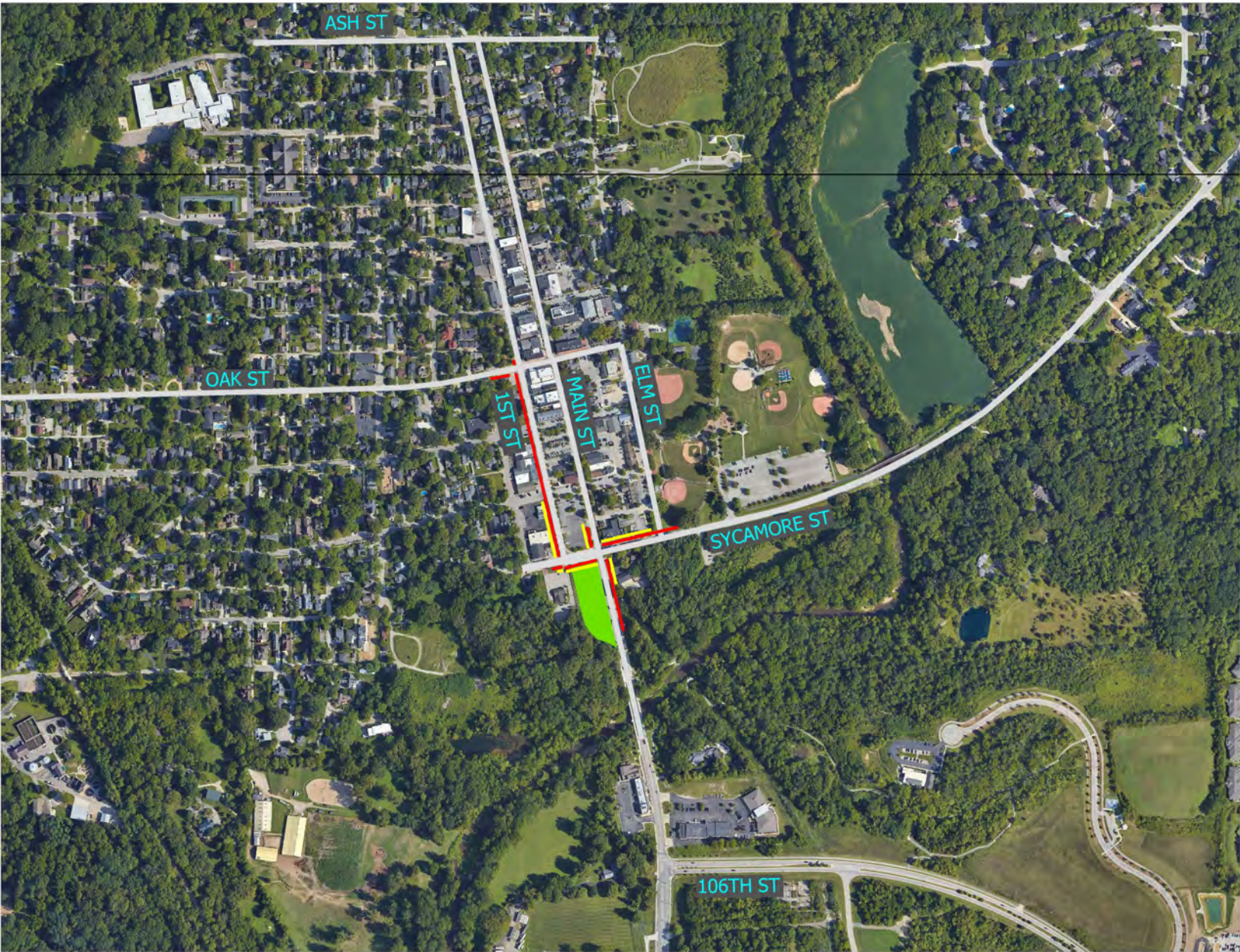
Scenario 7: “Peanut” RAB One-Way

Level of Service Summary



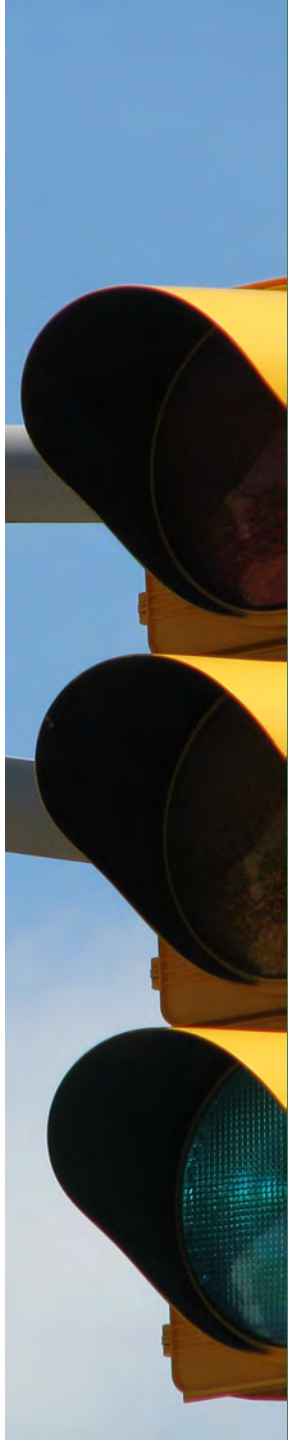
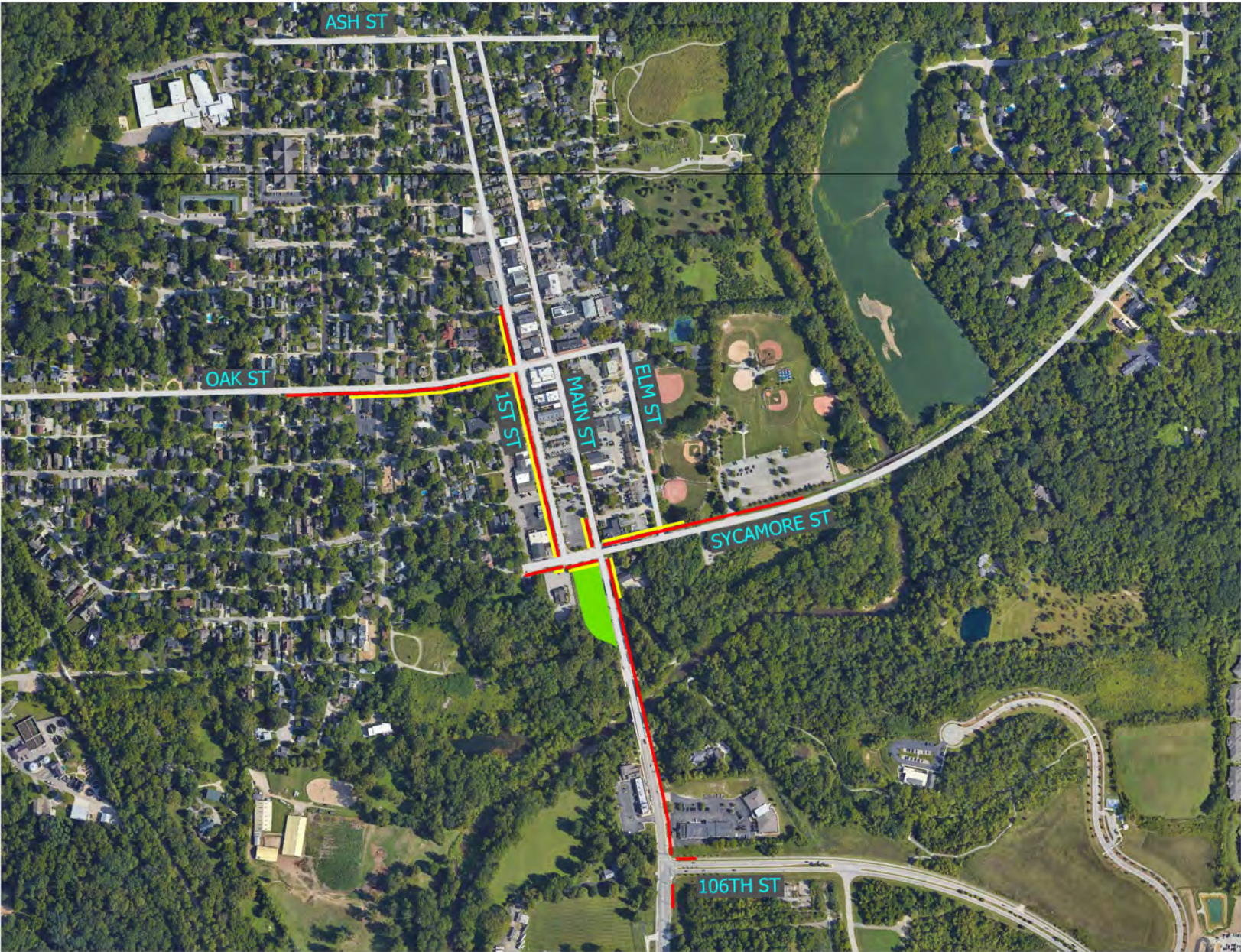
Scenario 1: No Build - 2025

95th Percentile
Queue Length
Summary



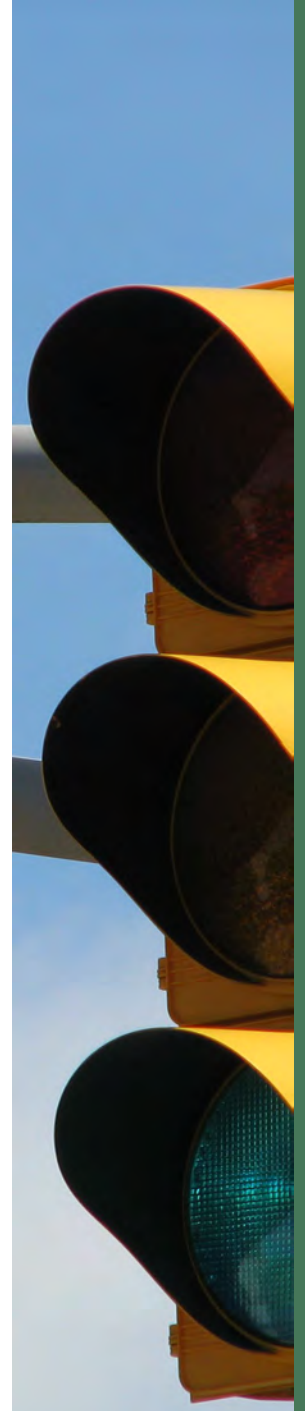
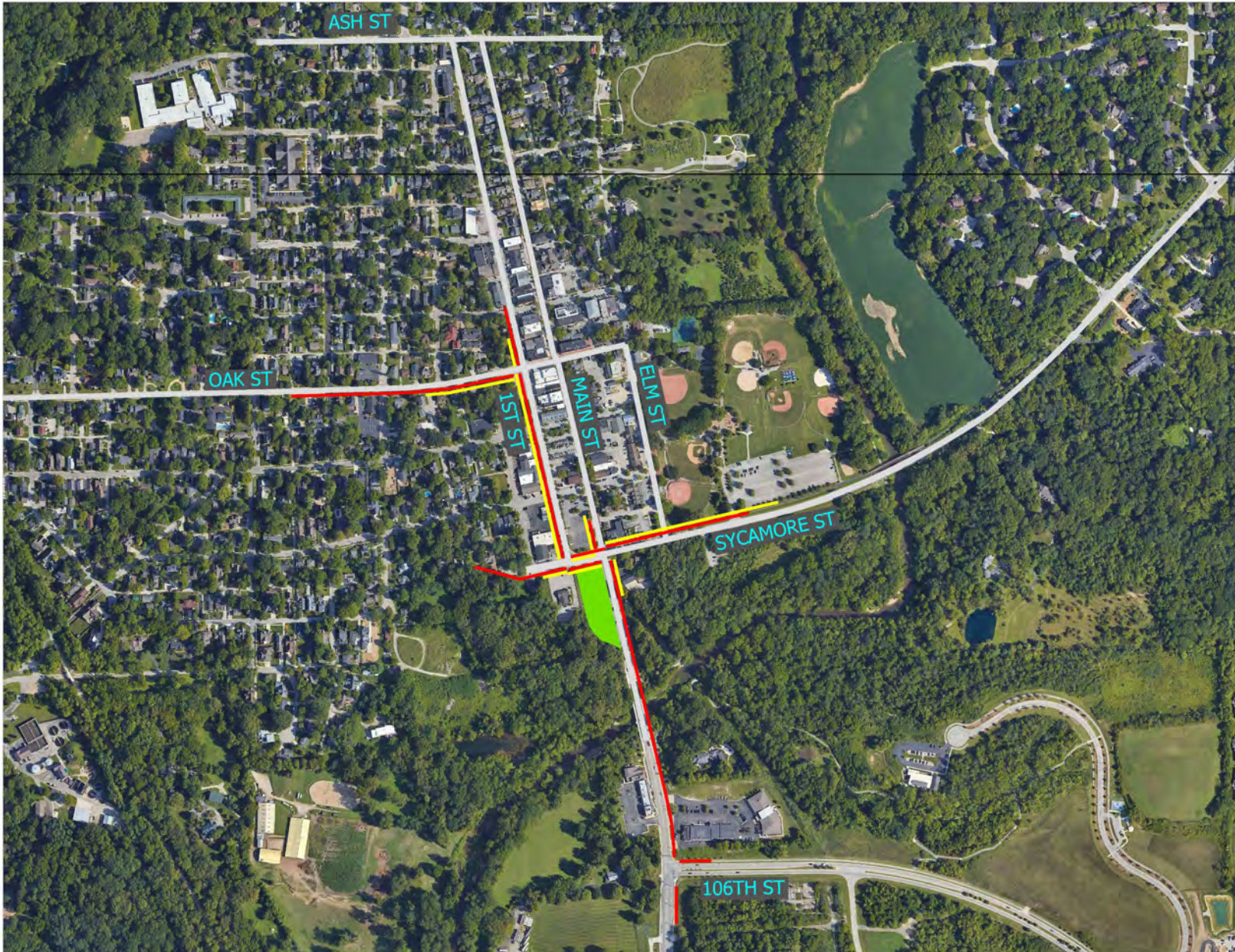
Scenario 2: No Build - 2035

95th Percentile
Queue Length
Summary



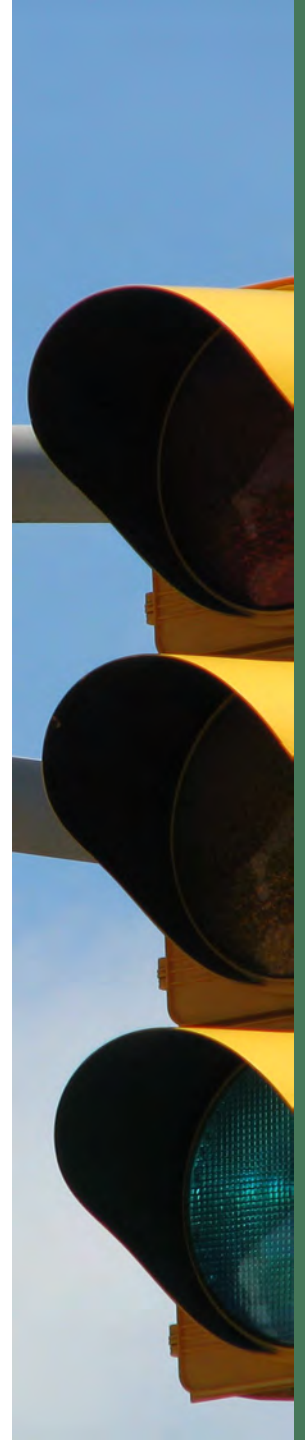
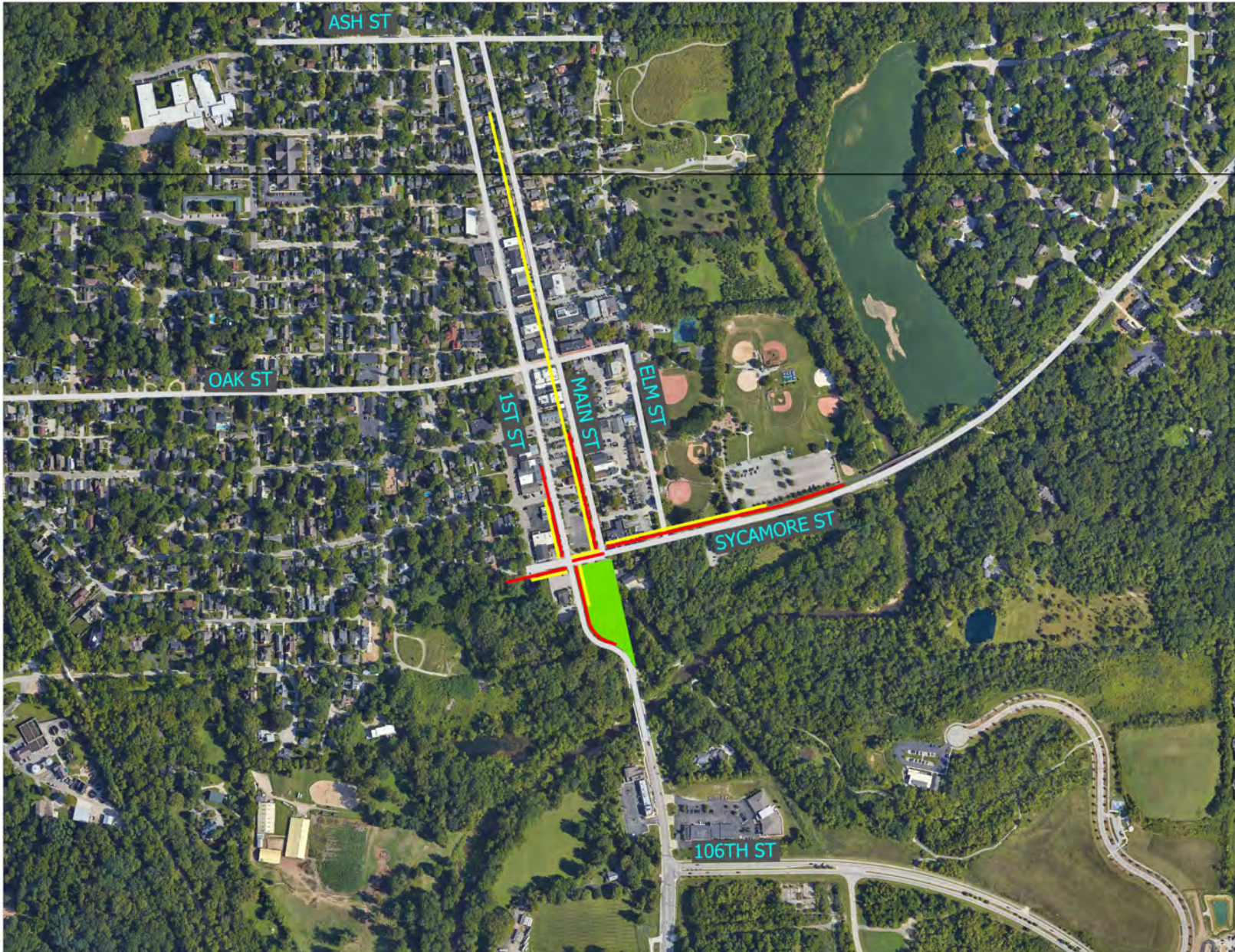
Scenario 3: Coordinated Signal System

95th Percentile Queue Length Summary



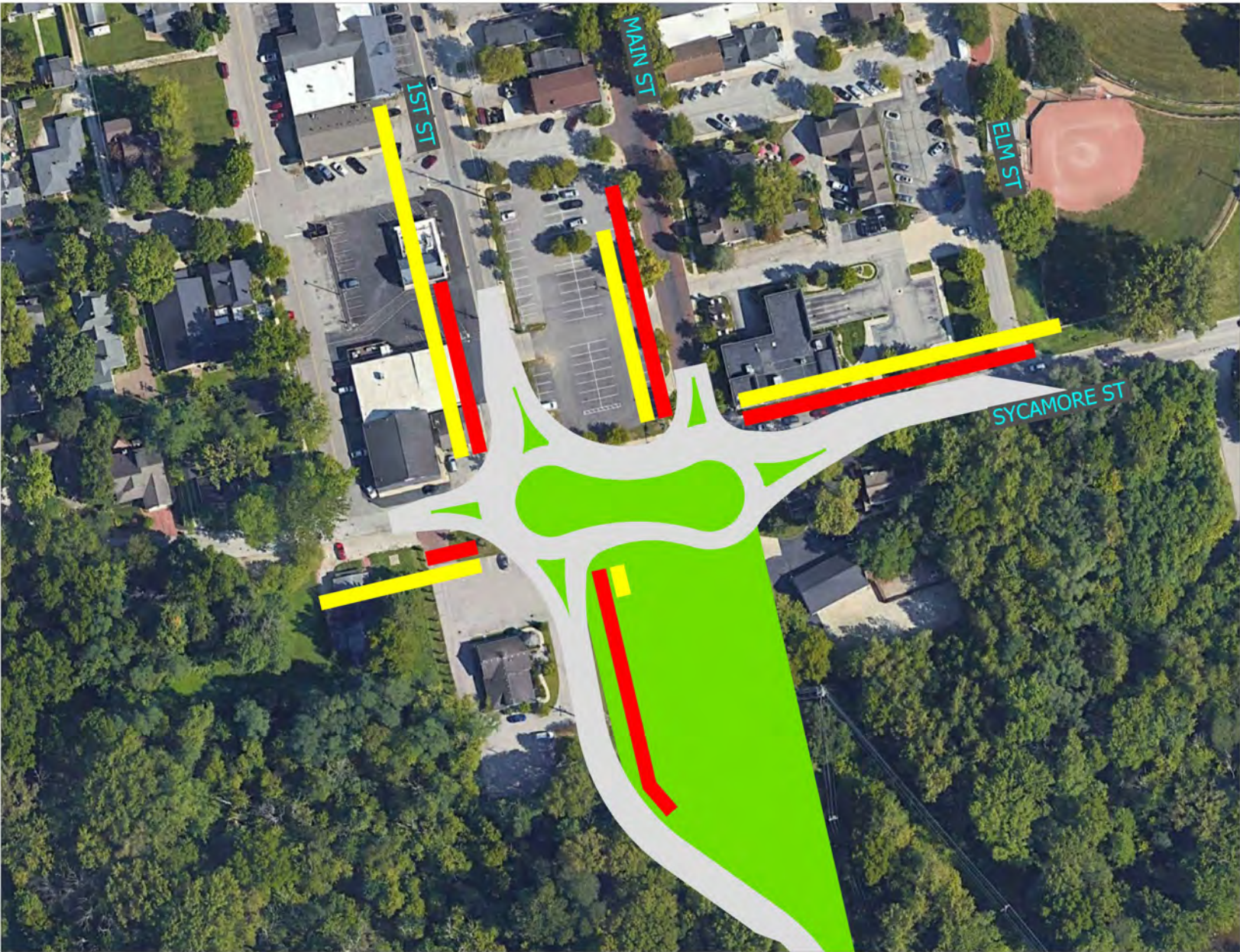
Scenario 4: Moved Signal/Realignment

95th Percentile Queue Length Summary



Scenario 5: “Peanut” RAB Two-Way West

95th Percentile
Queue Length
Summary



Scenario 6: “Peanut” RAB Two-Way East

95th Percentile
Queue Length
Summary



Scenario 7: “Peanut” RAB One-Way

95th Percentile
Queue Length
Summary



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