

Poplar Bridge Neighborhood Traffic Study West 84th Street Corridor Analysis

March 3, 2008

The following alternatives for the West 84th Street corridor were analyzed using year 2030 volumes:

Alternative 1

- Existing four-lane roadway with existing traffic controls
- Maintain Stanley Avenue traffic signal
- Maintain all-way stop control at Quinn Avenue and Morris Avenue

Alternative 2

- Existing four-lane roadway
- Remove Stanley Avenue traffic signal
- Install side-street stop control at Stanley Avenue
- Maintain all-way stop control at Quinn Avenue and Morris

Alternative 3

- Existing four-lane roadway
- Maintain Stanley Avenue traffic signal
- Remove all-way stop control at Quinn Avenue and Morris Avenue
- Install side-street stop control at Quinn Avenue, and Morris Avenue

Alternative 4

- Proposed three-lane roadway with existing traffic controls
- Maintain Stanley Avenue traffic signal
- Maintain all-way stop control at Quinn Avenue and Morris Avenue

Alternative 5

- Proposed three-lane roadway
- Remove Stanley Avenue traffic signal
- Remove all-way stop control at Quinn Avenue and Morris Avenue
- Install side-street stop control at Stanley Avenue, Quinn Avenue, and Morris Avenue

Alternative 5A

- Proposed three-lane roadway
- Remove Stanley Avenue traffic signal
- Remove all-way stop control at Quinn Avenue and Morris Avenue
- Install side-street stop control at Stanley Avenue, Quinn Avenue, and Morris Avenue
- Reroute side-street traffic volumes at Stanley Avenue

Alternative 6

- Proposed three-lane roadway
- Maintain Stanley Avenue traffic signal
- Remove all-way stop control at Quinn Avenue and Morris Avenue
- Install side-street stop control at Quinn Avenue, and Morris Avenue

Alternative 7

- Proposed three-lane roadway
- Maintain Stanley Avenue traffic signal
- Remove all-way stop control at Quinn Avenue and Morris Avenue
- Install traffic signals at Quinn Avenue and Morris Avenue

The operations analysis was completed using year 2030 volumes and assumes the following:

- Future redevelopments assumed in the Normandale Lake District Plan
- Upgrade of TH 169 to a full freeway facility from Old Shakopee Road to I-494
- Reconstruction of the TH 169/I-494 interchange
- Capacity expansion along I-494 from France Avenue through I-35W

The following alternatives for the West 84th Street corridor were analyzed using year 2030 peak hour volumes:

Alternative 1: Four-lane with existing traffic controls

Alternative 2: Four-lane without Stanley Avenue traffic signal, with all-way stops

Alternative 3: Four-lane with Stanley Avenue traffic signal, without all-way stops

Alternative 4: Three-lane with existing traffic controls

Alternative 5: Three-lane without Stanley Avenue traffic signal, without all-way stops

Alternative 5A: Three-lane without Stanley Avenue traffic signal, without all-way stops, reroute side-street volumes

Alternative 6: Three-lane with Stanley Avenue traffic signal, without all-way stops

Alternative 7: Three-lane with Stanley Avenue, Quinn Avenue and Morris Avenue traffic signals

Alternative	Stanley Avenue Average Delay ⁽²⁾ a.m. (p.m.)	Quinn Avenue Average Delay ⁽²⁾ a.m. (p.m.)	Morris Avenue Average Delay ⁽²⁾ a.m. (p.m.)	Average Side- Street Delay ⁽²⁾ a.m. (p.m.)	Travel Time – Westbound during Morning Peak Hour ⁽⁴⁾	Travel Time – Eastbound during Evening Peak Hour ⁽⁴⁾
Existing ⁽¹⁾	15 sec. (15 sec.)	10 sec. (10 sec.)	10 sec. (10 sec.)	10 sec. (20 sec.)	195 seconds	380 seconds
1	15 sec. (30 sec.)	10 sec. (10 sec.)	10 sec. (10 sec.)	10 sec. (15 sec.)	205 seconds	195 seconds
2	>5 min. (>5 min.) ⁽³⁾	10 sec. (10 sec.)	10 sec. (10 sec.)	10 sec. (15 sec.)	195 seconds	180 seconds
3	15 sec. (30 sec.)	15 sec. (20 sec.)	10 sec. (20 sec.)	10 sec. (15 sec.)	185 seconds	170 seconds
4	20 sec. (20 sec.)	10 sec. (10 sec.)	10 sec. (10 sec.)	15 sec. (20 sec.)	220 seconds	210 seconds
5	>5 min. (>5 min.) ⁽³⁾	15 sec. (25 sec.)	15 sec. (25 sec.)	15 sec. (20 sec.)	175 seconds	165 seconds
5A ⁽⁵⁾	(120 sec.)	(25 sec.)	(25 sec.)	(20 sec.)	n/a	160 seconds
6	20 sec. (20 sec.)	15 sec. (30 sec.)	15 sec. (30 sec.)	15 sec. (20 sec.)	195 seconds	175 seconds
7	20 sec. (20 sec.)	35 sec. (40 sec.)	35 sec. (35 sec.)	15 sec. (20 sec.)	195 seconds	180 seconds

⁽¹⁾ Existing four-lane with existing traffic controls analyzed with existing peak hour volumes

⁽²⁾ Average delay on side-street worst approach during morning and evening peak hours

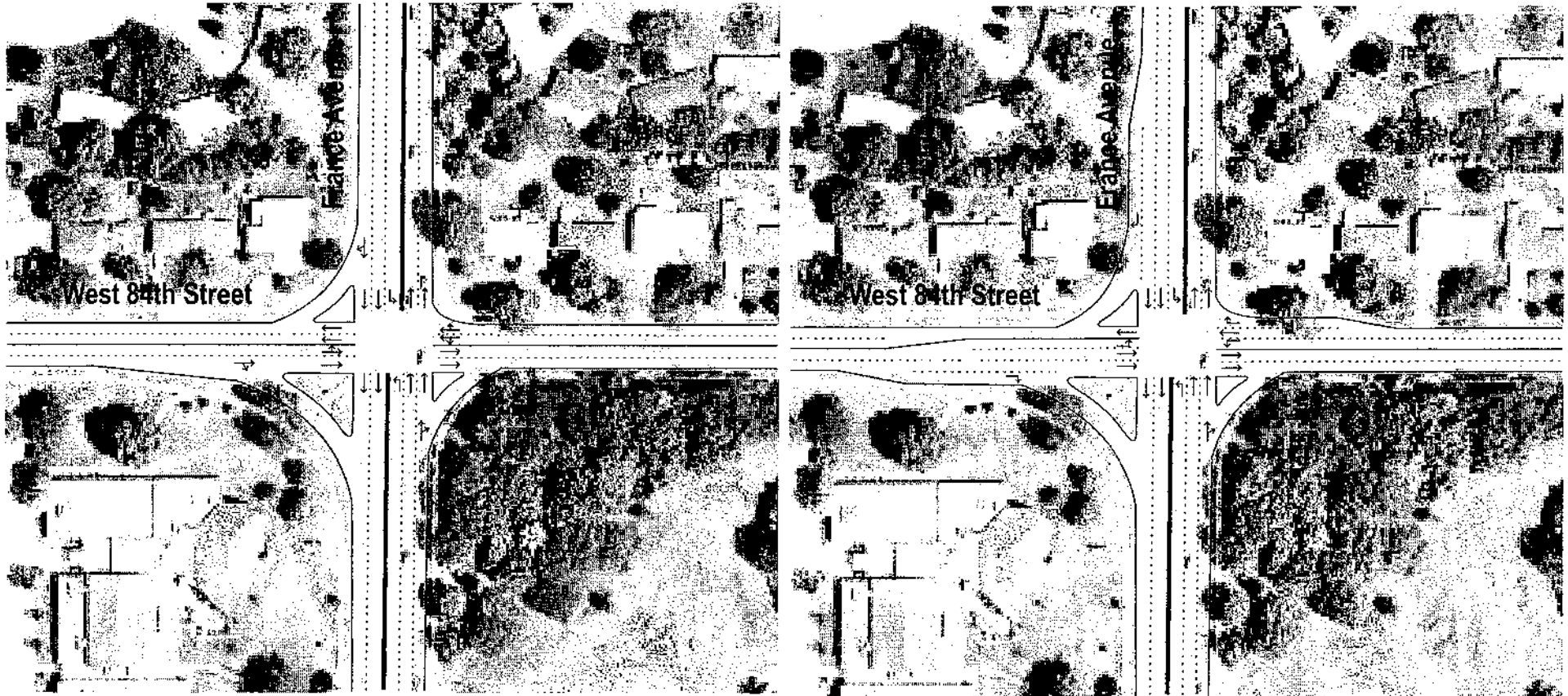
⁽³⁾ Peak hour volume on Stanley Avenue exceeds the number of acceptable gaps

⁽⁴⁾ Travel time east of the Normandale Avenue intersection through the France Avenue intersection Alternatives 1 to 7 include the proposed improvements at the intersection of West 84th Street/France Avenue

⁽⁵⁾ Only completed for p.m. peak hour Assumes northbound and southbound Stanley Avenue volumes rerouted

Existing Intersection Geometry

Proposed Intersection Geometry



- Operational problems during peak hour conditions

- Similar intersection delay during the a.m. peak hour
- Approximately 70 percent reduction in intersection delay during the p.m. peak hour
- Significant reduction in delay for eastbound right-turn movement during the p.m. peak hour

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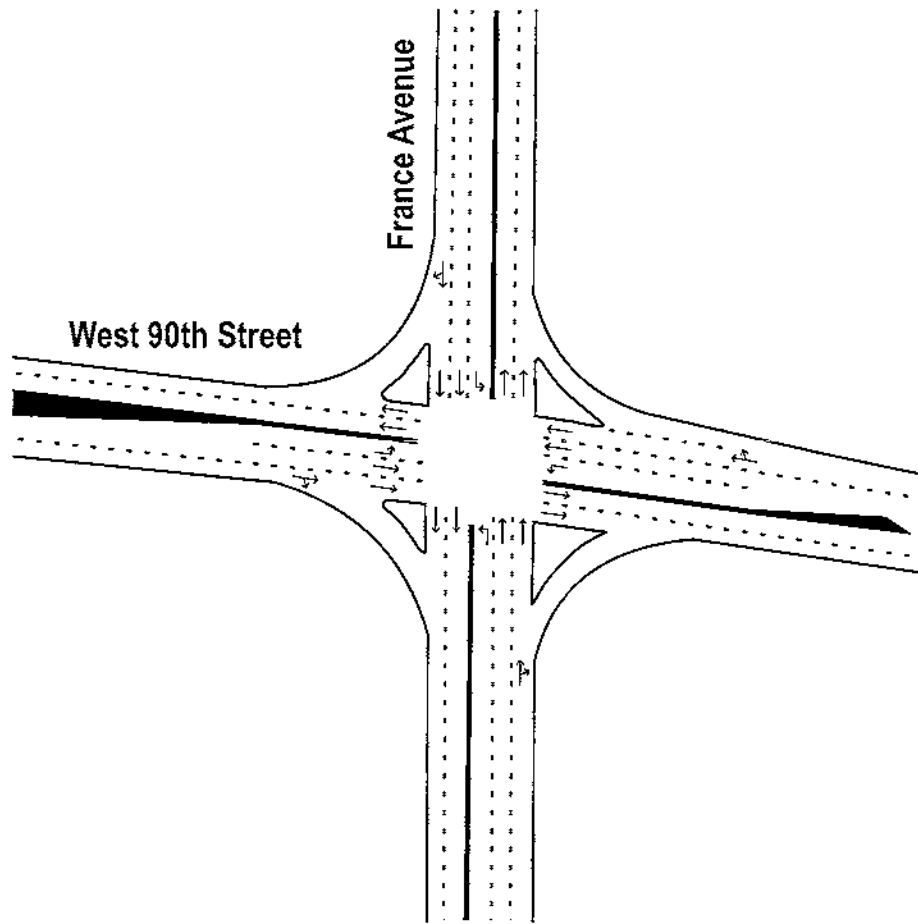
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Proposed Intersection Improvements - West 84th Street and France Avenue

Poplar Bridge Neighborhood Traffic Study

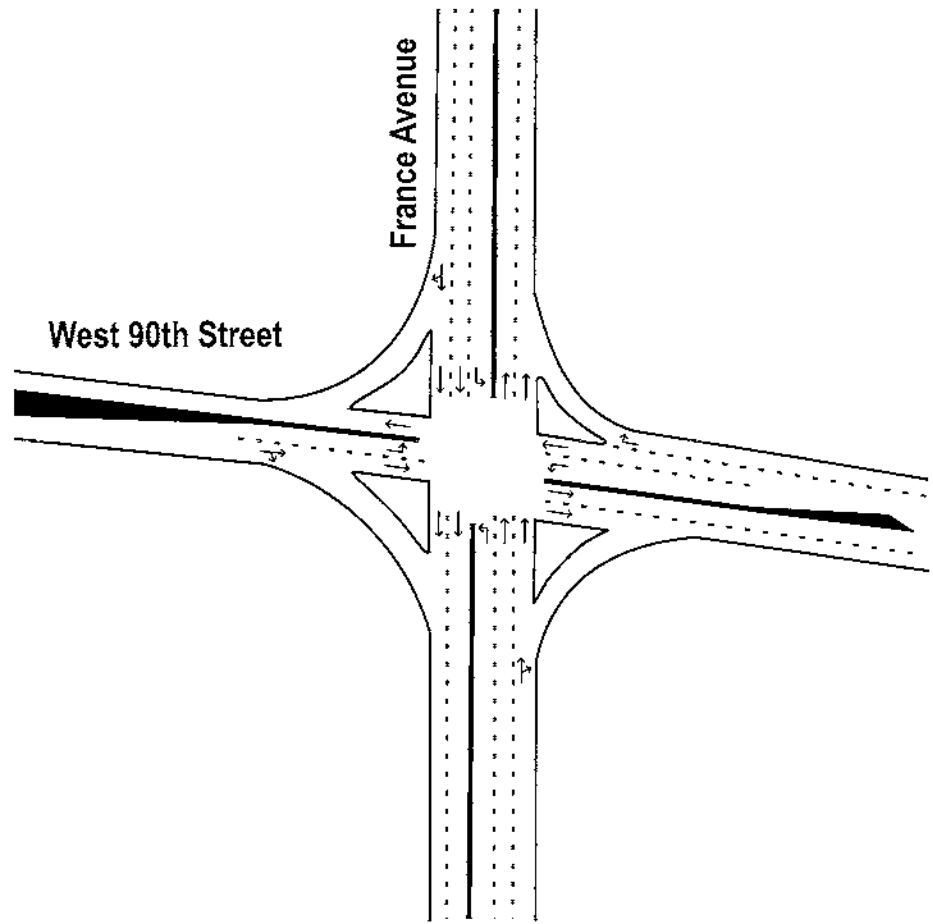
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Existing Intersection Geometry



- High westbound volume traveling through neighborhood during the a.m. peak hour
- Operational problems in the p.m. peak hour

Proposed Intersection Geometry



- Significant increase in delay for westbound through movement during the a.m. peak hour and eastbound through movement during the p.m. peak hour
- Westbound right-turn movement more "attractive"



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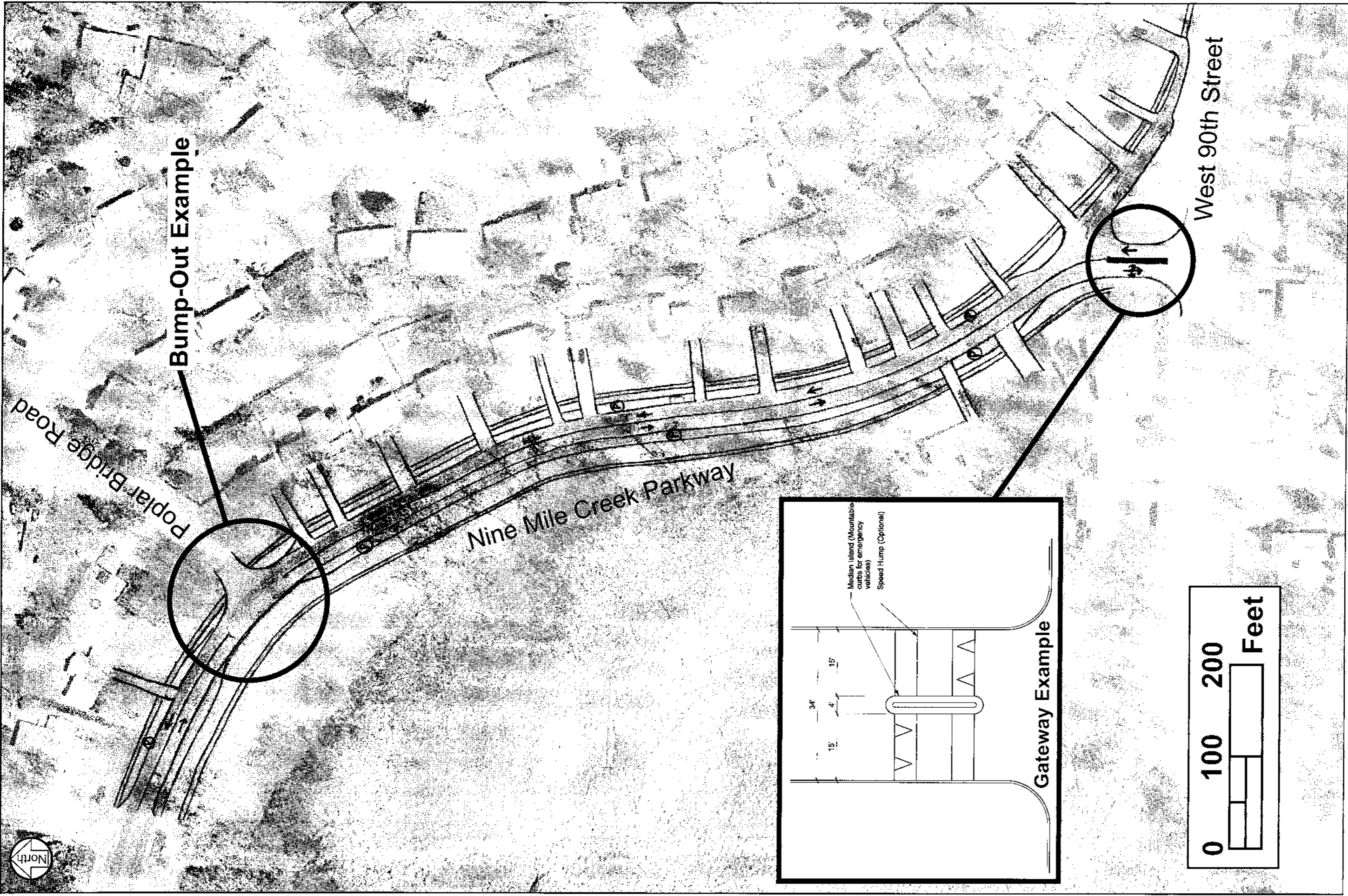
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Proposed Intersection Improvements - West 90th Street and France Avenue

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Potential Neighborhood Solution

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Figure 3



West 85th Street

West 86th Street

Rich Road

Nine Mile Creek Parkway

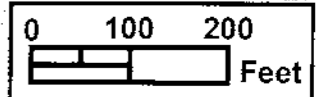
Oxborough Avenue

Poplar Bridge Road

Poplar Bridge Curve

Kell Avenue

Poplar Bridge Road

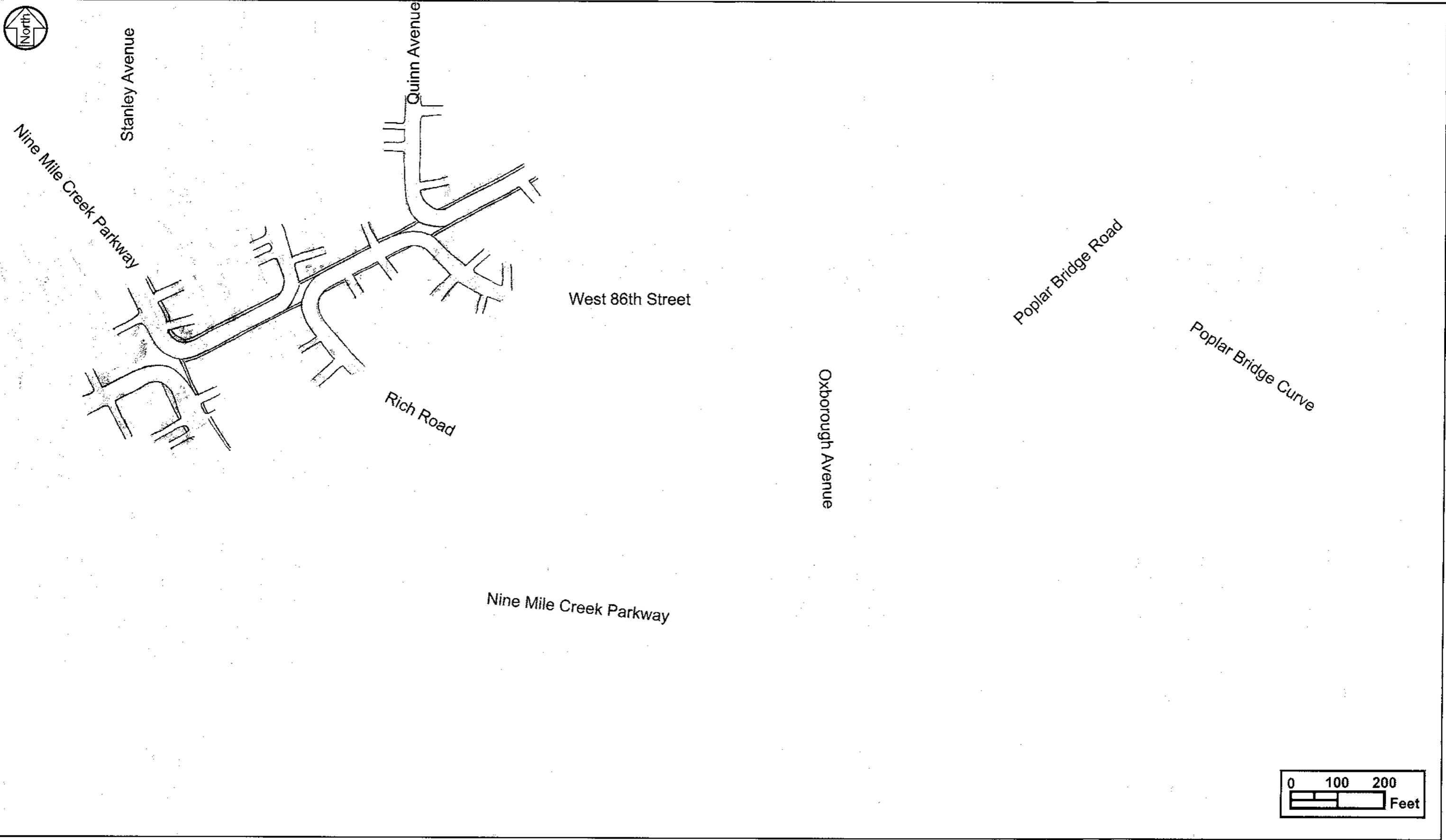


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Potential Diverter Solution A
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Figure 1



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