ALTERNATIVES EVALUATION REPORT

FOR

RAND ROAD/IL 83/KENSINGTON ROAD INTERSECTIONS
VILLAGE OF MOUNT PROSPECT, ILLINOIS

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Executive Summary

The purpose of this Alternatives Evaluation Report (AER) is to provide an evaluation of the alternatives considered for the proposed improvement of the Rand Road/IL 83/Kensington Road intersections. Based on data collection, crash analysis, existing and projected year traffic analyses, public feedback received from the Public Information Meeting held on December 3, 2018 and through the online questionnaire, a full range of alternatives was developed to address identified transportation issues within the study area. The study area is shown in the figure below.

Building on the planning efforts summarized in the Rand Road Corridor Plan (RRCP), the Rand Road/IL 83/Kensington Road intersections Phase I study takes a fresh look at the study area to determine an improvement plan that addresses traffic deficiencies related to congestion, mobility, access safety, and pedestrian/bicycle accommodations. The RRCP evaluated existing conditions at this complex intersection and proposed several alternative improvement concepts. Alternatives 1, 5, 8, and 9 were presented in the RRCP. These alternatives involved closing specific legs or connections at the intersection, realigning some legs, and the use of connector roadways to accommodate certain traffic movements. Alternatives 1, 5, 8, and 9 create significant impacts to the business and residential neighborhoods. The following is a list of these impacts:

- Access to Randhurst Village would be impacted.
- Existing businesses would be displaced with the installation of connector roadways.
- Commuters would have to travel longer distances to get to their destinations.
- Potential “cut-through” patterns could be created through parking lots and residential neighborhoods.

Due to the impacts that Alternatives 1, 5, 8, and 9 would have on area traffic and adjacent properties, this Phase I Study did not examine any alternatives that closed entire legs of the intersection. Rather, this study began the alternatives identification process at the point of only restricting individual movements at the intersection to improve its overall traffic flow and operations.

In total, twelve alternatives were examined as part of this study, which included the elimination of certain turn lanes, the addition of through and turn lanes, a grade separation alternative, and the use of a roundabout. The following alternatives were identified for a high-level evaluation:

- Alternative 1: Add left turn lanes on Kensington Road at its intersections with Rand Road and IL 83. Extend the existing eastbound right-turn lane on Kensington Road at IL 83 to Rand Road. Add a northbound right-turn lane on IL 83 and on Rand Road at their respective intersections with Kensington Road. Add a dedicated southbound right-turn lane on IL 83 at its intersection with Rand Road.
- Alternative 1A: Same improvements as described in Alternative 1 but also includes dual northbound and southbound left turn lanes on IL 83 at Rand Road.
- Alternative 1B: Same improvements as described in Alternative 1A but also includes an additional northwest-bound through lane on Rand Road at Kensington Road and IL 83.
- Alternative 2: Prohibit left turns from Kensington Road at its intersections with Rand Road and IL 83. Extend the existing eastbound right-turn lane on Kensington Road to Rand Road. Add a southbound right-turn lane on IL 83 at its intersection with Rand Road.
- Alternative 2A: Same improvements as described in Alternative 2 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.
- Alternative 3: Same improvements as described in Alternative 2 but also prohibit left turns from Rand Road.
- Alternative 3A: Same improvements as described in Alternative 3 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.
- Alternative 4: Prohibit all left turn maneuvers at the three intersections. Extend the existing eastbound right-turn lane on Kensington Road to Rand Road. Install a southbound right-turn lane on IL 83 at its intersection with Rand Road.
- Alternative 4A: Same improvements as described in Alternative 4 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.
- Alternative 5: Remove the left-turn lanes on Rand Road and Kensington Road at the project intersections. Extend the existing eastbound right-turn lane on Kensington Road to Rand Road. Install ring roads.
- Alternative 6: Grade separation.
- Alternative 7: Modern roundabout.

Concept drawings of Alternatives 1 through 6 are provided in Appendix 1.

Evaluation Approach

To evaluate each alternative, an alternatives evaluation table was developed and included in Appendix 2 Alternatives were compared to baseline conditions (no-build with year 2040 traffic volumes) using several evaluation criteria to demonstrate how well the project needs are met, most notably:

- Remove blocked intersections: Reduce queuing through upstream signals and overall queuing.
- Safety: Improve signalized intersections level-of-service (LOS) and reduce average delay because reducing intersection queuing and congestion improves safety
- Impacts to area businesses and the community
- Planning level construction cost

Summary of Results

In comparison to the baseline condition (no-build with year 2040 traffic volumes), Alternatives 2, 2A, 3, 3A, 4, 4A, 5, 6, and 7 had the greatest impact to the adjacent businesses, residents and right-of-way. On this basis, these alternatives are not recommended to be considered further because they provide limited benefit when compared to their impacts.

Alternatives 1, 1A, and 1B remain under consideration and have been further evaluated. A more detailed alternatives evaluation table was developed for these alternatives and is included in Appendix 3.

Next Steps

Further coordination of Alternatives 1, 1A, and 1B with Village of Mount Prospect (Village) staff and Village Board is planned. Based on the coordination, a recommended alternative will be identified and will be presented at a second Public Information Meeting for all project stakeholders to have the opportunity to review and comment on the overall alternatives evaluation process and results. Subsequent to the Public Information Meeting #2, detailed engineering plans and studies will be developed for the preferred alternative and will be coordinated with the Illinois Department of Transportation (IDOT) and the Federal Highway Administration (FHWA) for review and approval of the Phase I Study.

I. INTRODUCTION

Previously, the Rand Road Corridor Plan (RRCP) was jointly funded and completed by the Regional Transportation Authority (RTA) and the Village in early 2017 as a feasibility study of general improvement needs and priorities along the Rand Road corridor from Camp McDonald Road to Central Road. The RRCP provided a framework for near-term and long-term improvement priorities, and identified the Rand Road/IL 83/Kensington Road intersections as a near-term improvement priority.

Building on the planning efforts summarized in the RRCP, the Rand Road/IL 83/Kensington Road intersections Phase I Study takes a fresh look at the study area to determine an improvement plan that addresses traffic deficiencies related to congestion, mobility, safety, and pedestrian/bicycle accommodations. Some of the reoccurring concerns heard are that long back-ups at the intersections cause poor vehicular mobility. In addition, congestion causes erratic driver behavior with associated safety concerns and pedestrian/bicycle accessibility concerns.

The purpose of this report is to provide an evaluation of the alternatives considered for the proposed improvement of the Rand Road/IL 83/Kensington Road intersections. Based on data collection, crash analysis, existing and projected year 2040 traffic analyses, public feedback received from the Public Information Meeting held on December 3, 2018 and through the online questionnaire, a full range of alternatives was developed to address identified transportation issues within the study area.

The concept range of alternatives was formulated and discussed with Village staff. The range of alternatives evaluated includes:

- Alternative 1: Add left turn lanes on Kensington Road at its intersections with Rand Road and IL 83. Extend the existing eastbound right-turn lane on Kensington Road at IL 83 to Rand Road. Add a northbound right-turn lane on IL 83 and on Rand Road at their respective intersections with Kensington Road. Add a dedicated southbound right-turn lane on IL 83 at its intersection with Rand Road.
- Alternative 1A: Same improvements as described in Alternative 1 but also includes dual northbound and southbound left turn lanes on IL 83 at Rand Road.
- Alternative 1B: Same improvements as described in Alternative 1A but also includes an additional northwest-bound through lane on Rand Road at Kensington Road and IL 83.
- Alternative 2: Prohibit left turns from Kensington Road at its intersections with Rand Road and IL 83. Extend the existing eastbound right-turn lane on Kensington Road to Rand Road. Add a southbound right-turn lane on IL 83 at its intersection with Rand Road.
- Alternative 2A: Same improvements as described in Alternative 2 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.
- Alternative 3: Same improvements as described in Alternative 2 but also prohibit left turns from Rand Road.
- Alternative 3A: Same improvements as described in Alternative 3 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.
- Alternative 4: Prohibit all left turn maneuvers at the three intersections. Extend the existing eastbound right-turn lane on Kensington Road to Rand Road. Install a southbound right-turn lane on IL 83 at its intersection with Rand Road.

- Alternative 4A: Same improvements as described in Alternative 4 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.
- Alternative 5: Remove the left-turn lanes on Rand Road and Kensington Road at the project intersections. Extend the existing eastbound right-turn lane on Kensington Road to Rand Road. Install ring roads.
- Alternative 6: Grade separation.
- Alternative 7: Modern roundabout.

II. BASELINE CONDITION - NO-BUILD ALTERNATIVE

Considering design year 2040 peak hour traffic and existing intersection geometry, there is a slight increase in delay and degradation in the LOS as compared to the existing conditions capacity analyses due to the projected increases in traffic by the year 2040. Vehicles travelling northbound on IL 83 at its intersection with Rand Road back up beyond the IL 83 and Kensington Road intersection. Also, vehicles traveling southeast-bound on Rand Road at its intersection with Kensington Road back up beyond IL 83 and Rand Road intersection. This situation causes gridlock in the area. In addition, the turn lane queues are exceeding the amount of storage provided. Therefore, the 2040 No-Build scenario does not address the project purpose and need.

III. BUILD ALTERNATIVES DESCRIPTION AND ANALYSIS RESULTS

A description of each Build Alternative considered and a summary of the analysis results is provided below. Concept drawings of Build Alternatives 1 through 6 are provided in Appendix 1. The results of the evaluation are included in Appendix 2. For ease of reference, queue exhibits showing resulting queue lengths directly follow each alternative in Appendix 1.

Alternative 1

Alternative 1 involves widening Kensington Road to the north to allow for installation of dedicated eastbound and westbound left turn lanes on Kensington Road at its intersections with Rand Road and IL 83. In addition, the existing eastbound right-turn lane on Kensington Road at IL 83 is extended to Rand Road. Finally, a dedicated northbound right-turn lane is provided on IL 83 and on Rand Road at their respective intersections with Kensington Road and a dedicated southbound right-turn lane is provided on IL 83 at its intersection with Rand Road.

Summary:

There is slight improvement to the overall intersection delay at the subject intersections compared to the No-Build Alternative. The overall intersection LOS during the morning peak hour at the Rand Road/IL 83 intersection improved from an unacceptable LOS “E” to an acceptable LOS “D.” The westbound approach delay on Kensington Road at IL 83 however did not improve because the westbound queue clears at the end of the signal cycle which prohibits vehicles to travel through the Rand Road/Kensington Road intersection to use the protected westbound left-turn phase at the IL 83/Kensington Road intersection. However, providing a dedicated left-turn lane on Kensington Road results in the removal of the “oncoming traffic has longer green” situation and by adding a left-turn protected phase should reduce the potential for accidents caused by left-turning vehicles.

The installation of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road does not significantly improve delay or the LOS on those approaches because the right-turn traffic volumes are relatively low, however, operations are improved. In addition, the queues on those approaches generally remain the same as compared to the No-Build Alternative. Vehicles travelling northbound on IL 83 at its intersection with Rand Road continue to back up beyond the IL 83 and Kensington Road intersection. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- The overall intersection LOS during the morning peak hour at the Rand Road/IL 83 intersection improved from an unacceptable LOS "E" to an acceptable LOS "D."
- Provides a dedicated left-turn lane on Kensington Road with a protected phase therefore removing the need for the "oncoming traffic has longer green" situation.
- The left-turn protected phase on Kensington Road should reduce the potential for accidents caused by left-turning vehicles.

Disadvantages:

- Additional right-of-way may be required on the north side of Kensington Road to widen the roadway for the installation of the left-turn lanes.
- Additional right-of-way may be required on the south side of Kensington Road between Rand Road and IL 83 to widen the roadway for an eastbound right-turn lane.
- Additional right-of way may be required on IL 83 to install the right-turn lanes.
- Additional right-of-way may be required on Rand Road, south of Kensington to install the northbound right-turn lane.
- Vehicles travelling northbound on IL 83 at its intersection with Rand Road continue to back up beyond the IL 83 and Kensington Road intersection.
- The difficulty of coordinating the traffic signals between each intersection to take advantage of the left-turn protected phase causes an increase in delay.

Alternative 1 is carried forward for further evaluation and stakeholder coordination. See Evaluation Table 2 in Appendix 3 for a more detailed review.

<u>Alternative 1A</u>

Alternative 1A involves the same improvements as described in Alternative 1 but also includes the widening of IL 83 to install dual northbound and southbound left-turn lanes at Rand Road. The addition of a second northbound and southbound left-turn lane was identified in the previous IDOT Rand Road Strategic Regional Arterial (SRA) Study.

Summary:

In general, there is an increase in the overall intersection delay for all intersections with the exception of the Rand Road and Kensington Road intersection compared to Alternative 1. The overall intersection LOS during the evening peak hour at the Rand Road/Kensington Road intersection improved from an unacceptable LOS "E" to an acceptable LOS "D", however, the overall intersection delay at the IL 83/Rand Road intersection during the morning peak hour remained at an unacceptable LOS "E". Due to the bottleneck issues on IL 83 south of Kensington Road, vehicles are not able to maneuver into northbound lanes between Rand Road and Kensington Road. In addition, the northbound left turn queue is spilling out of the left turn lane blocking the northbound through lanes requiring the northbound dual left turn lanes to be extended south of Kensington Road. Also, due to the addition of a second left-turn lane, the left

turn phase has to be a “protected only” phase which results in “stealing” precious “green time” from other phases.

Similar to Alternative 1, the northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection. However, Alternative 1A creates an additional situation; the southeast-bound approach at the Rand Road/Kensington Road intersection now backs up through and beyond the IL 83/Rand Road intersection and the westbound approach at the IL 83/Kensington Road intersection backs up through and beyond the Rand Road/Kensington Road intersection. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- The overall intersection LOS during the evening peak hour at the Rand Road/Kensington Road intersection improved from an unacceptable LOS “E” to an acceptable LOS “D”.
- Provides a dedicated left-turn lane with a protected phase on Kensington Road, therefore removing the need for the “oncoming traffic has longer green” situation.
- The left-turn protected phase on Kensington Road should reduce the potential for accidents caused by left-turning vehicles.

Disadvantages:

- Additional right-of-way may be required on the north side of Kensington Road to widen the roadway for installation of left-turn lanes.
- Additional right-of-way may be required on the south side of Kensington Road between Rand Road and IL 83 to widen the roadway for an eastbound right-turn lane.
- Additional right-of-way may be required on IL 83 to install the right-turn lanes and the additional left-turn lane.
- Additional right-of-way may be required on Rand Road, south of Kensington to install the northbound right-turn lane.
- The storage length for the northbound left-turn lane needs to be extended to the south through the IL 83/Kensington Road intersection.
- The northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection.
- The southeast-bound approach at the Rand Road/Kensington Road intersection backs up through and beyond the IL 83/Rand Road intersection.
- The westbound approach at the IL 83/Kensington Road intersection backs up through and beyond the Rand Road/Kensington Road intersection.
- The difficulty of coordinating the traffic signals between each intersection to take advantage of the left-turn protected phase causes an increase in delay.

Alternative 1A is carried forward for further evaluation and stakeholder coordination.
See Evaluation Table 2 in Appendix 3 for a more detailed review.

Alternative 1B

Alternative 1B involves the same improvements as described in Alternative 1A but also includes widening Rand Road to install an additional northwest-bound through lane at Kensington Road and IL 83.

Summary:

With the addition of a northwest-bound through lane on Rand Road, there is an improvement to the delay compared to Alternatives 1 and 1A. Overall, intersection LOS for the subject intersections during the three peak hours (weekday AM and PM and Saturday mid-day) are now operating at an acceptable LOS "D" and above. Similar to Alternative 1A, vehicles traveling northbound, westbound, and southeast-bound continue to back up through and beyond the adjacent intersections. However, queues are generally smaller for all approaches compared to Alternatives 1 and 1A and are considerably smaller compared to the No-Build Alternative. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Overall intersection LOS for the each intersection during the three peak hours (weekday AM and PM and Saturday mid-day) are operating at an acceptable LOS "D" and above.
- Provides a dedicated left-turn lane with a protected phase on Kensington Road, therefore removing the need for the "oncoming traffic has longer green" situation.
- The left-turn protected phase on Kensington Road should reduce the potential for accidents caused by left-turning vehicles.
- Improves delay and LOS along Kensington Road.
- Queues are reduced for all approaches.

Disadvantages:

- Additional right-of-way may be required on the north side of Kensington Road to widen the roadway for installation of left-turn lanes.
- Additional right-of-way may be required on the south side of Kensington Road between Rand Road and IL 83 to widen the roadway for an eastbound right-turn lane.
- Additional right-of-way may be required on IL 83 to install the right-turn lanes.
- Additional right-of-way may be required on Rand Road, south of Kensington to install the northbound right-turn lane.
- Additional right-of-way may be required along Rand Road to accommodate the additional through lane.
- The northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection.
- The southeast-bound approach at the Rand Road/Kensington Road intersection backs up through and beyond the IL 83/Rand Road intersection.
- The westbound approach at the IL 83/Kensington Road intersection backs up through and beyond the Rand Road/Kensington Road intersection.
- The difficulty of coordinating the traffic signals between each intersection to take advantage of the left-turn protected phase.

Alternative 1B is carried forward for further evaluation and stakeholder coordination.

See Evaluation Table 2 in Appendix 3 for a more detailed review.

Alternative 2

Alternative 2 involves prohibiting left turns from Kensington Road at its intersections with Rand Road and IL 83 and installing turnarounds (designated areas on the far side of an intersection, where vehicles who desire to make a left-turn can make a U-turn to go back to the intersection and make a right-turn) downstream of the intersection. These turnarounds are designed to allow traffic traveling in one direction on a road to efficiently make a U-turn without backing up or making dangerous maneuvers in the middle of the traffic stream. Under this alternative, motorists traveling on Kensington Road desiring to either turn-left onto Rand Road or onto IL 83 would travel through the intersections and make a U-turn at the turnaround and then travel back to the intersection where they now would make a right-turn. Alternative 2 also includes the extension of the existing eastbound right-turn lane on Kensington Road to Rand Road and the installation of a dedicated southbound right-turn lane on IL 83 at its intersection with Rand Road. Year 2040 peak hour traffic volumes were redistributed due to the removal of the left-turn maneuvers from Kensington Road.

Summary:

There is a slight improvement in the overall delays compared to the No-Build Alternative. The overall intersection LOS during the evening peak hour at the Rand Road/Kensington Road intersection improved from an unacceptable LOS “E” to an acceptable LOS “D”, however, the overall intersection delay at the IL 83/Rand Road intersection during the morning peak hour remained at an unacceptable LOS “E”. Vehicles traveling northbound and southeast-bound continue to back up through and beyond the adjacent intersections. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns from Kensington Road eliminates the “oncoming traffic has longer green” situation.
- Prohibiting left-turns from Kensington Road reduces the potential for accidents caused by left-turning vehicles.
- Prohibiting left-turns from Kensington Road eliminates the left turn phase, which results in more green time for other movements.
- Improves delay and LOS along Kensington Road.

Disadvantages:

- Additional right-of-way will be required along Kensington Road to widen the roadway for left-turn lanes at the turnarounds and for installation of the turnarounds.
- Reconfiguration of Home Depot’s truck access will be required.
- Will impact the planned development along the south side of Kensington Road east of Rand Road.
- Emergency access to Elmhurst Avenue is compromised.
- Increase in travel time for motorists desiring to make left-turns from Kensington Road.
- The northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection.
- The southeast-bound approach at the Rand Road/Kensington Road intersection backs up through and beyond the IL 83/Rand Road intersection.
- Potential for an increase in motorists using residential streets or parking lots as a result of eliminating left-turns from Kensington Road.

Alternative 2 is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 2A

Alternative 2A involves the same improvements as described in Alternative 2 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.

Summary:

In general, there is not a significant improvement in the delay and LOS for the majority of the approaches as compared to Alternative 2. Similar to Alternative 2, the overall intersection LOS during the evening peak hour at the Rand Road/Kensington Road intersection improved from an unacceptable LOS "E" to an acceptable LOS "D", while the overall intersection delay at the IL 83/Rand Road intersection during the morning peak hour remained at an unacceptable LOS "E". The installation of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road does not improve the delay or the LOS on those approaches because the right-turn traffic volumes are relatively low. Vehicles traveling northbound and southeast-bound continue to back up through and beyond the adjacent intersections. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns from Kensington Road eliminates the "oncoming traffic has longer green" situation.
- Prohibiting left-turns from Kensington Road reduces the potential of accidents caused by left-turning vehicles.
- Prohibiting left-turns from Kensington Road eliminates the left-turn phase, which results in more green time for other movements.
- Improves delay and LOS along Kensington Road.

Disadvantages:

- Additional right-of-way will be required along Kensington Road to widen the roadway for left-turn lanes at the turnarounds and for installation of the turnarounds.
- Additional right-of-way may be required on the south side of Kensington Road between Rand Road and IL 83 to widen the roadway for an eastbound right-turn lane.
- Additional right-of-way may be required on IL 83 to install the right-turn lanes.
- Additional right-of-way may be required on Rand Road, south of Kensington to install the northbound right-turn lane.
- Reconfiguration of Home Depot's truck access will be required.
- Will impact the planned development along the south side of Kensington Road east of Rand Road.
- Emergency access to Elmhurst Avenue is compromised.
- Increase in travel time for motorists desiring to make left-turns from Kensington Road.
- Potential for an increase in motorists using residential streets or parking lots as a result of eliminating left-turns from Kensington Road.
- The northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection.
- The southeast-bound approach at the Rand Road/Kensington Road intersection backs up through and beyond the IL 83/Rand Road intersection.

Alternative 2A is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 3

Alternative 3 involves the same improvements as described in Alternative 2 but also prohibits left turns from Rand Road and includes the installation of turnarounds on Rand Road.

Summary:
In general, there is an improvement in overall delay and LOS compared to the No-Build Alternative and a slight improvement in delay and LOS compared to Alternative 2. Overall intersection LOS for the subject intersections during the three peak hours (weekday AM and PM and Saturday mid-day) are now operating at an acceptable LOS "D" and above. Vehicles traveling northbound on IL 83 at the IL 83/Rand Road intersection continue to back up beyond the IL 83 and Kensington Road intersection. However, vehicles travelling southeast-bound on Rand Road at its intersection with Kensington Road do not back up through the IL 83/Rand road intersection. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns from Rand Road and Kensington Road eliminates the "oncoming traffic has longer green" situation.
- Prohibiting left-turns from Rand Road and Kensington Road reduces the potential for accidents caused by left-turning vehicles.
- Prohibiting left-turns from Rand Road and Kensington Road eliminates the left-turn phase, which results in more green time for other movements.
- Improves delay and LOS for all three intersections during the three peak hours.

Disadvantages:

- Additional right-of-way will be required along Rand Road and Kensington Road to widen the roadway for left-turn lanes at the turnarounds and for installation of the turnarounds.
- Reconfiguration of Home Depot's truck access will be required.
- Conflicts with the potential development within the vacant parcel located along the east side of Rand Road north of Highland Avenue.
- Will impact the planned development along the south side of Kensington Road east of Rand Road.
- Emergency access to Elmhurst Avenue is compromised.
- Increase in travel time for motorists desiring to make left-turns from Kensington Road and Rand Road.
- Potential for an increase in motorists using residential streets or parking lots as a result of eliminating left-turns from Kensington Road.
- The northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection.

Alternative 3 is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 3A

Alternative 3A involves the same improvements as described in Alternative 3 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.

Summary:

In general, there a slight improvement in the delay and LOS compared to Alternative 3 for the majority of the approaches. The installation of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road does not improve delay or the LOS on those approaches because the right-turn traffic volumes are relatively low. Vehicles traveling northbound on IL 83 at the IL 83/Rand Road intersection continue to back up beyond the IL 83 and Kensington Road intersection. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns from Rand Road and Kensington Road eliminates the "oncoming traffic has longer green" situation.
- Prohibiting left-turns from Rand Road and Kensington Road reduces the potential for accidents caused by left-turning vehicles.
- Prohibiting left-turns from Rand Road and Kensington Road eliminates the left-turn phase, which results in more green time for other movements.
- Improves delay and LOS for all three intersections during the three peak hours.

Disadvantages:

- Additional right-of-way will be required along Rand Road and Kensington Road to widen the roadway for left-turn lanes at the turnarounds and for installation of the turnarounds.
- Additional right-of-way may be required on IL 83 to install the right-turn lanes.
- Additional right-of-way may be required on Rand Road, south of Kensington to install the northbound right-turn lane.
- Reconfiguration of Home Depot's truck access will be required.
- Conflicts with the potential development within the vacant parcel located along the east side of Rand Road north of Highland Street.
- Will impact the planned development along the south side of Kensington Road east of Rand Road.
- Emergency access to Elmhurst Avenue is compromised.
- Increase in travel time for motorists desiring to make left-turns from Kensington Road and Rand Road.
- Potential for an increase in motorists using residential streets or parking lots as a result of eliminating left-turns from Kensington Road and Rand Road.
- The northbound approach at the IL 83/Rand Road intersection continues to back up beyond the IL 83 and Kensington Road intersection.

Alternative 3A is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 4

Alternative 4 prohibits all left-turn maneuvers at the three intersections. Turnarounds are proposed on all legs of the intersections except for south leg of the IL 83/Kensington Road intersection. A turnaround is not proposed for the south leg of the IL 83/Kensington Road intersection due to the numerous residential driveways located along this stretch of IL 83. Motorists desiring to make a southbound left-turn from IL 83 onto Rand Road or Kensington Road will utilize Highland Street to gain access to Rand Road or Kensington Road. Alternative 4 also includes extension of the existing eastbound right-turn lane on Kensington Road to Rand Road and installation of a dedicated southbound right-turn lane on IL 83 at its intersection with Rand Road.

Summary:
In general, there is an improvement in the delay and LOS for the majority of the approaches compared to the No-Build Alternative. In fact, all approaches are operating at an acceptable LOS "C" or above. Vehicles are no longer backing up through and beyond the adjacent intersections. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns eliminates the "oncoming traffic has longer green" situation.
- Prohibiting left-turns reduces the potential for accidents caused by left-turning vehicles.
- Prohibiting left-turns eliminates the left-turn phase, which results in more green time for other movements.
- Improves delay and LOS along Kensington Road.

Disadvantages:

- Additional right-of-way will be required for installation of the turnarounds.
- Reconfiguration of Home Depot's truck access will be required.
- Conflicts with potential develop within the vacant parcel located along east side of Rand Road north of Highland Street.
- Will impact the planned development along the south side of Kensington Road east of Rand Road.
- Emergency access to Elmhurst Avenue is compromised.
- Increase in travel time for motorists deserving to make left-turns at the intersections.
- Potential for an increase in motorists using residential streets or parking lots as a result of eliminating left-turns from Kensington Road, Rand Road, and IL 83.
- Forces vehicles desiring to make a left-turn from IL 83 to Kensington Road to make a left-turn at its intersection with Highland Street. Installation of a left-turn lane on IL 83 at Highland Street would be required.

Alternative 4 is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 4A

Alternative 4A involves the same improvements as described in Alternative 4 but with the addition of a northbound right-turn lane on IL 83 at Kensington Road and on Rand Road at Kensington Road.

Summary:
In general, there is no noticeable improvements in the delay and LOS compared to Alternative 4 for the majority of the approaches. However, vehicles are no longer backing up through and beyond the adjacent intersections. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns eliminates the "oncoming traffic has longer green" situation.
- Prohibiting left-turns reduces the potential for accidents caused by left-turning vehicles.
- Prohibiting left-turns eliminates the left turn phase, which results in more green time for other movements.
- Improves delay and LOS along Rand Road, IL 83, and Kensington Road.

Disadvantages:

- Additional right-of-way will be required for installation of the turnarounds.
- Reconfiguration of Home Depot's truck access will be required.
- Conflicts with the potential development within the vacant parcel located along the east side of Rand Road north of Highland Street.
- Will impact the planned development along the south side of Kensington Road east of Rand Road.
- Emergency access to Elmhurst Avenue is compromised.
- Increase in travel time for motorists desiring to make left-turns at the intersections.
- Potential for an increase in motorists using residential streets or parking lots as a result of eliminating left-turns from Kensington Road, Rand Road, and IL 83.
- Forces vehicles desiring to make a left-turn from IL 83 to Kensington Road to make a left-turn at its intersection with Highland Street. Installation of a left-turn lane on IL 83 at Highland Street would be required.

Alternative 4A is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 5

Alternative 5 involves the removal of the left-turn lanes on Rand Road and Kensington Road at the project intersections. The left-turn lanes along IL 83 at its intersections with Rand Road and Kensington Road will remain. To accommodate the vehicles desiring to make left-turns from Rand Road and Kensington Road, ring roads are proposed instead of turnarounds.

Summary:
There is a significant increase in delay and LOS for the IL 83/Rand Road and Rand Road/Kensington Road intersections compared to the No-Build Alternative. In addition, extensive right-of-way would be required to implement this Alternative. See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- Prohibiting left-turns eliminates the "oncoming traffic has longer green" situation.
- Prohibiting left-turns reduces the potential for accidents caused by left-turning vehicles.
- Prohibiting left-turns eliminates the left turn phase, which results in more green time for other movements.

Disadvantages:

- Additional right-of-way will be required for installation of the ring roads.
- Additional traffic signals may be required at the ring road intersections.
- Installation of the ring road to the east will impact the planned development along the south side of Kensington Road east of Rand Road.
- Residents located along Elmhurst Avenue may be opposed to the additional traffic.
- Increase in travel time for motorists deserving to make left-turns from Kensington Road and Rand Road.

Alternative 5 is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents.

Alternative 6

Alternative 6 is a roadway grade separation alternative. As part of this alternative, it was decided to grade separate the roadway with the highest average daily traffic (ADT) to achieve the greatest benefit. As such, this alternative involves the construction of a bridge that will carry Rand Road over IL 83 and Kensington Road. All movements between IL 83 and Kensington Road would remain, but there would be no connection at all between Rand Road and the other two roadways of IL 83 and Kensington Road. Ring roads would be installed to accommodate vehicles traveling to/from Rand Road to connect to the other two roadways.

Summary:

This alternative impacts access to the local businesses that utilize Rand Road for their access. It also will require displacement of businesses in order to install the ring roads. However, installation of the bridge will result in only one intersection with all movements operating at an acceptable LOS "B". See Table 1 in Appendix 2 for results of the high-level analysis.

Advantages:

- The one remaining at-grade intersection at IL 83 and Kensington Road will operate much more efficiently.

Disadvantages:

- Very high cost associated with the construction of the bridge to carry Rand Road over the other two roadways.
- Access to the businesses along Rand Road will be severely impacted.
- Additional right-of-way will be required for installation of the ring road.
- Additional traffic signals may be required at the ring road intersections.
- Installation of the ring road to the east will impact the planned development along the south side of Kensington Road east of Rand Road.
- Residents located along Elmhurst Avenue may be opposed to the additional traffic that would be traveling on the ring road.

Alternative 6 is not recommended to be carried forward because of the significant impacts to the adjacent businesses and residents and due to significant costs.

Alternative 7 (Not Illustrated)
Alternative 7 involves installation of a roundabout to accommodate all six legs of the intersection. According to high level capacity analysis, three lanes or more would be required for the approaches to the roundabout, which is impractical and not consistent with driver expectation in the northeast Illinois region.

Alternative 7 is not recommended to be carried forward because three lanes within the roundabout will be required, which is impractical and not consistent with driver expectation in the northeast Illinois region.

IV. SUMMARY OF RESULTS

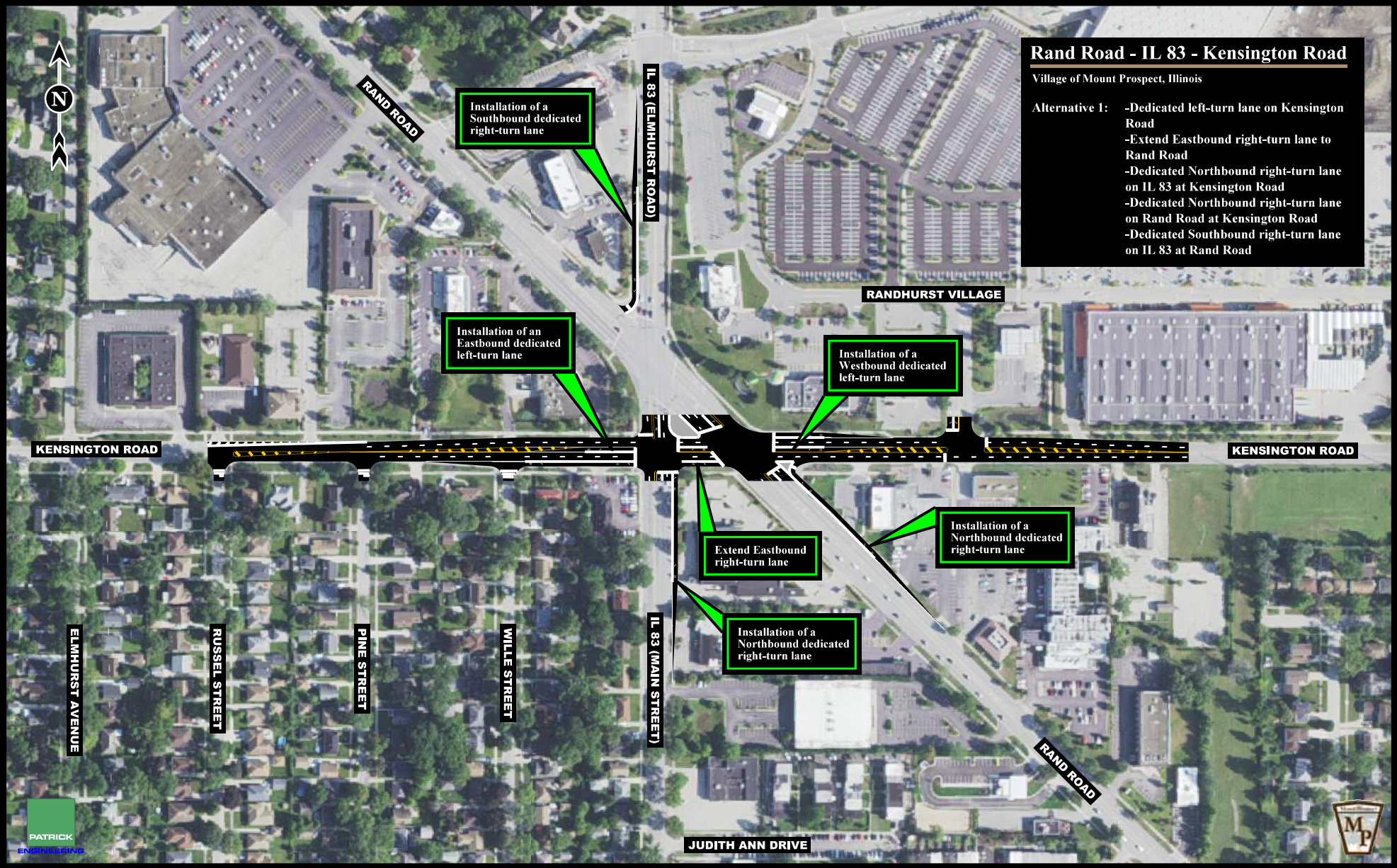
In comparison to the baseline condition (no-build with year 2040 traffic volumes), Alternatives 2, 2A, 3, 3A, 4, 4A, 5, 6, and 7 had the greatest impact to the adjacent businesses, residents and right-of-way. On this basis, these alternatives are not recommended to be considered further because they provide limited benefit when compared to their impacts.

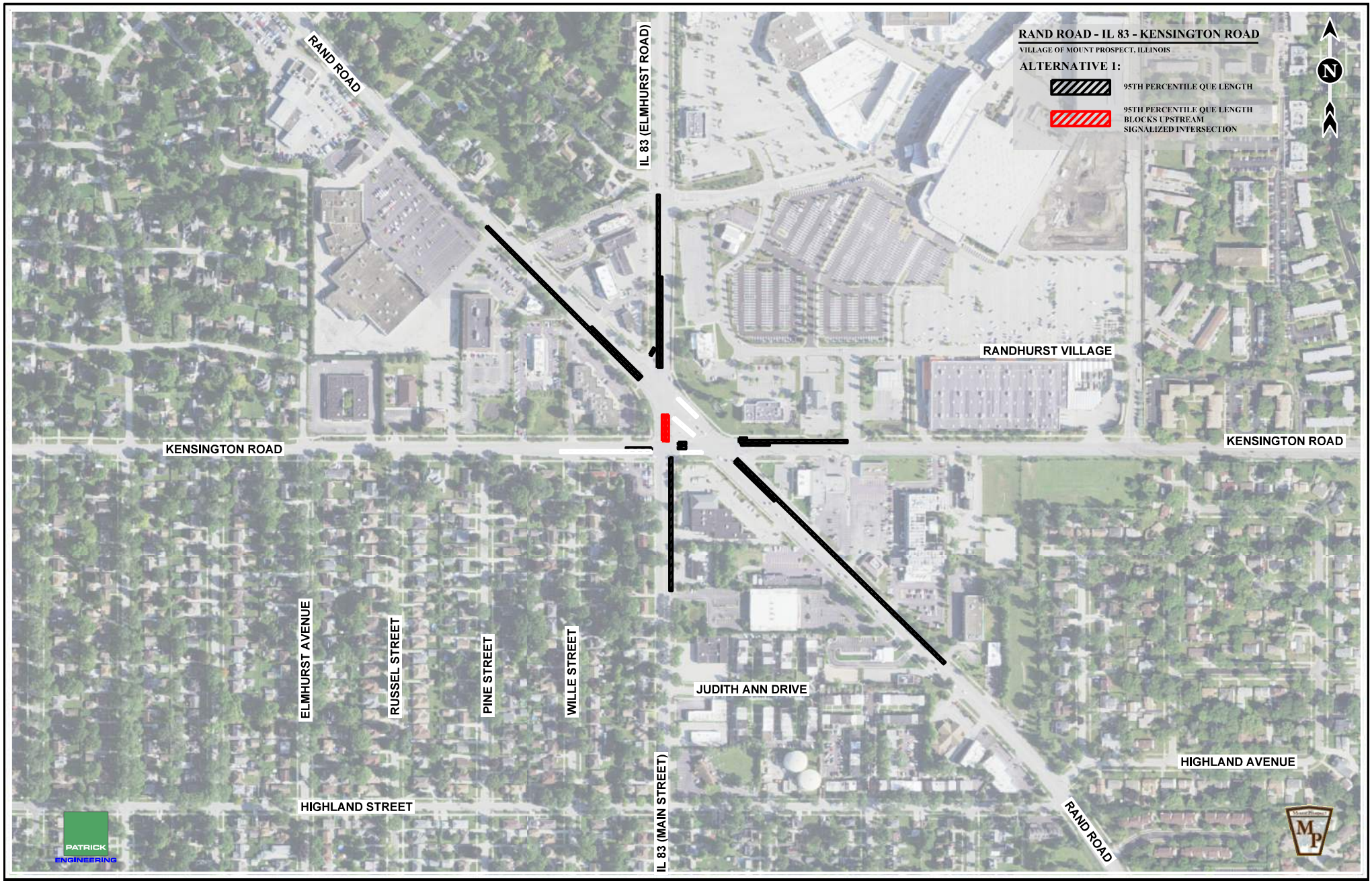
Alternatives 1, 1A, and 1B remain under consideration and have been further evaluated. A more detailed alternative evaluation table was developed for these alternatives and is included in Appendix 3.

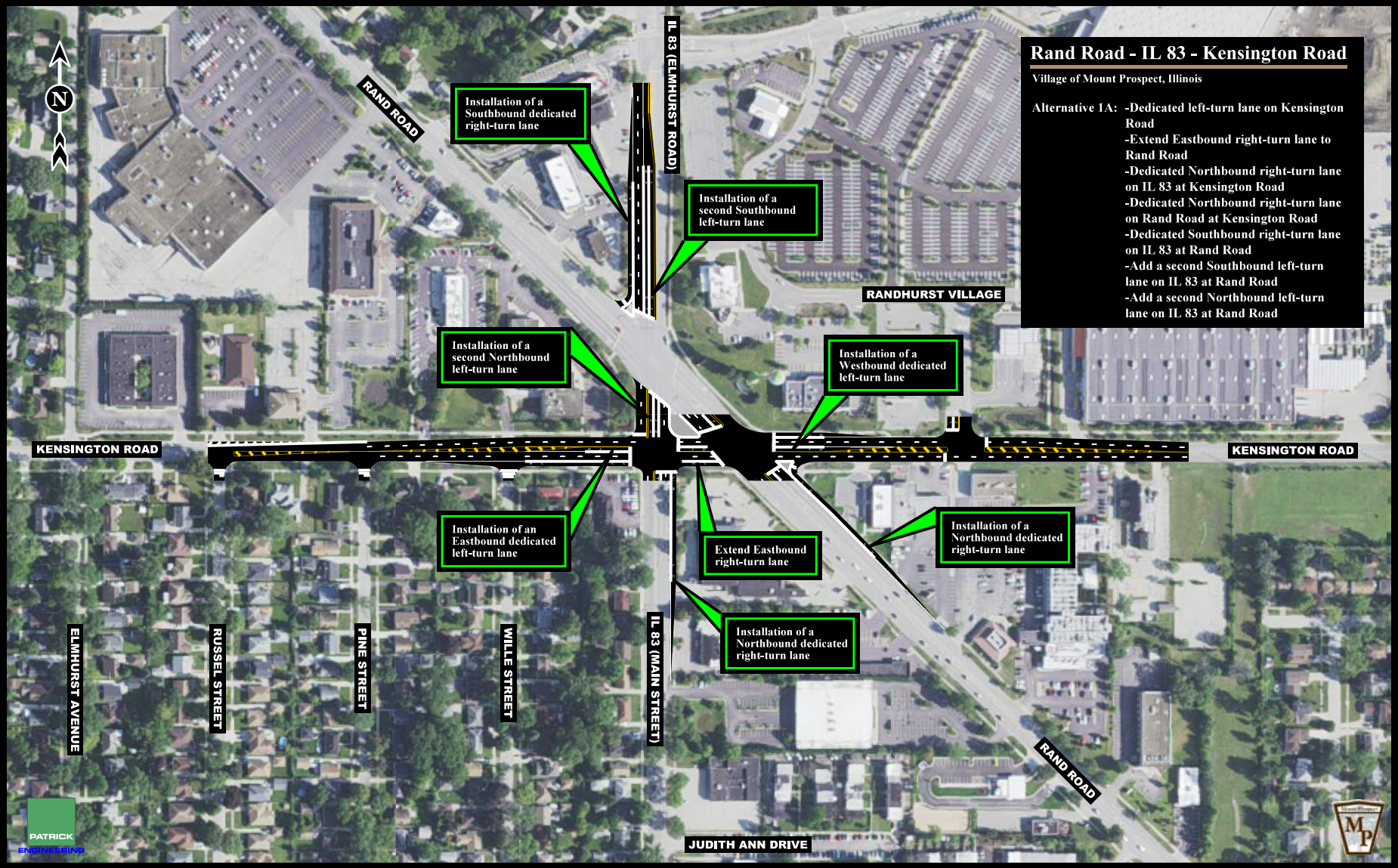
V. NEXT STEPS

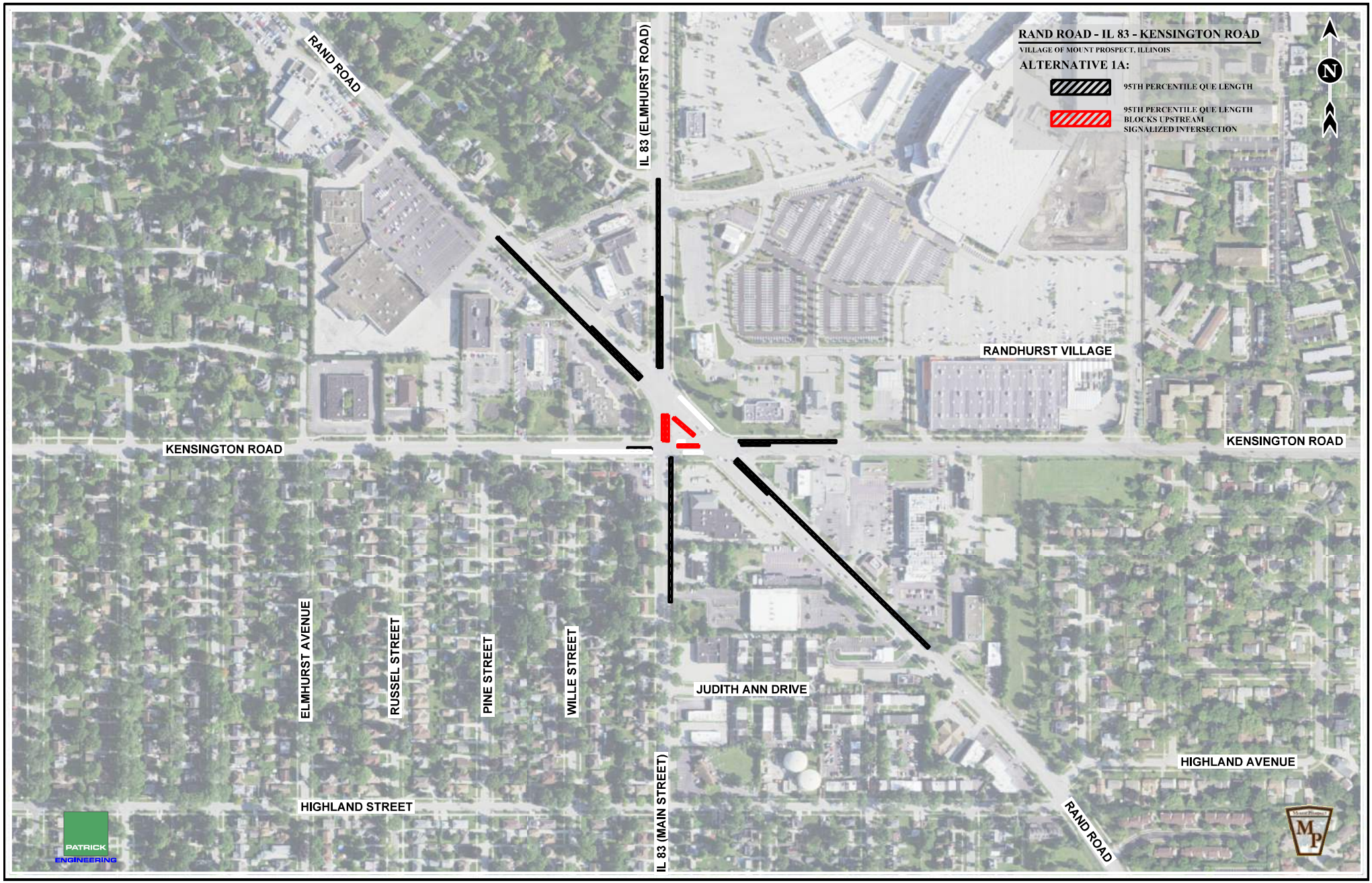
Further coordination of Alternatives 1, 1A, and 1B with Village staff and the Village Board is planned. Based on the coordination, a recommended alternative will be identified and will be presented at a second Public Information Meeting for all project stakeholders to have opportunity to review and comment on the overall alternatives evaluation process and results. Subsequent to the Public Information Meeting #2, detailed engineering plans and studies will be developed for the preferred alternative and will be coordinated with IDOT and the FHWA for review and approval of the Phase I Study.

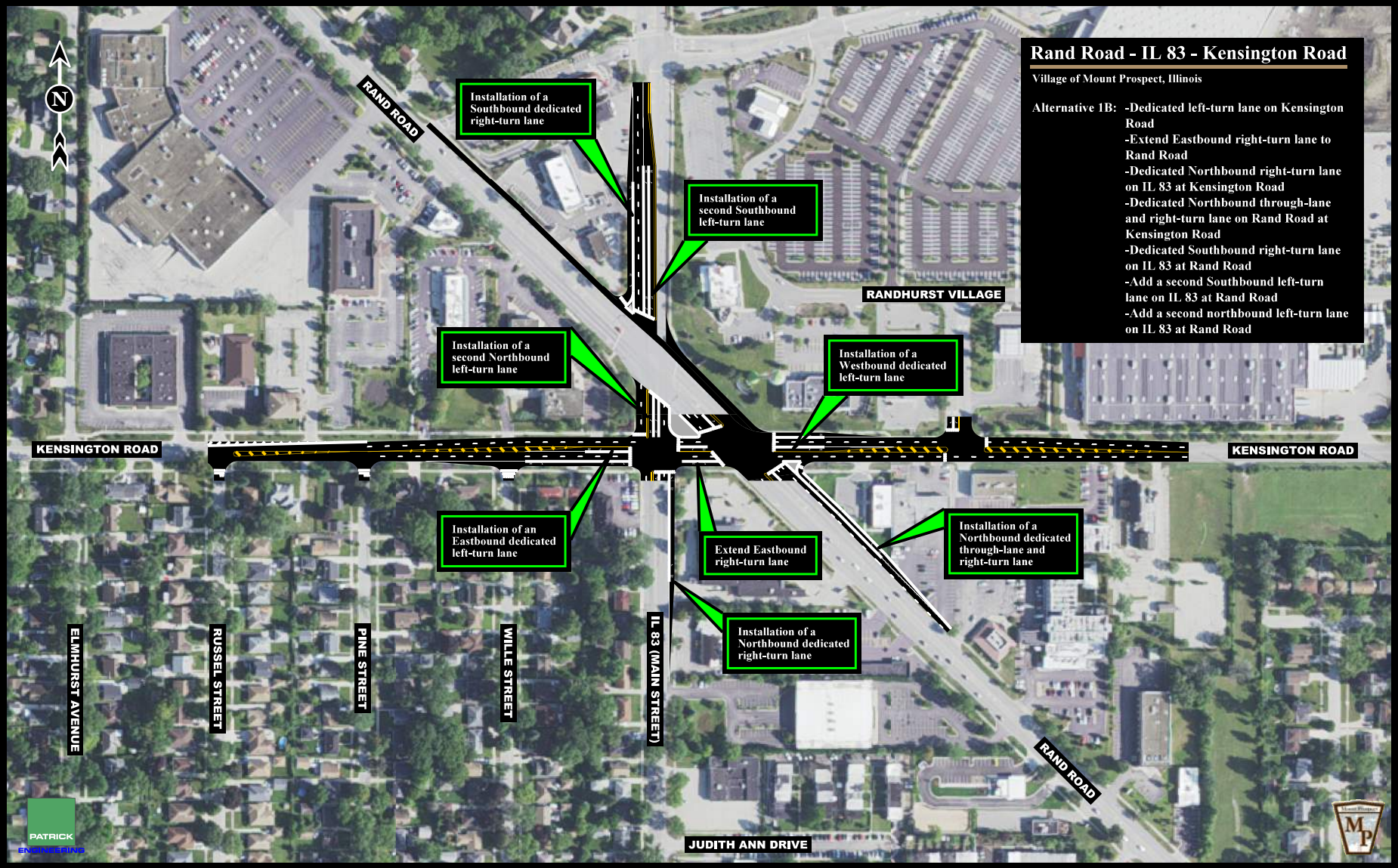
Appendix 1
Range of Alternatives Exhibits


Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 1:
-Dedicated left-turn lane on Kensington Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Northbound right-turn lane on IL 83 at Kensington Road
-Dedicated Northbound right-turn lane on Rand Road at Kensington Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
N
RAND ROAD
IL 83 (ELMHURST ROAD)
Installation of a Southbound dedicated right-turn lane
RANDHURST VILLAGE
Installation of an Eastbound dedicated left-turn lane
Installation of a Westbound dedicated left-turn lane
KENSINGTON ROAD
KENSINGTON ROAD
Installation of a Northbound dedicated right-turn lane
Extend Eastbound right-turn lane
Installation of a Northbound dedicated right-turn lane
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
RAND ROAD
JUDITH ANN DRIVE
PATRICK
ENGINEERING

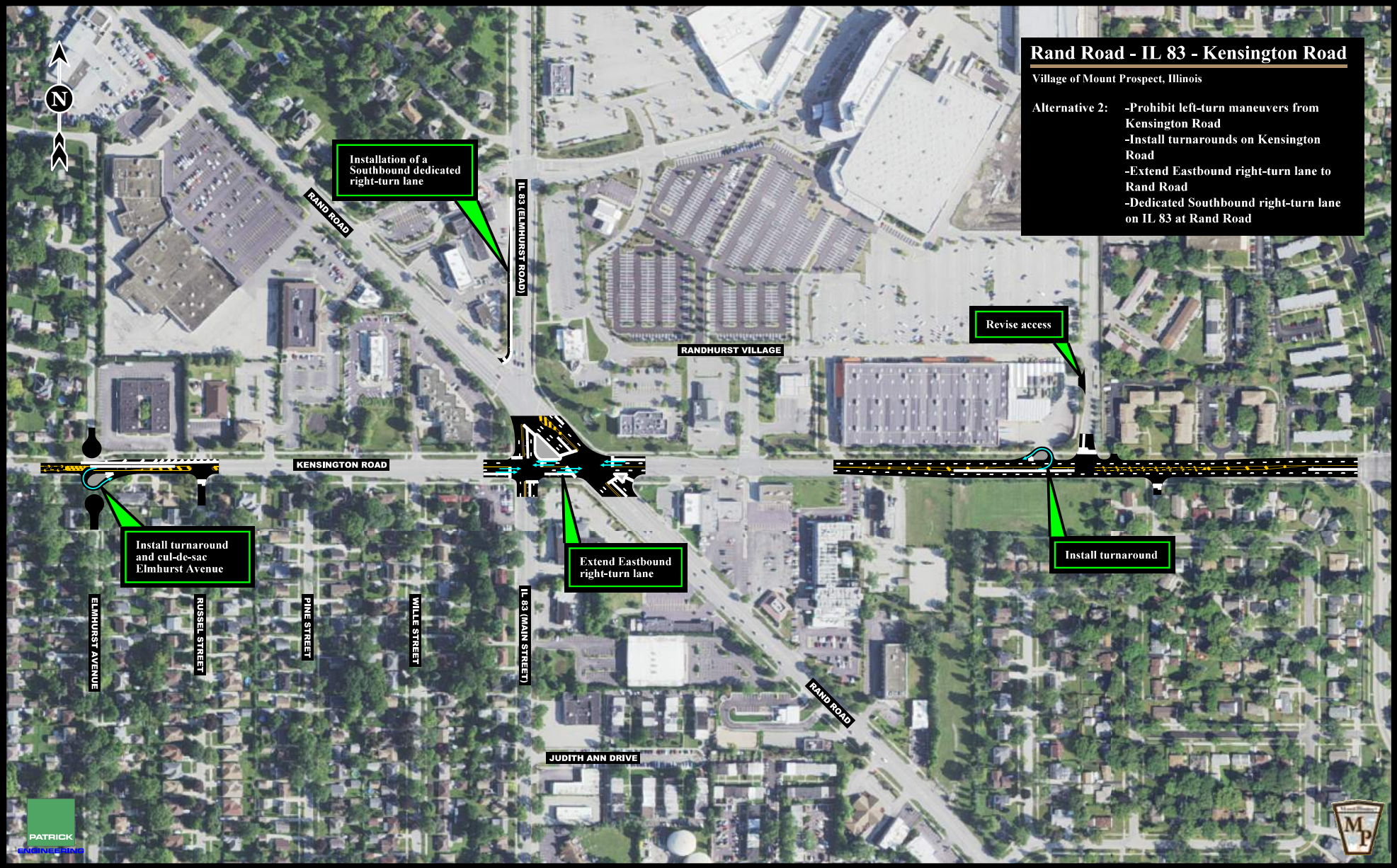

RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 1:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

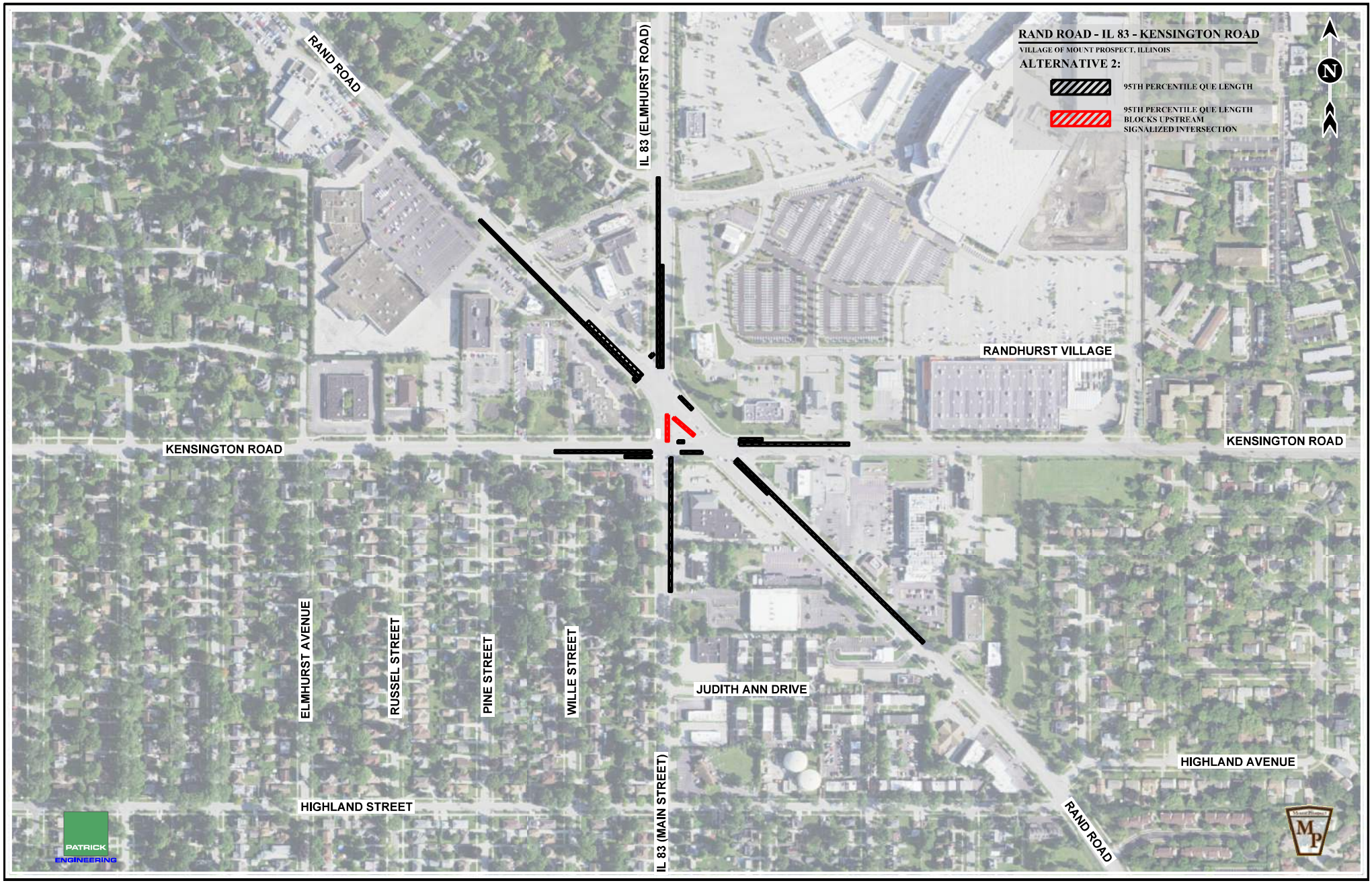

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 1A: -Dedicated left-turn lane on Kensington Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Northbound right-turn lane on IL 83 at Kensington Road
-Dedicated Northbound right-turn lane on Rand Road at Kensington Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
-Add a second Southbound left-turn lane on IL 83 at Rand Road
-Add a second Northbound left-turn lane on IL 83 at Rand Road
N
RAND ROAD
IL 83 (ELMHURST ROAD)
Installation of a Southbound dedicated right-turn lane
Installation of a second Southbound left-turn lane
RANDHURST VILLAGE
Installation of a second Northbound left-turn lane
Installation of a Westbound dedicated left-turn lane
KENSINGTON ROAD
KENSINGTON ROAD
Installation of an Eastbound dedicated left-turn lane
Extend Eastbound right-turn lane
Installation of a Northbound dedicated right-turn lane
Installation of a Northbound dedicated right-turn lane
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
RAND ROAD
JUDITH ANN DRIVE
PATRICK ENGINEERING

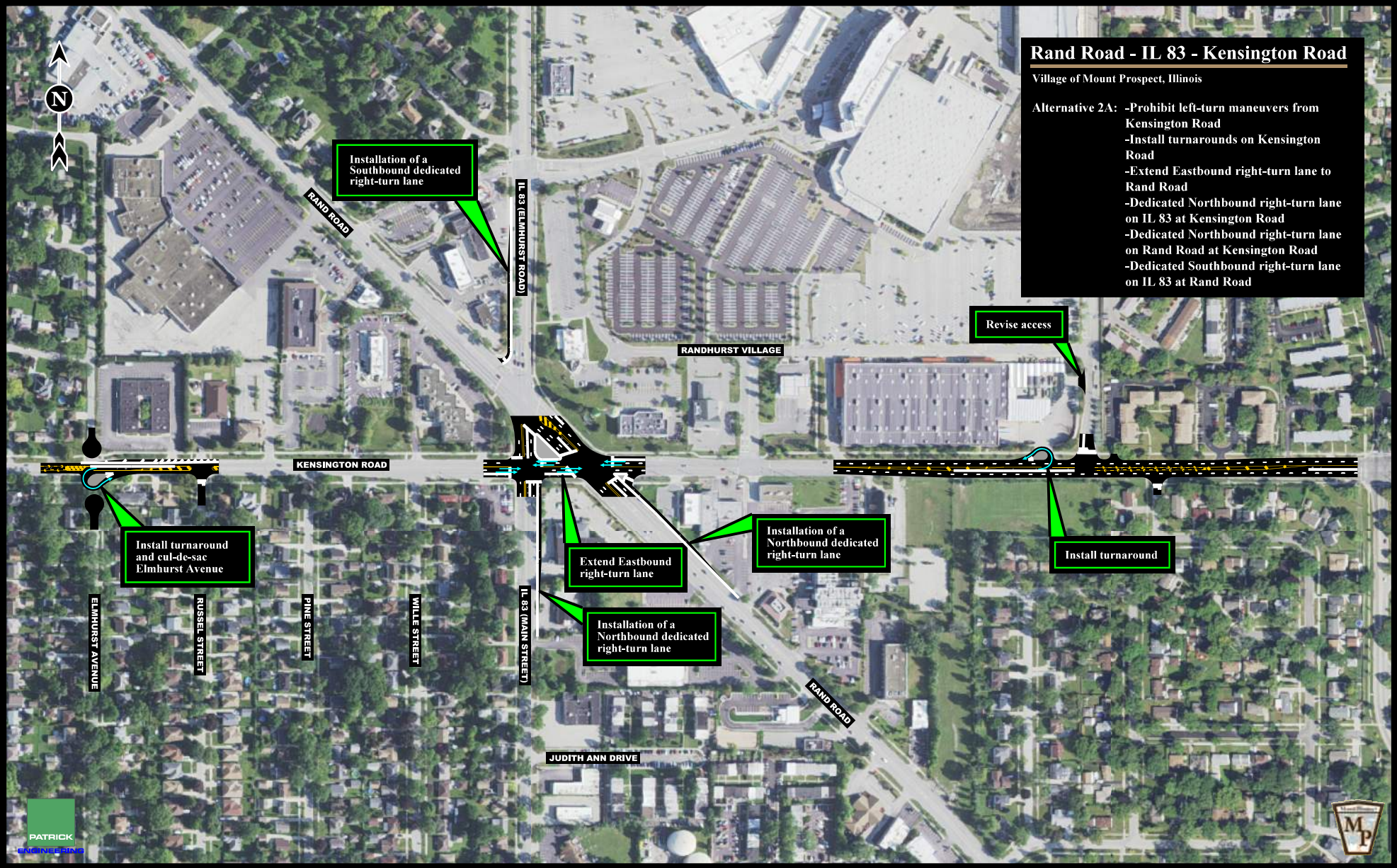

RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 1A:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

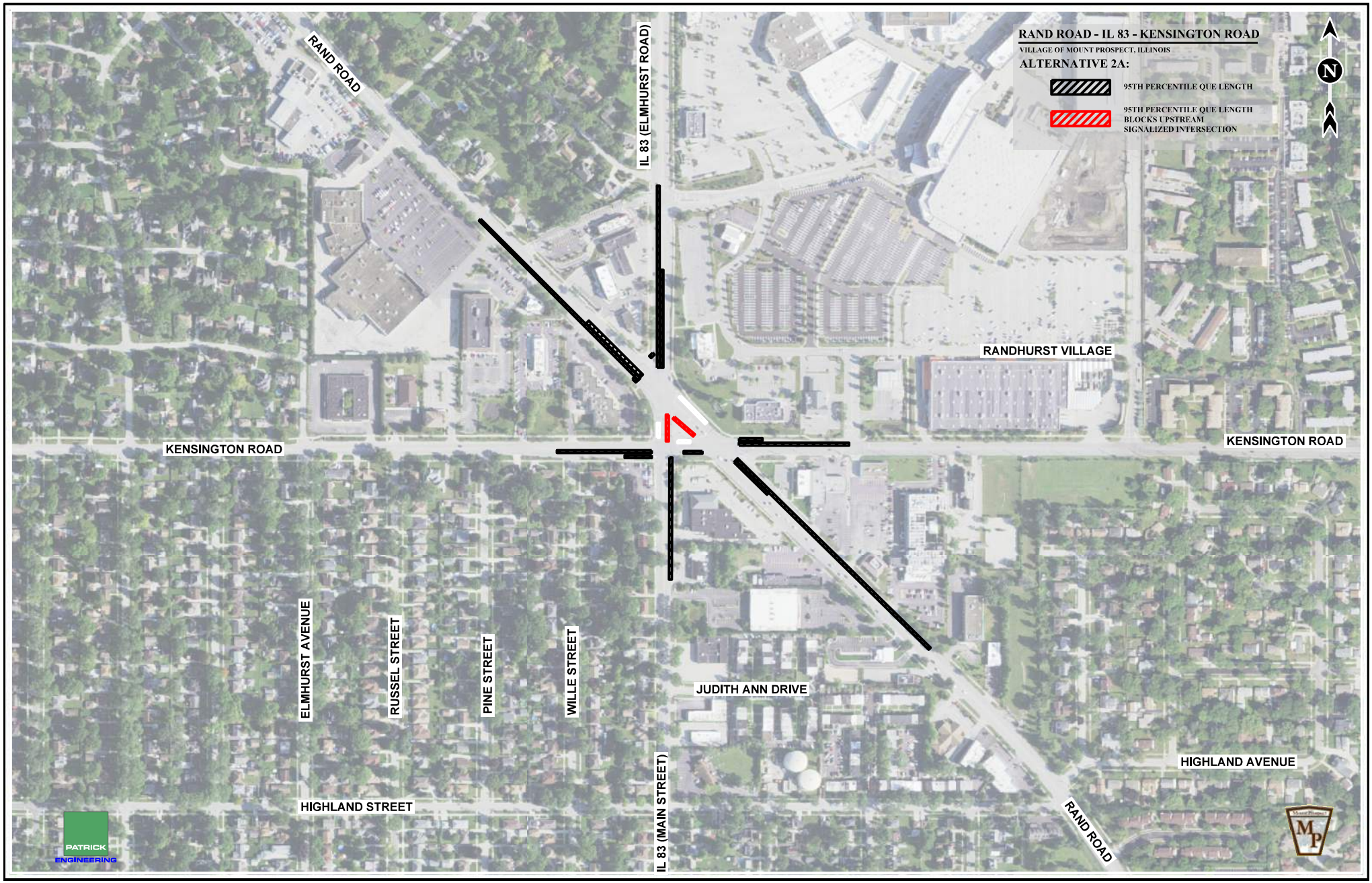

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 1B: -Dedicated left-turn lane on Kensington Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Northbound right-turn lane on IL 83 at Kensington Road
-Dedicated Northbound through-lane and right-turn lane on Rand Road at Kensington Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
-Add a second Southbound left-turn lane on IL 83 at Rand Road
-Add a second northbound left-turn lane on IL 83 at Rand Road
N
RAND ROAD
Installation of a Southbound dedicated right-turn lane
Installation of a second Southbound left-turn lane
RANDHURST VILLAGE
Installation of a second Northbound left-turn lane
Installation of a Westbound dedicated left-turn lane
KENSINGTON ROAD
KENSINGTON ROAD
Installation of an Eastbound dedicated left-turn lane
Extend Eastbound right-turn lane
Installation of a Northbound dedicated through-lane and right-turn lane
Installation of a Northbound dedicated right-turn lane
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
RAND ROAD
JUDITH ANN DRIVE
PATRICK ENGINEERING

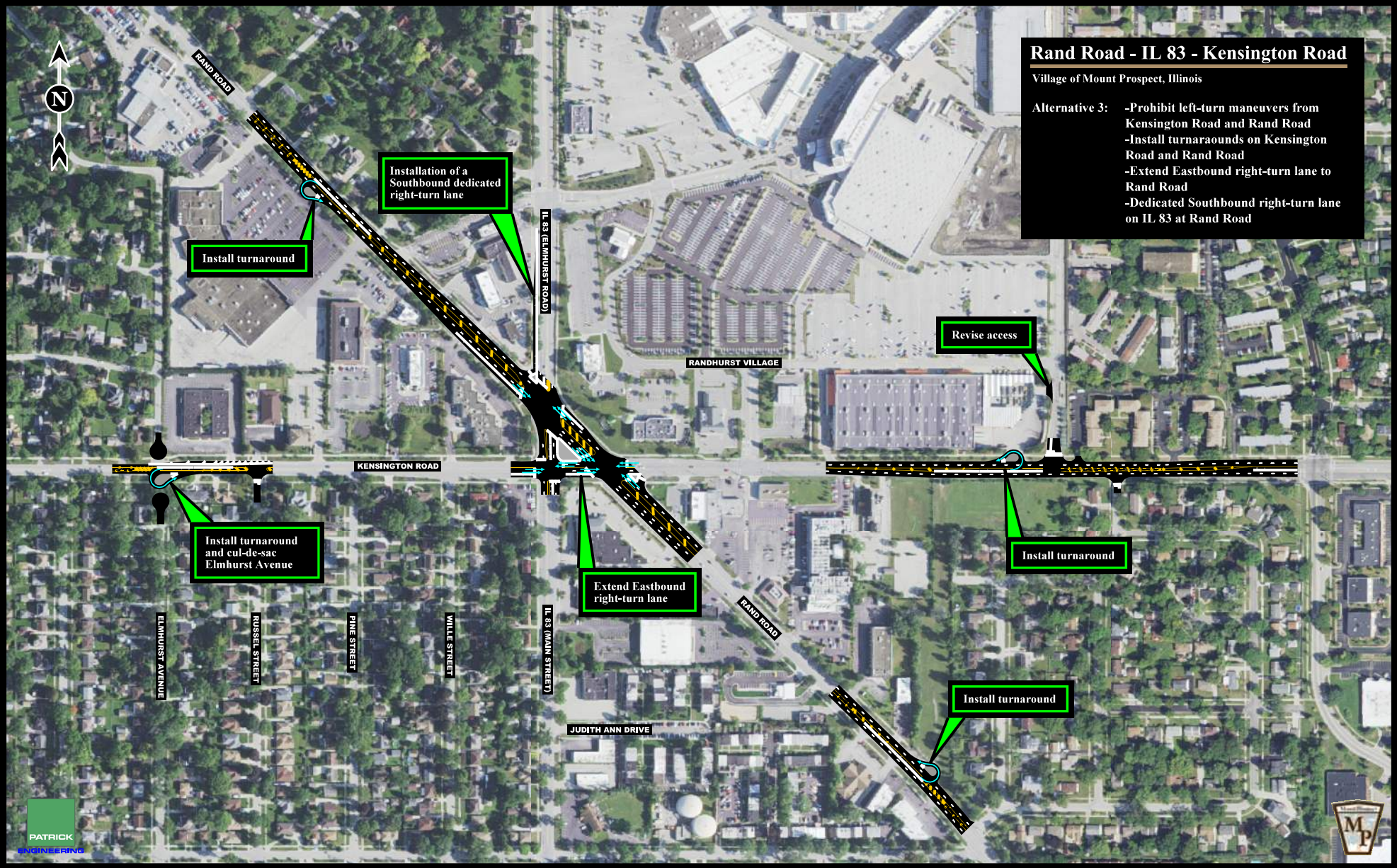
RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 1B:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

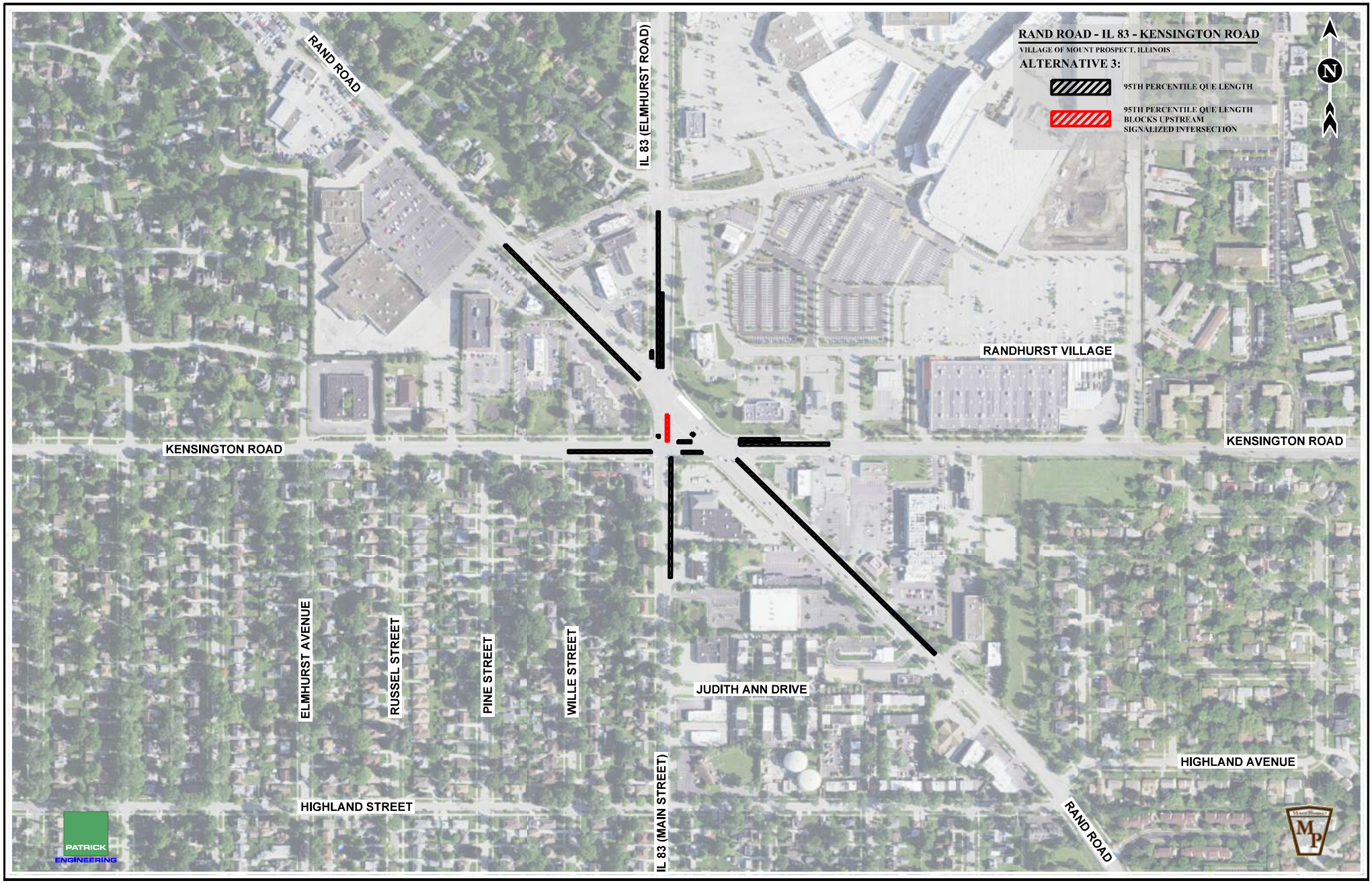

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 2:
-Prohibit left-turn maneuvers from Kensington Road
-Install turnarounds on Kensington Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
N
Installation of a Southbound dedicated right-turn lane
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
Revise access
KENSINGTON ROAD
Install turnaround and cul-de-sac Elmhurst Avenue
Extend Eastbound right-turn lane
Install turnaround
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
RAND ROAD
JUDITH ANN DRIVE
PATRICK ENGINEERING

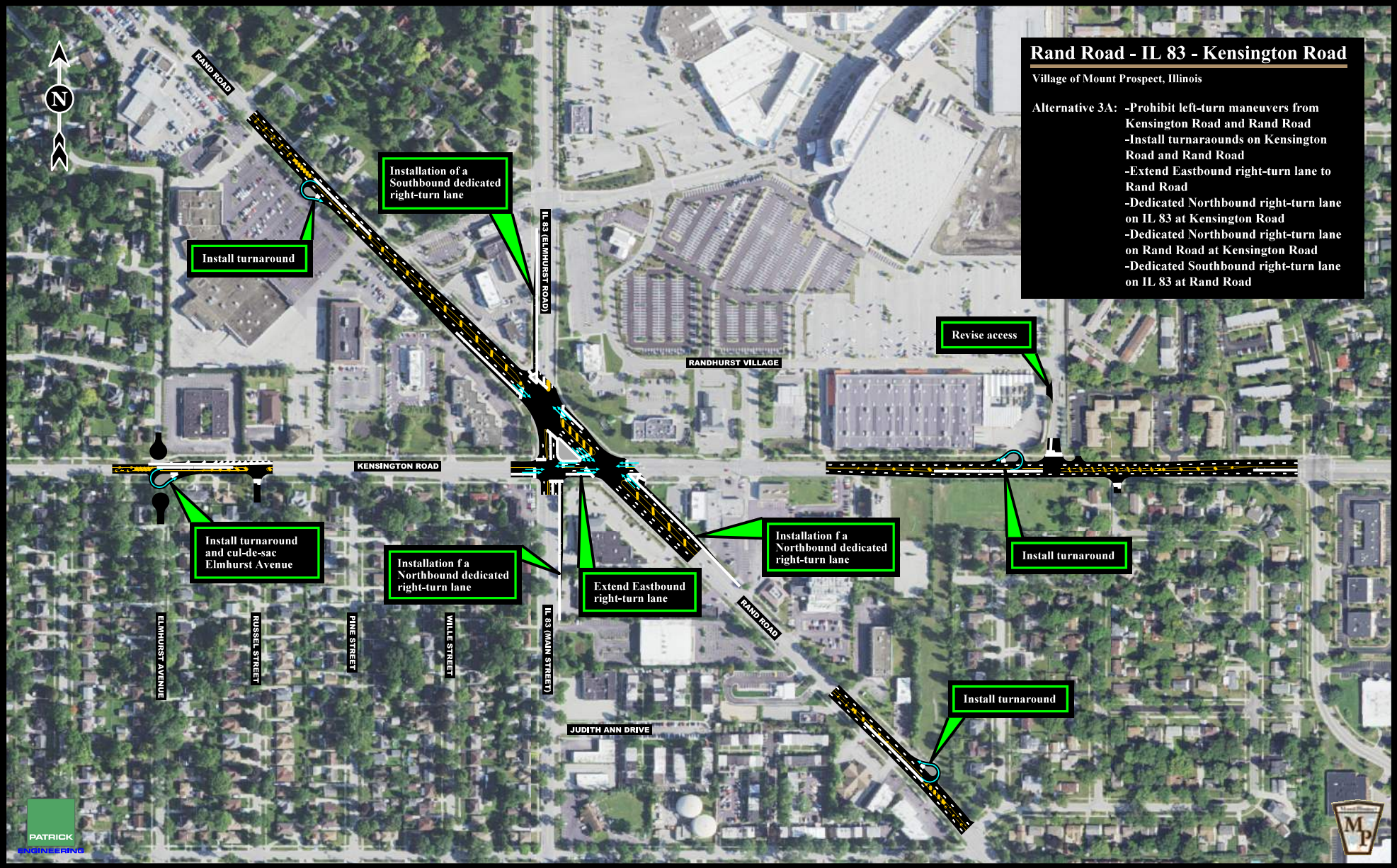

RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 2:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

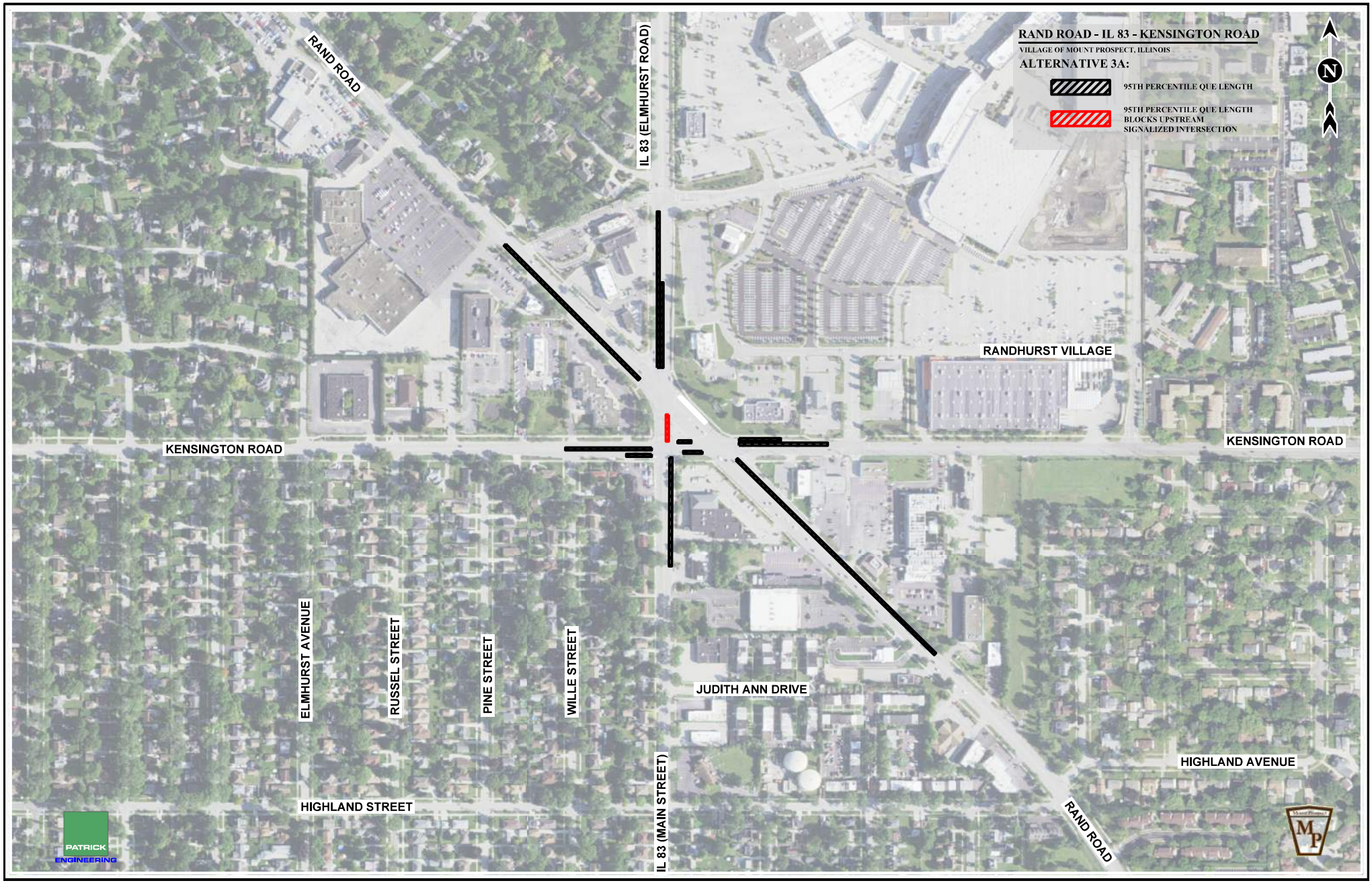

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 2A: -Prohibit left-turn maneuvers from Kensington Road
-Install turnarounds on Kensington Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Northbound right-turn lane on IL 83 at Kensington Road
-Dedicated Northbound right-turn lane on Rand Road at Kensington Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
N
Installation of a Southbound dedicated right-turn lane
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
Revise access
KENSINGTON ROAD
Install turnaround and cul-de-sac Elmhurst Avenue
Extend Eastbound right-turn lane
Installation of a Northbound dedicated right-turn lane
Install turnaround
Installation of a Northbound dedicated right-turn lane
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
RAND ROAD
JUDITH ANN DRIVE
PATRICK ENGINEERING

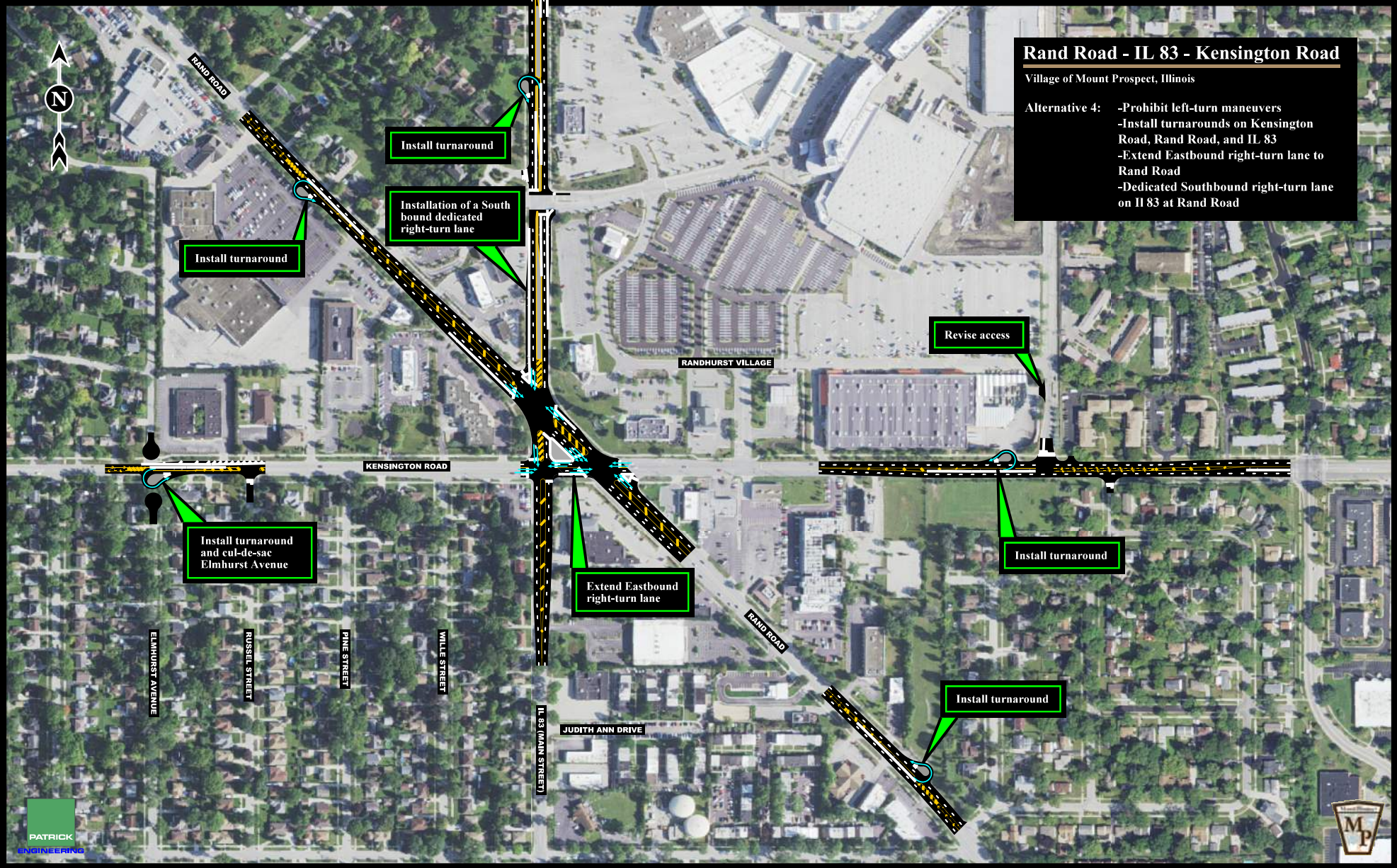

RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 2A:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

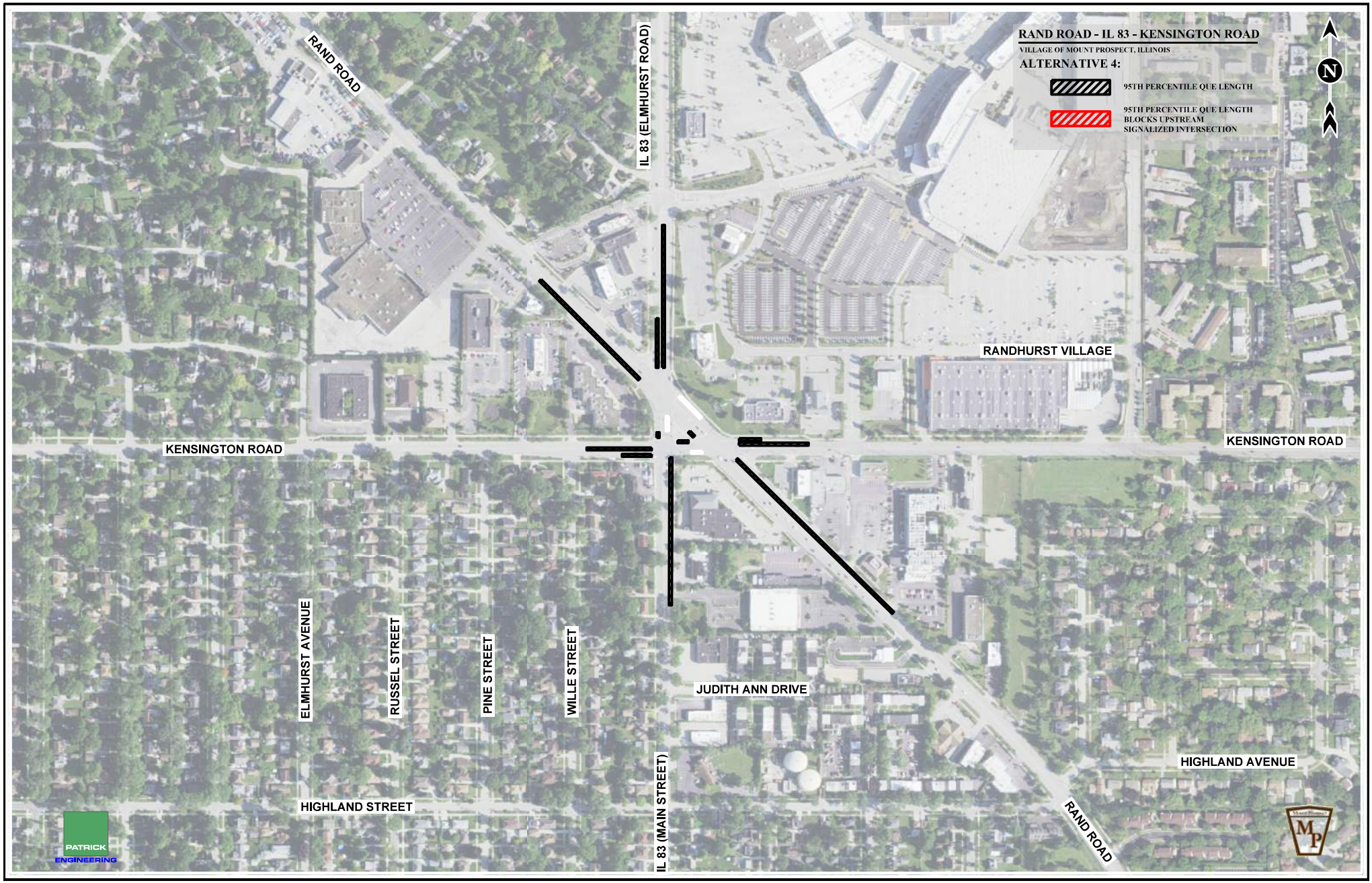

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 3:
-Prohibit left-turn maneuvers from Kensington Road and Rand Road
-Install turnaraounds on Kensington Road and Rand Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
N
RAND ROAD
Installation of a Southbound dedicated right-turn lane
Install turnaround
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
Revise access
KENSINGTON ROAD
Install turnaround and cul-de-sac Elmhurst Avenue
Extend Eastbound right-turn lane
Install turnaround
RAND ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
Install turnaround
JUDITH ANN DRIVE
PATRICK
ENGINEERING

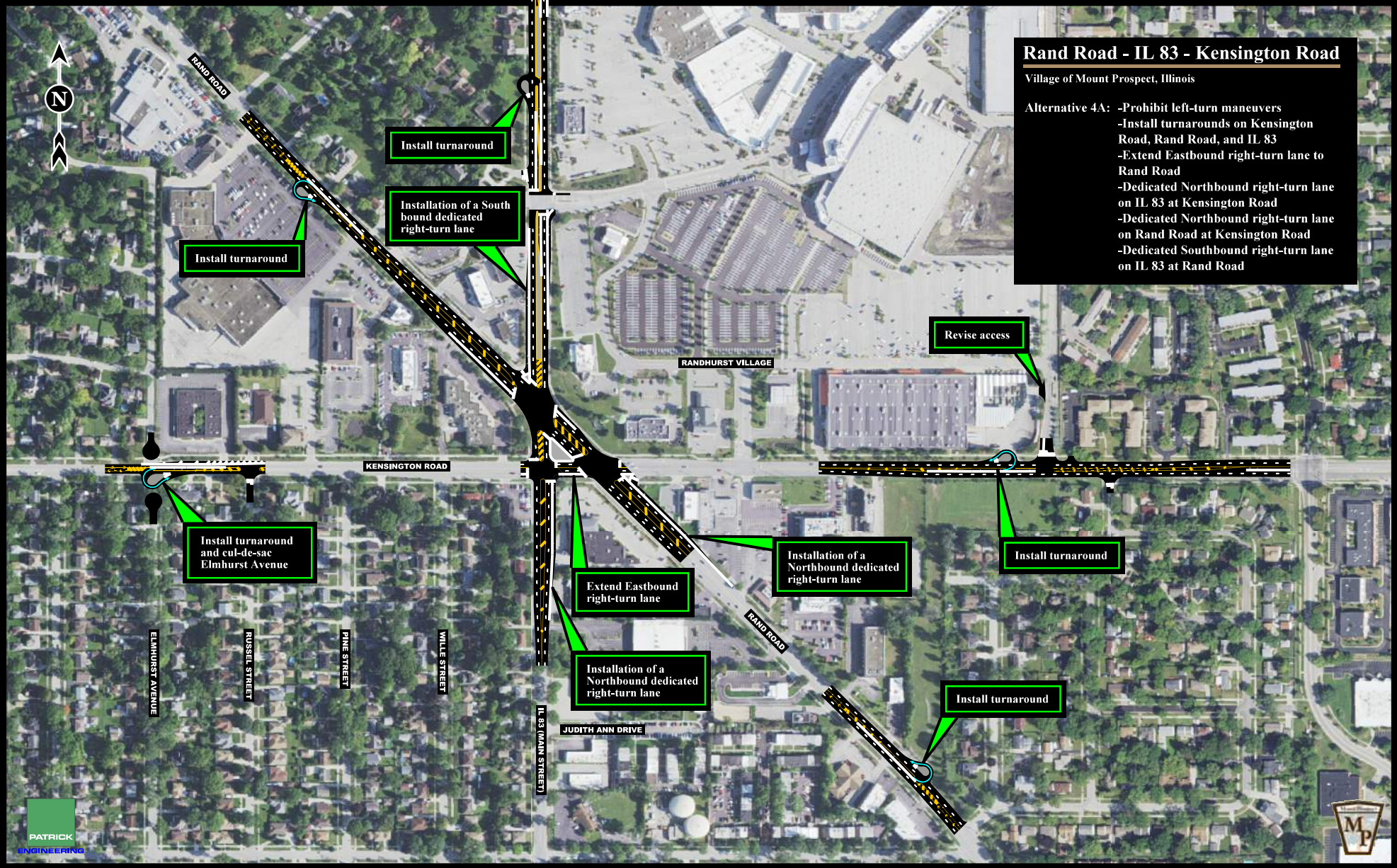

RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 3:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

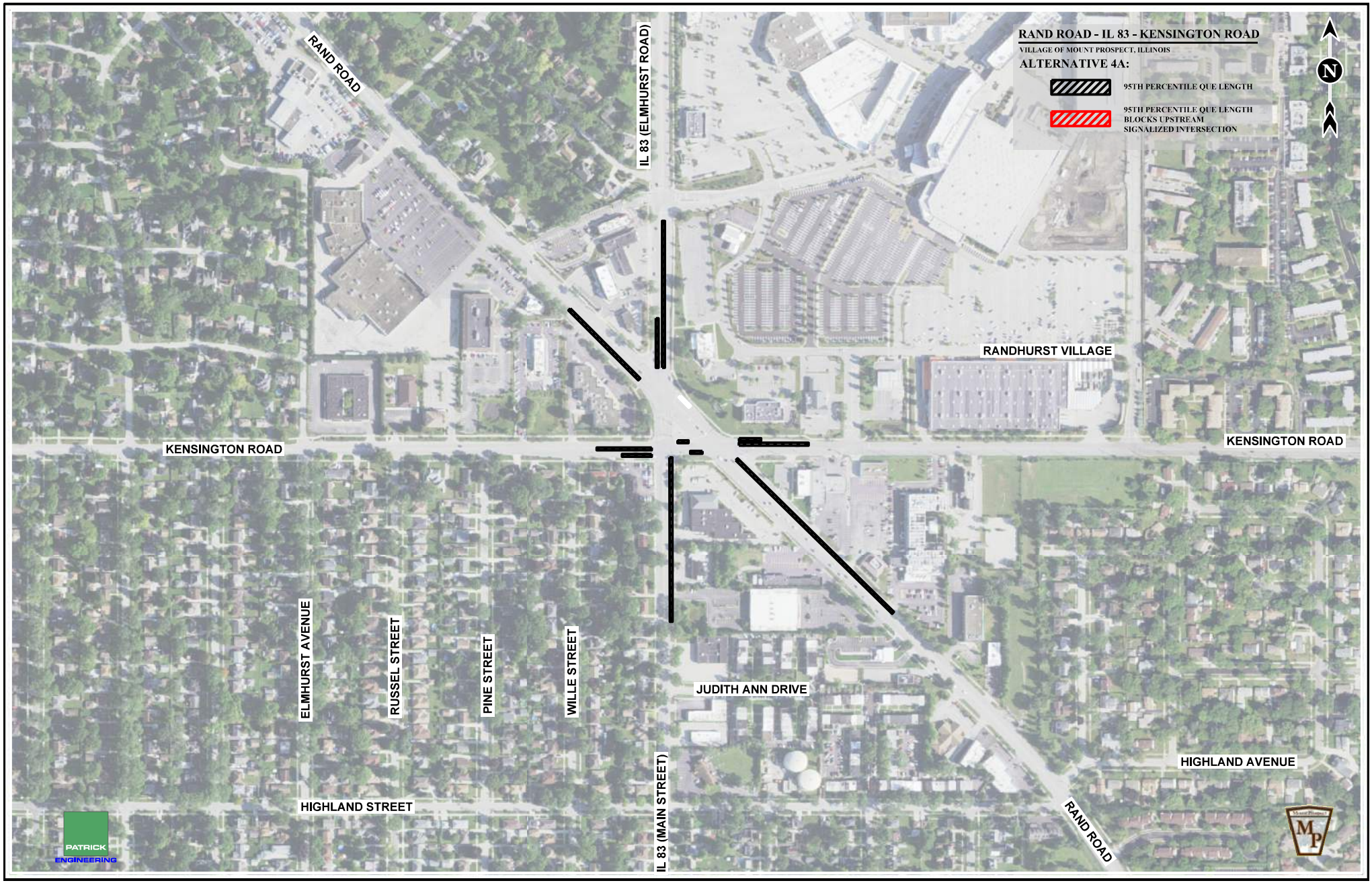

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 3A: -Prohibit left-turn maneuvers from Kensington Road and Rand Road
-Install turnaraounds on Kensington Road and Rand Road
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Northbound right-turn lane on IL 83 at Kensington Road
-Dedicated Northbound right-turn lane on Rand Road at Kensington Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
N
RAND ROAD
Installation of a Southbound dedicated right-turn lane
Install turnaround
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
Revise access
KENSINGTON ROAD
Install turnaround and cul-de-sac Elmhurst Avenue
Installation f a Northbound dedicated right-turn lane
Extend Eastbound right-turn lane
Installation f a Northbound dedicated right-turn lane
Install turnaround
RAND ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
Install turnaround
JUDITH ANN DRIVE
PATRICK ENGINEERING


RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 3A:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING


Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 4:
-Prohibit left-turn maneuvers
-Install turnarounds on Kensington Road, Rand Road, and IL 83
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Southbound right-turn lane on Il 83 at Rand Road
N
RAND ROAD
Install turnaround
Installation of a South bound dedicated right-turn lane
Install turnaround
Revise access
RANDHURST VILLAGE
KENSINGTON ROAD
Install turnaround and cul-de-sac Elmhurst Avenue
Extend Eastbound right-turn lane
Install turnaround
RAND ROAD
Install turnaround
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
JUDITH ANN DRIVE
PATRICK ENGINEERING


RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 4:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING


Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 4A: -Prohibit left-turn maneuvers
-Install turnarounds on Kensington Road, Rand Road, and IL 83
-Extend Eastbound right-turn lane to Rand Road
-Dedicated Northbound right-turn lane on IL 83 at Kensington Road
-Dedicated Northbound right-turn lane on Rand Road at Kensington Road
-Dedicated Southbound right-turn lane on IL 83 at Rand Road
N
RAND ROAD
Install turnaround
Installation of a South bound dedicated right-turn lane
Install turnaround
RANDHURST VILLAGE
Revise access
KENSINGTON ROAD
Install turnaround and cul-de-sac Elmhurst Avenue
Extend Eastbound right-turn lane
Installation of a Northbound dedicated right-turn lane
Install turnaround
RAND ROAD
Installation of a Northbound dedicated right-turn lane
Install turnaround
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
IL 83 (MAIN STREET)
JUDITH ANN DRIVE
PATRICK ENGINEERING


RAND ROAD - IL 83 - KENSINGTON ROAD
VILLAGE OF MOUNT PROSPECT, ILLINOIS
ALTERNATIVE 4A:
95TH PERCENTILE QUE LENGTH
95TH PERCENTILE QUE LENGTH BLOCKS UPSTREAM SIGNALIZED INTERSECTION
N
RAND ROAD
IL 83 (ELMHURST ROAD)
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
JUDITH ANN DRIVE
HIGHLAND AVENUE
HIGHLAND STREET
IL 83 (MAIN STREET)
RAND ROAD
PATRICK ENGINEERING

Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 5: Prohibit left-turn maneuvers from Kensington Road and Rand Road / Install ring roads
Proposed Traffic Signal
N
RAND ROAD
IL 83 (ELMHURST ROAD)
Install ring road
RANDHURST VILLAGE
KENSINGTON ROAD
KENSINGTON ROAD
Extend Eastbound right-turn lane
Install ring road
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
RAND ROAD
IL 83 (MAIN STREET)
JUDITH ANN DRIVE
PATRICK ENGINEERING

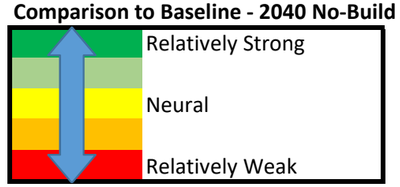
Rand Road - IL 83 - Kensington Road
Village of Mount Prospect, Illinois
Alternative 6: -Construct Bridge along Rand Rd over Kensington Road and IL 83
-Install ring roads
Proposed Traffic Signal
N
RAND ROAD
IL 83 (ELMHURST ROAD)
Install ring road
540'
Construct Bridge over Kensington Road and IL 83
RANDHURST VILLAGE
KENSINGTON ROAD
540'
KENSINGTON ROAD
Install ring road
ELMHURST AVENUE
RUSSEL STREET
PINE STREET
WILLE STREET
RAND ROAD
IL 83 (MAIN STREET)
JUDITH ANN DRIVE
PATRICK
ENGINEERING

Appendix 2
High-Level
Evaluation Summary Table

Table 1 - Alternatives Evaluation Summary

Option	IL Route 83 at Kensington Road						IL Route 83 at Rand Road						Rand Road at Kensington Road						Planning Level Construction Cost
	Overall Intersection						Overall Intersection						Overall Intersection						
	AM Peak Hour		PM Peak Hour		Sat Peak Hour		AM Peak Hour		PM Peak Hour		Sat Peak Hour		AM Peak Hour		PM Peak Hour		Sat Peak Hour		
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	
Existing Conditions	D	38.3	D	42.2	D	35.7	E	57.3	D	43.3	D	41.6	C	29.3	E	66.8	D	49.4	
2040 No-Build Alternative	D	39.4	D	43.7	D	36.8	E	60.5	D	47.5	D	43.1	C	29.6	E	71.1	D	52.2	
Alternative 1	D	40.9	D	42.4	D	41.9	D	54.1	D	48.1	D	44.1	C	29.0	E	56.3	D	47.5	$3.5 - 5 M
Alternative 1A	D	47.9	D	44.8	D	43.7	E	57.0	D	51.4	D	48.1	C	27.7	D	52.7	D	42.0	$3.5 - 5 M
Alternative 1B	D	42.5	D	40.5	D	35.3	D	51.3	D	39.5	D	40.7	C	27.8	D	46.9	D	40.7	$4.5 - 6 M
Alternative 2	D	40.0	D	37.2	D	35.5	E	55.4	D	53.0	D	43.6	C	24.7	D	50.8	D	38.2	$3 - 4.5 M
Alternative 2A	D	37.4	C	34.0	C	31.6	E	55.4	D	48.7	D	44.2	C	25.1	D	52.8	D	36.4	$3.5 - 5 M
Alternative 3	C	32.8	C	32.3	C	32.6	D	41.8	D	39.1	C	31.0	C	21.8	D	44.7	D	36.2	$5.5 - 7 M
Alternative 3A	C	31.0	C	30.3	C	30.2	D	41.7	D	38.5	C	31.5	C	22.0	D	45.0	D	36.4	$6 - 7.5 M
Alternative 4	C	28.0	C	31.4	C	29.2	C	26.9	C	22.2	B	19.7	B	16.5	C	34.3	C	26.6	$7.5 - 9 M
Alternative 4A	C	25.5	C	31.4	C	24.2	C	26.9	C	22.0	B	19.6	B	16.8	C	34.3	C	27.0	$8 - 9.5 M
Alternative 5	D	40.4	D	35.3	D	37.1	E	67.4	E	69.7	D	53.2	C	24.2	F	83.8	D	48.5	$5.5 - 7 M
Alternative 6	B	16.2	B	19.5	B	18.4	-	-	-	-	-	-	-	-	-	-	-	-	$25+M

Comparison to Baseline - 2040 No-Build Alternative



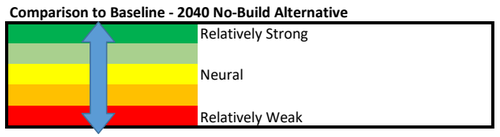
Appendix 3
Evaluation Summary Table

Table 2 - Alternatives Evaluation Summary

Evaluation Criteria	Existing and Baseline Conditions						Alternatives								
	Existing Conditions			2040 No Build Conditions			2040 Alt 1			2040 Alt 1A			2040 Alt 1B		
Overall Study Area	**AM**	**PM**	**SAT**	**AM**	**PM**	**SAT**	**AM**	**PM**	**SAT**	**AM**	**PM**	**SAT**	**AM**	**PM**	**SAT**
Avg Veh Entered	**2006**	**2210**	**2134**	**2087**	**2284**	**2103**	**2101**	**2378**	**2207**	**2080**	**2348**	**2219**	**2064**	**2285**	**2202**
Total Delay (hours)[% decrease compared to 2040 No Build]	65.8	95	72.5	83.8	102.9	83.3	57.8 31%	97.6 5%	72.4 13%	56.7 32%	91.2 11%	71.5 14%	58.4 30%	73.4 29%	64.2 23%
Travel Time (hours)[% decrease compared to 2040 No Build]	89.7	133.6	99.5	110.3	141.9	126.3	83.6 24%	129.7 9%	100.2 21%	83.5 24%	121.7 14%	99.1 22%	86 22%	131 8%	98.6 22%
Avg Speed (mph)	9	8	9	8	7	8	11	8	9	11	8	9	11	10	10
Fuel Used (gal)	47.2	60.4	51	53.2	62.8	57	47.7	61.9	53.1	48	59.1	52.3	47.8	61	52.3
Overall Queuing Penalty[1]	505	706	561	791	771	630	526	903	696	525	1137	855	419	625	575
Arterials (Avg Travel Time - Seconds)															
EB Kensington Rd	154	206.4	163.3	160.6	232.1	190.7	118.9	140.7	130.9	116.5	113.4	114.2	115.7	130.4	121.5
WB Kensington Rd	441.8	842.8	433.7	645.9	802.6	1043.2	110.6	142.3	121.8	115.8	258.4	173.9	110.1	257.3	209.8
NB IL 83	119.5	156.1	129.4	137	163.8	143.6	131.7	200.2	135	134.7	234.2	220	203.7	448.4	228.8
SB IL 83	93.9	110.2	100.4	96.3	113.9	105.2	110.5	182.7	107.4	103.1	158.4	112.8	107.5	120.2	103.5
NW Rand Rd	103.4	148.4	142.4	99.8	181.1	152.2	94.1	177.8	177.9	93.4	130.9	105.9	90.5	103.4	97.9
SE Rand Rd	128	88.5	86.2	179.7	86.6	86.6	116.7	78.1	94.9	112.3	89	83.1	111.1	90.3	94.8
Signalized Intersections (Avg Delay - Seconds)															
IL 83 & Rand Rd	E - 57.3	D - 43.3	D - 41.6	E - 60.5	D - 47.5	D - 43.1	D - 54.1	D - 48.1	D - 44.1	E - 57.0	D - 51.4	D - 48.1	D - 51.3	D - 39.5	D - 40.7
IL 83 & Kensington Rd	D - 38.3	D - 42.2	D - 35.7	D - 39.4	D - 43.7	D - 36.8	D - 40.9	D - 42.4	D - 41.9	D - 47.9	D - 44.8	D - 43.7	D - 42.5	D - 40.5	D - 35.3
Rand Rd & Kensington Rd	C - 29.3	E - 66.8	D - 49.4	C - 29.6	E - 71.1	D - 52.2	C - 29.0	E - 56.3	D - 47.5	C - 27.7	D - 52.7	D - 42.0	C - 27.8	D - 46.9	D - 40.7
Planning Level Construction Cost	—	—	—	—	—	—	$3.5 - 5 M			$3.5 - 5 M			$4.5 - 6 M		

Notes:

Due to internal clearouts in the traffic signal sequence, it is unlikely that long queues will form inside the triangle.

1. Queuing penalty is the traffic volume in the lane times the percent of time during the simulation period that the lane is blocked. Through lane back up preventing vehicles from accessing the turn bay is included in the queuing penalty.

Comparison to Baseline - 2040 No-Build Alternative