

To: McHenry County Division of Transportation	
From: Julie Hoberg	Project: Randall Road Improvements Study
CC: file, Michelle Link	
Date: September 18, 2007	Job No: 52986

**RE: Preliminary Improvement Options to be Considered**

The purpose of this memo is to identify improvement options to be considered in the alternative evaluation process for the Randall Road Improvements Study. The options were documented through public comments received through the project website and at the first public meeting on July 25, 2007, a Consultant Team Meeting on September 5, 2007, a Community Advisory Council Meeting on September 12, 2007, and through the Randall Road Context Audit. The list of options will be enhanced after a Community Advisory Council Meeting on October 10, 2007 and presented to the public at a second Public Meeting in the summer of 2008.

The improvement options are divided into four primary categories: Arterial Options, Intersection Options, Pedestrian/Bicycle Options, and Congestion Management System (CMS) Options. All identified options will be screened through a three-level evaluation process. The evaluation process for the Randall Road Improvements Study applies progressively more demanding criteria to the range of potential options through a series of three screening levels:

- Level 1. Functional Evaluation: Eliminates options that are not feasible or realistic.
- Level 2. Comparative Evaluation: Identifies feasible options that best address the purpose and need. Alternative Packages are formed from combinations of the best options.
- Level 3. Detailed Evaluation: Identifies the Preferred Alternative Package that best addresses the purpose and need and minimizes environmental impacts.

Note – Items in bold are the improvement options suggested by the Community Advisory Committee (CAC) at the September 12, 2007 meeting or through the Context Audit. Items in italics are the improvement options suggested through public comments.

**Category I. Arterial Options**

The following list includes potential Arterial Improvement Options:

- 1) Lane Options
  - a. **Keep four lanes along the mainline**
  - b. **Construct six lanes along the mainline**
  - c. **Construct eight lanes along the mainline**
  - d. *Keep four lanes along the mainline and add a center bi-directional turning lane*
  - e. *Construct six lanes along the mainline and add a seventh lane in the center as a bi-directional turning lane*
  - f. **Keep four lanes (mainline) with a Frontage Road\* (possibly from Algonquin to Carpentersville or close section between Bunker Hill and Algonquin Road, so that Frontage Road is accessed and utilized).**
  - g. **Construct six lanes (mainline) with a Frontage Road\* (possibly from Algonquin to Carpentersville or close section between Bunker Hill and Algonquin Road, so that Frontage Road is accessed and utilized).**
  - h. **Construct four-lane express lanes using C-D Roads(similar to Palatine).**
  - i. **Construct six-lane express lanes using C-D Roads (similar to Palatine).**
  - j. **Construct six lanes along the mainline with a dedicated HOV/Bus/Shuttle Lane.**
  - k. **Construct five lanes along the mainline with one lane being a reversible express lane.**
  - l. **Construct six lanes along the mainline with one lane being a reversible express lane.**

- m. **Enhance parallel corridors (similar to Kane County - Square Barn Road, Tyrrell Road and Peck Road, west of Randall Road, Other(?)) and keep Randall with four lanes (mainline).**
- n. Enhance parallel corridors (similar to Kane County - Square Barn Road, Tyrrell Road and Peck Road, west of Randall Road, Other(?)) and keep Randall with four lanes (mainline) and add a fifth lane as a bi-directional turning lane.
- o. **Construct express lanes using a double-deck structure (local lanes at-grade, express lanes elevated (similar to Wacker Drive)).**

\*including improvements to the existing frontage road system in place in south of Algonquin Road.

- 2) Package Features (to be evaluated after the formation of packages)
  - a. Median Options
    - i. Painted medians (SRA 30-foot desired).
    - ii. **Mountable medians.**
    - iii. **Grass medians/rural ditch sections (could be used for snow storage).**
    - iv. **Landscaped medians.**
  - b. Shoulder Options
    - i. **Rural.**
    - ii. **Urban.**
  - c. Other
    - i. Reduce speed limits to 45 mph throughout.
    - ii. **Resolve future land use issues/redevelopment.**

## Category II. Intersection Options

The following list includes potential Intersection Improvement Options:

- 1) General Intersections Improvements (to apply to Randall Road corridor)
  - a. **Provide acceleration/deceleration lanes at access points.**
  - b. **Reduce/manage/consolidate access along Randall Road (especially non-signalized intersections such as right-in/right-out locations).**
  - c. **Eliminate full access for intersections that do not have traffic signals.**
  - d. **Add capacity on side streets for turning lanes.**
  - e. **Eliminate turning movements during peak hours.**
  - f. **Allow free flow conditions for right-turn lanes and provide large acceleration lanes.**
  - g. Investigate opportunity to use Paired Intersections.
  - h. **Investigate access for express lanes.**
- 2) Algonquin Road
  - a. Single point urban interchange (SPUI).
  - b. Roundabout.
  - c. **Michigan Lefts (Median U-Turn) option (either on Randall Road or along minor road).**
  - d. **Evaluate the Surgery Center access off of Algonquin Road (possibility for realignment, easier connection of frontage roads).**
  - e. **Continuous flow intersection (CFI).**
  - f. **Tight diamond interchange.**
  - g. **Grade-separated intersection (through lanes over with local lanes intersecting).**
  - h. **Construct additional turn lanes (specifically northbound left turns).**
  - i. Super Street intersection.
- 3) Bunker Hill Road/Huntington Drive\*
  - a. Construct exclusive right turn only lanes.
  - b. **Add turn lanes along Huntington Drive.**
  - c. Eliminate Access.

\*Note: The Village of Algonquin is in the process of locating funding for improvements to this intersection

- 4) Stonegate Drive
  - a. Allow a right-in/right-out only at its intersection with Randall.
  - b. Grade-separate the intersection with Randall.
  - c. Install a traffic signal.
  - d. **Eliminate access.**
  
- 5) Acorn Lane/Polaris Drive/Harvest Gate
  - a. Auxiliary Lane connecting to Algonquin Road.
  - b. Tight diamond interchange.
  - c. Construct a SPUI.
  - d. Convert intersection to a multi-lane roundabout.
  - e. Eliminate Access.
  
- 6) Miller Road
  - a. **Construct additional exclusive turn lanes.**
  - b. Construct a tight diamond interchange.
  - c. Construct a SPUI.
  - d. Convert intersection to a roundabout.
  - e. Eliminate Access.
  
- 7) Village Road
  - a. Install a traffic signal.
  - b. Close/Eliminate access at Village Road and divert traffic on Carlemont Drive to Angela Lane and extend Carlemont Drive to Miller Road.
  
- 8) Angela Lane
  - a. Install traffic signal.
  - b. Construct additional exclusive turn lanes.
  - c. Convert to a full-access intersection.
  - d. Eliminate Access.
  
- 9) Alexandra Boulevard
  - a. Close/Eliminate access at Alexandra Boulevard and divert traffic on Carlemont Drive to Angela Lane/Skyridge Drive to Ackman Road.
  - b. Install a traffic signal.
  - c. Convert to a full-access intersection.

### Category III. Pedestrian/Bicycle Options

The following list includes potential Pedestrian/Bicycle Improvements Options that have been identified:

- 1) Bike and Pedestrian Trails, Paths, and other Facilities
  - a. **Provide a trail connection to Prairie Trail – north of Acorn Lane (potential location of Hawk Signal).**
  - b. **Provide a dedicated bicycle lane along Randall Road.**
  - c. **Add a bicycle lane in median as its own individual lane along Randall and minor roads.**
  - d. **Allow pedestrians to cut-through residential and commercial lots in order to by-pass Randall.**
  - e. **Improve pedestrian circulation within business areas.**
  - f. **Provide sidewalks along both sides of Randall Road from residential to commercial areas. (Schaumburg is a good example).**
  - g. **Provide bicycle parking facility.**
  
- 2) Intersection Pedestrian/Bicycle Improvements
  - a. Consider improvements to Bunker Hill Road existing pedestrian crossing including: grade-separated crossing, safety island, remove crossing.
  - b. **Install pedestrian signalization at all traffic signals.**
  - c. Remove pedestrian signalization at all traffic signals.

- d. **Minimize crossing distances (safety islands).**
  - e. Install Hawk Signals north of Acorn Lane. (Pedestrian actuated, off-set between north & south).
  - f. **Keep pedestrian crossings away from intersections. Potential locations include Stonegate, Lowes-Applebees, Parks-Ken Carpenter Park-Richard Taylor Park.**
- 3) Grade-Separated Crossings
- a. Use Woods Creek culvert to cross under Randall Road.
  - b. **Grade-separate pedestrian/bicycle crossings using tunnels or overpasses at intersections (within Lake in the Hills near Miller Road area parks, Village of Algonquin near library and Jacobs High School, and the City of Crystal Lake at Ackman near the access to Lake in the Hills Fen). Examples include Great Western Trail/Prairie Path and Palatine.**
  - c. Provide grade-separated crossing at Acorn Lane/Polaris Drive.
  - d. Provide grade-separated crossing at Miller Road.
  - e. Provide grade-separate crossing at Angela Lane.

#### **Category IV. Congestion Management System Options**

The following list includes potential Congestion Management System (CMS) Options that have been identified:

- a. Provide shuttle service during peak shopping time.
- b. Provide a Park and Ride facility in the southeast quadrant of the intersection between Randall Road and Ackman Road or in the northwest quadrant of the intersection between Randall Road and Miller Road.
- c. Provide Dynamic Message Signs – located for drivers to use alternate routes such as Rakow Road to IL Route 31 (SB) and Algonquin to Pyott Road (NB) in case of accidents or other road conditions causing extreme delays.
- d. Provide HAR (Highway Advisory Radio).
- e. Provide Accident Investigation sites.
- f. Provide traffic signal priority for express lanes.
- g. Provide emergency pre-emption.
- h. Provide bus/transit pre-emption/traffic signal priority.**
- i. Continue to optimize traffic signal timing along Randall Road.
- j. Restrict turning movements during peak hours.