

Village of Morton Grove Lehigh/Ferris Framework Plan



Volume 2: Technical Elements

November 2008

Approved by Village Ordinance 09-01
January 27, 2009



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Lehigh/Ferris Subarea Framework Plan

Volume 2: Technical Elements

Contents

<u>Section</u>	<u>Page</u>
1. Transit-Oriented Development Principles	1
2. Development/Design Guidelines	7
3. Community Workshop Summary	12
4. Traffic Study & Recommendations	21

Village of Morton Grove

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1. Transit-Oriented Development Principles

Development within the Lehigh/Ferris Subarea should also be consistent with fundamental design principles typical of Transit-Oriented Development (TOD) neighborhoods. These design principles concentrate on creating connectivity between land uses and on creating attractive, walkable streets. These principles were utilized in the preparation of the Framework Plan and are intended to establish a unified design framework to guide future development of both public and private spaces. They are as follows:

- Higher-Density, Mixed-Use Development
- Interconnected Street Pattern;
- “Primary” and “Secondary” Streets;
- Pedestrian-Scaled Blocks;
- Continuous Streetwall;
- Anchored Corners;
- Focused Views;
- Uninterrupted, Comfortable Walkways; and
- Coordinated Streetscape Design.

These principles should be incorporated in the design and development of individual projects within the Subarea. A detailed description of each principle is summarized below.

Principle 1: Higher Density Mixed-Use Development

Transit-oriented development areas typically consist of a mix of uses often including primarily residential development, but also retail/commercial and public/institutional uses. In general, transit-oriented development areas allow for higher densities of development than other areas of a community. The reason for this is not only to create a critical mass of potential riders to support the transit system and station, but also to allow for the critical mass necessary to support commercial and retail uses near the station. The intent is to limit the need for the automobile by providing the ability to access everyday services and shopping by walking or via transit.

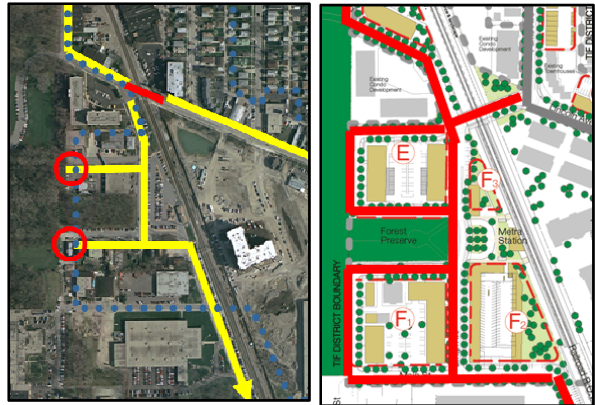


Higher density development in Glen Ellyn

The Framework Plan proposes moderate densities of primarily residential and mixed-use development with a limited amount of retail/commercial located near the station to serve commuters, as well as along Lincoln Avenue to build upon the neighborhood commercial that already exists, and along Dempster Street, a traditional commercial corridor serving primarily vehicular traffic.

Principle 2: Interconnected Street Pattern

As the primary path of access and circulation for both vehicular and pedestrian traffic, streets serve as important public space for most communities. Public streets should provide adequate access to all areas, and there should be multiple ways to get to and from any given point. In transit-oriented development areas, continuous streets and traffic flow are desired, and cul-de-sacs and dead ends should be avoided.



The Lehigh/Ferris Subarea is disconnected from surrounding neighborhoods by the Forest Preserve, which acts as a barrier on the west, and also by the rail line that cuts the area in half with only two connection points. While additional access points over the railroad are restricted by the ICC, the Framework Plan attempts to enhance connectivity by proposing the reconstruction of one of the major rail crossings and the realignment of a major thoroughfare, and the elimination of dead end roads near the Forest Preserve to enhance public access to this open space amenity.

Principle 3: “Primary” and “Secondary” Streets

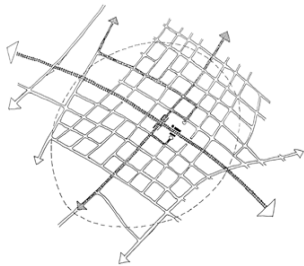


Establishing “primary” and “secondary” streets helps to reduce pedestrian and vehicular conflicts, and to create more interesting and rewarding pathways for pedestrians. “Primary streets” tend to be the heavier paths of circulation. According to the principles of TOD, “Primary streets” are intended to be the primary pedestrian way, and therefore, are the streets that should have the main entrances to buildings, windows facing the street to provide “eyes on the street” for 24-hour safety, and limited or no driveways for vehicular access. “Primary streets” should provide the most continuous, safest, and most interesting pedestrian experiences within the area. Therefore, more streetscaping, more heavily articulated facades, shade trees, ornate lighting, and signage are all important elements of “primary streets.”

According to the principles of TOD, “secondary streets,” while being critical pathways for circulation, both vehicular and pedestrian, tend to focus more on the vehicular by providing the primary vehicular access points into properties and neighborhoods. As such, “secondary streets” tend to contain more curb-cuts and driveway entrances, and also tend to have the sides of buildings facing them and fewer building entrances. Garbage and service access also tend to be located along “secondary streets,” particularly if alleys are not provided.



Within the Lehigh Ferris Subarea, the Framework Plan establishes the “primary streets” to be Ferris Avenue, Lincoln Avenue, Lehigh Avenue, Old Lincoln Avenue, and Narragansett Avenue. The remaining streets, which tend to be the majority of the east/west streets, are considered to be “secondary streets” from a design perspective. While these streets still have sidewalks and comfortable walkways, they tend to be less ornate and decorated.



Principle 4: Pedestrian-Scaled Blocks

In an area slated to be mainly residential with some commercial uses, blocks should be sized in such a way as to be walkable with more frequent intersections and decision points allowing for changes in direction. In pedestrian-friendly, transit-oriented neighborhood blocks should typically not be larger than 300' x 600' to provide these choices.

Principle 5: Appropriately Scaled, Continuous Streetwall

A streetwall is the physical boundary of street space which focuses views and defines a “wall” or sense of enclosure. A streetwall is typically formed by the facades of buildings lining it, but can also be formed by street trees or other streetscape elements. In a transit-oriented development area, a continuous and comfortable streetwall should be established along all streets, but especially “primary streets.” In most cases the creation of a streetwall should include both sides of the street, unless a less defined but equally enthralling space exists in its place, such as a park, a vista, or other beautiful landscape. To create a comfortable, human-scaled streetwall and sense of enclosure, the width of the street space (the space between the walls, including any setback) should typically be less than three times the height of the adjacent buildings.

Additionally, to be effective, pedestrian walkways should be located close to the streetwall and the streetwall must be continuous and not broken by large expanses of void space. In other words, the spaces between the buildings lining the street must be significantly less than the length of the faces of the buildings themselves. Buildings should be built to a continuous line as opposed to set back beyond the line. The space of the street should be formed by the buildings and not be overwhelmed with leftover space in front of or alongside the buildings. As such, parking should be located behind buildings to avoid the creation of void space.



In an attempt to create appropriately scaled streetwalls, the Framework Plan recommends “build-to lines” of not greater than 15 feet from the street to help create this sense of enclosure. This distance can vary based on block conditions including land use and sidewalk configuration.

Principle 6: Anchored Corners



Anchored corner in Chicago

Intersections are key components of a street network, as they often mark the entrance to an area, and serve as key decision-making points for travelers. The streetwall concept is perhaps most important at intersections. Anchoring the corners with buildings provides scale to intersections and reduces the impact of the amount of paving. The Framework Plan incorporates this concept by pushing buildings up to the corners at intersections, and locating parking lots behind the buildings.

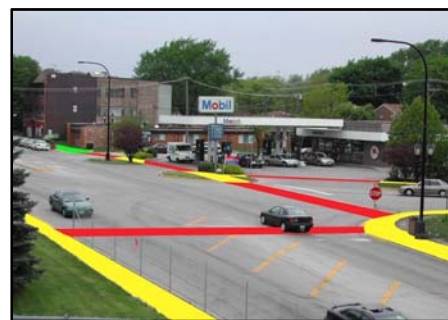
Principle 7: Focused Views

Focal points at the ends of streets help to guide pedestrians around corners or draw them down the street. Focused views toward an attractive focal point is an important design principle of TOD for this reason. At the very least, the points at the end of streets should be identified and controlled by either a building facade or a landscape element. While the streetwall does much to help control the views already, the focal points add interest and help to establish interim destination points for pedestrians to make trips feel shorter.



Principle 8: Safe, Comfortable, Interesting Pedestrian Zones

Pedestrians should have a comfortable, safe walkway to traverse, particularly in a pedestrian-oriented TOD environment. Wide sidewalks, at least five feet in width, should be provided along all streets, along with buffers from vehicular traffic, provision for shade or protection from the elements, and adequate lighting for safety. On-street parking is an excellent way to buffer pedestrians from vehicular traffic. Providing a parkway with trees between the curb and the sidewalk is another.



Other important aspects of creating safe and comfortable pedestrian zones is to reduce conflicts between vehicles and pedestrians by focusing driveways on secondary streets, as well as by clearly marking sidewalks, crosswalks, and pedestrian zones. Another important aspect of this principle is the creation of interesting, aesthetically pleasing street and sidewalk environments. This is created through building articulation, provision of street furniture, banners, planters, and other streetscape elements.

The Existing Pedzone & Bike Path map on the next page of this report summarizes existing conditions for pedestrians and cyclists, and where conflicts exist with vehicular traffic. The Framework Plan works to improve these conflicts through improved roadway design, provision of or improvements to sidewalks, and enhanced streetscaping.

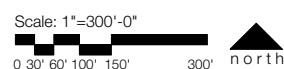
Principle 9: Coordinated Streetscape Design



Downtown streetscape in Rochester, MI

The inclusion of a continuous streetscape design is paramount to any community and transit-oriented development neighborhood. Street trees are probably the most important streetscape element. These street trees not only provide a more comfortable pedestrian environment by offering shade and protection from the sun, but they also enhance the image of an area.

Providing a fairly continuous row of street trees can help to unify and soften the look of any area. However, care must be taken in selecting particular tree species to ensure that the visibility of signs, storefronts, and other street features is not blocked or excessively screened. Species that are appropriate for residential areas may not be so for commercial districts. Pedestrian-scaled lighting, planters and furniture such as benches and trash receptacles are all additional elements of streetscape design. Combined, these elements can define the character and identity of an area, while also providing a positive, welcoming feel. As such, the Framework Plan proposes streetscape improvements along all of the streets in the Subarea.



2. Development/Design Guidelines

The development and design guidelines are intended to guide future development in a way that is consistent with the general design principles presented earlier as the basis for the plan. These guidelines are consistent with the C-R Zoning District unless otherwise stated.

Access, Parking Requirements, and Utilities & Services

- **Parking Requirements.** The Village of Morton Grove on-site parking requirements should be utilized in calculating required parking for the site. Sites may qualify for up to a 15% parking credit based on proximity to the Metra Commuter Station, and may also qualify for a 25% mixed-use credit depending on the development plan that is proposed. The on-site parking requirements prior to applying the applicable parking credits are as follows:
 - **Multifamily Residential Condos:** A minimum of 1.75 spaces per unit.
 - **Townhouses:** 2.0 spaces per unit.
 - **Commercial/Retail (Includes Office):** 1 space per 250 square feet of floor area
- **Parking Design.** Surface parking should be located in the rear of buildings, off of “primary streets” where possible. Parking lots fronting on the rail right-of-way should be screened from the rail right-of-way with landscaping.
 - a. Ideally, parking lots should be edged by vegetation and landscaping should be incorporated throughout. These planting areas should include shade trees, when possible.
 - b. Surface parking lots should include stormwater swales and/or other best management practices for the infiltration and detention of stormwater.
- **Parking Structures.** Structured parking is allowed at grade-level in multifamily residential or mixed-use buildings. Ideally, however, parking garages should be located at the rear of buildings, or in the case of stand-alone structures, wrapped with a liner building. When located on a “primary” street-facing façade, structures should be recessed below grade as much as possible. When visible from any street, the parking structure façade should be articulated similar to the building. Lesser attention can be paid to the aesthetics of a parking façade along the railroad tracks.
- **Driveways.** Driveway access should be off of an existing alley if possible or a secondary street. More than one driveway per secondary street frontage of a property is discouraged. Driveways should be located a minimum of 50 feet from a corner.
- **Garages.** Garage entrances should not front on “primary streets.” Garage entrances off of secondary streets are acceptable, but ideally garages should be accessed from an inner driveway or alley. Garage entrances should be screened from view from “primary streets.”
- **Services.** Service, loading, and trash collection should be located off alleys or driveways or within parking structures, and should be screened from view, particularly from “primary streets.”

- **Utilities.** If present, existing above-ground utility lines should be removed, relocated, or buried, as necessary.
- **Storm Water Detention.** Storm water detention should be provided on-site; underground or subsurface storage is preferred. To the extent possible, storm water Best Management Practices, such as green roofs, parking lot swales, and permeable paving, should be incorporated into the design of each site to encourage infiltration and reduce the need for large storage.

Bulk and Layout Requirements

- **Height.** Maximum building height in the C-R district is 40 feet for commercial developments and attached dwellings, and 45 feet for multifamily developments. This is roughly equivalent to four stories, assuming approximately 10 to 12 feet per floor. The Village anticipates approval of each project as a Planned Unit Development (PUD), and Special Use Permits may be granted to allow a taller building if the proposed design provides human scale through vertical and horizontal façade divisions and articulation. The Framework Plan anticipates building heights of three to five stories on the east site of the railroad tracks and six to seven stories on the west side.
- **Dwelling Units per Acre (du/a).** A maximum of 24 du/a are allowed by right under current zoning provisions. The density may be increased to a maximum of 32 du/a with a special use for mixed-use and multifamily developments and up to 40 du/a for multifamily PUD projects. The zoning code allows 16 du/a by right for attached dwellings (townhouses) and up to 18 du/a with a Special Use.
- **Commercial Building Floor-Area-Ratio.** The Village’s Unified Development Code (UDC) allows a maximum floor-area-ratio (FAR) of 2.0 for commercial buildings. This ratio regulates the bulk (or size) of non-residential buildings. Proposed increases will be considered on a case-by-case basis and will be part of the negotiated PUD for each site and project.
- **Continuous Streetwall.** In order to establish a continuous streetwall along street faces, the facades of new buildings should be constructed to a “build-to-zone” rather than a setback. Consistent streetwalls should be established on key segments of “primary streets” and pedestrian routes, including Ferris Avenue north of Lincoln, Lehigh Avenue between Main and Lincoln, Lincoln Avenue on both sides of the railroad tracks, and facing the projection of Forest Preserve land (between Sites E and F1).
 - a. Street-facing façades should be built between five and ten feet from the front and side property lines to define the streetwall.
 - b. Residential street-facing façades of first floor commercial space should be built between ten and 15 feet from the property line to allow for a landscaped transitional space between public and private uses, while maintaining the streetwall. Steps may extend to within two feet of the property line.

- **Side and Rear Setbacks.** Adjacent to the rail right-of-way, fire department access will likely be required. An approximate minimum five-foot building setback should be provided from side property lines.
- **Rail Right-of-Way Frontage.** To the extent possible, buildings should line the rail right-of-way, taking advantage of views to the Forest Preserve in the distance and creating a positive impression of the area when viewed from the train. Surface parking along the rail right-of-way should be softened by landscaping, especially trees. Fences with plantings will be considered along the rail right-of-way to maximize the buildable site area if needed, but landscaping is preferred.
- **Street Corners.** If applicable, the street corner at the intersection of the side and front “build-to zones” should be occupied by buildings.

Building Design

- **Green Buildings.** Buildings should be designed to the U. S. Green Building Council’s LEED (Leadership in Energy and Environmental Design) system. LEED for New Construction should be utilized for mixed-use or multifamily buildings. The LEED for Homes Pilot Program should be utilized for attached single family dwelling units. A Silver or higher rating is preferred.
- **Façade Articulation**
 - a. Street facing façades should be divided to break up the monotony of a wall, particularly along “primary streets.” The division can be accomplished by the use of any setback, protrusion, or change in material that generates an obvious shadow line.
 - b. An expression line is recommended to define the ground floor from upper floors on buildings taller than two stories. An expression line is any setback, protrusion, or change in material that generates an obvious shadow line.
- **Occupied Façade Space.** “Primary” street-facing façades of buildings should contain occupied space. Storage and utility space should be located on an interior side or rear façade.
- **Entrances.** Main entrances to buildings must be located on the front façade of the building. Entrances to buildings should be no more than five feet above sidewalk grade for residential buildings and accessible via direct route from the sidewalk.
- **Façade Transparency.** Façade transparency along streets is required.
 - a. Residential and Commercial Buildings: A minimum of 15% to 20% of all street-facing facades shall consist of clear, transparent windows for commercial and residential buildings.
 - b. Commercial/Retail Storefronts: For ground-level retail space, stand-alone or in mixed-use buildings, traditional storefronts should be utilized with a minimum of 50% clear, transparent windows.
 - c. Garage Facades: Garage openings on street faces should be screened with wall treatments, structures, or landscaping to minimize visibility of garage lighting and

vehicles from the street. Ground level garages should be designed thoughtfully to add visual interest to facades facing the street.

- **Materials**

- a. Buildings should include finished surfaces on all sides, including the rear facades and facades along the rail right-of-way.
- b. Surface materials shall be high quality, durable, natural materials, such as brick, stone, or concrete. Unnatural, synthetic materials, such as vinyl siding or plastic, should be discouraged. Materials intended to replicate a natural material, such as false stucco or EIFS (exterior insulated finish system), vinyl or metal siding, or false brick should be discouraged.
- c. Oversized masonry, typically taller than four inches in height, such as concrete block, split face concrete masonry units, and jumbo brick will not be considered as finish materials on any street façade and it is preferred that it not be utilized on the railroad right-of-way facade.

- **Roofs**

- a. Pitched roofs are desirable for all buildings, but are not required. Flat roofs with parapets may be utilized; however, parapets should not be greater than four feet in height.
- b. Pitched roofs should be greater than 4:12 and less than 12:12.
- c. All mechanical equipment and utilities located on the roof shall not be visible from the street. Satellite dishes and similar devices and attachments shall not be visible from the street, particularly “primary streets.”
- d. Consideration should be given to roofs visible from the associated or other surrounding buildings. These roofs may contain roof terraces or green roof features.

- **Mechanical and Storage Areas.** Exterior mechanical systems or storage areas should be located behind the building and screened from public right-of-ways, including the rail right-of-way.

Awnings, Lighting, and Signage

- **Awnings.** Awnings are encouraged and should be made of weather-resistant canvas or metal. Plastic awnings are discouraged. The scale of awnings should be in proportion to the scale of the building.
- **Signage.** As outlined in the Village’s sign ordinance, signage on awnings or storefront glass is permitted. Wall-mounted plaque or band signs, and shingle signs (pedestrian-scale signs hung perpendicular to the façade) are the most appropriate signs for the pedestrian-oriented district. It is preferred that signs on new construction be installed on private property and not overhang into the public right-of-way.
- **Lighting.** Exterior lighting should serve only to illuminate entries, signage, pedestrian areas, or to highlight architectural features. Lighting should be focused down to reduce light trespass. Overlighting should be avoided. Internally illuminated signs or awnings are discouraged. Signs with flashing or moving text/parts should not be permitted.

Neighborhood Design Elements

- **Street Termination.** If a street terminates into a middle of a block, it is desired to have a building span the width of the street at its terminus to sufficiently contain that view. It is desired that the building at such a location include a special feature marking the street terminus. Special features may include a tower, a significant protrusion or recess in the façade, or the main entrance to the building. Towers should not extend more than one story above the building. A street terminating into a parking lot is not desirable.
- **Corner treatment.** At “primary” street corners, it is recommended that the corner building include special architectural features. Towers may be utilized at these locations; however, no building should have more than one tower per street face.
- **Street Trees and Landscaping.** Street trees should be incorporated along all streets. Along commercial façades, trees may be located in tree wells with or without grates to allow the sidewalk to continue to the curb. Tree sizes and species should be high branching shade trees so as to not block sightlines to storefronts and signage. Streetscaping will be subject to approval by the Village and should be coordinated with the Village’s plans for streetscape design and improvements. Specific tree species should be appropriate for the location and will need to be approved by the Village.
- **Pedestrian Crossings.** At all intersections, sidewalks should connect across the street in all directions, providing wheelchair-accessible ramps. Crosswalks should be provided at all street crossings and driveways. At driveways, the sidewalk material and pattern should continue across the driveway to signal a priority to pedestrians over vehicles.

3. Community Workshop Summary

A Community Workshop was held on July 26, 2006 to discuss the draft concept plan and key project priorities for the future redevelopment of the area surrounding the Metra train station at the intersection of Lehigh/Lincoln/Ferris. The concept plan and key project ideas are long-term in nature but are useful in guiding development in a direction that is most beneficial to the long-term interests of the community. The overall purpose of the meeting was to identify community priorities and concerns in order to help to guide short-term and long-term redevelopment efforts in the Lehigh/Ferris Subarea. More than 140 residents and business owners participated in the workshop.

The workshop began with a welcome and introduction from Mayor Krier, and a presentation by the Director of Community and Economic Development, Bill Neuendorf. Thereafter, consultants from *S. B. Friedman & Company* and Farr Associates summarized the background of the redevelopment efforts to date and the key elements of the “draft” concept plan for the area. The consultants also identified several “key projects” that would be necessary to achieve some of the redevelopment goals. After the presentation, the audience divided into small groups of 10 to 15 people to discuss these initial ideas. The groups were asked to 1) identify what they liked about the draft plan, 2) identify what concerns they had about the plan, and 3) identify additional projects and/or ideas that had not yet been considered or included in the draft plan. The results of this discussion were presented by each table and recorded by the consultant group, and at the end of the meeting, each attendee was asked to “vote” on their top three project priorities.

The following summarizes the responses from the meeting:

SUMMARY OF SMALL TABLE GROUP DISCUSSIONS

The small groups discussed various aspects of the conceptual redevelopment plans for this area. Each group appointed a speaker to summarize the key findings of their discussion in terms of their “likes,” “concerns,” and “additional projects/ideas.” Asterisks (*) indicate the number of additional times that the same comment was made by other tables.

Likes:

- Lincoln/Lehigh/Ferris realignment
- Realignment of roads *
- 90 degree railroad crossings **
- Protecting pedestrians at Lincoln Crossing
- Bike trail and railwalk
- Streetscaping *
- Better connections *
- Affordable housing *
- Senior housing *****
- Housing along Forest Preserve
- New public library *****
- Library expansion with meeting room element

- New train station *
- Train station relocation
- Mixed-use parking structure *****
- Retail/restaurant **

Concerns:

- Parking garage – want to hear other communities’ experiences
- Improved parking on Dempster
- Parking
- Should not charge Forest Preserve visitors to park in the Metra parking garage
- Providing adequate parking
- Density
- Where will buyers come from?
- Density on southern edge of study area
- Real estate bubble
- Congestion
- Stop lights
- Truck traffic *
- Needs to be a designated bike crossing area
- Increased traffic
- Realignment of roadways
- Traffic at Lincoln/Ferris *
- Concerned with Forest Preserve traffic coming through residential areas **
- Pedestrian bridge
- Capulina rail road crossing not effective
- 90-degree turns may make it difficult to get on Ferris
- Funding
- Cost *
- Question: how much did TIF get and how much did the Village, schools, library, and other jurisdictions NOT get?
- Impact on school(s) *
- Cost of rehabilitating Metra Station
- Why are we rushing on library relocation? Can we afford this?
- Is the library really such a draw? There are other good local libraries
- Is this area the correct location for a public library?
- Plan should reflect needs of industrial users already here
- Loss of jobs in industrial area
- Impact on tax base of Village
- Relocation of businesses
- Flooding issues
- Affordable and senior housing (have both)
- Affordable housing
- Level of developer interest in senior housing
- Seniors may need assisted living

- Better integration between buildings and Forest Preserve
- Roads around Forest Preserve *
- No purpose to circular road next to Forest Preserve
- Want more open space south of Dempster
- Need to get Metra on board
- New train station not necessary *

Key Projects/Ideas:

Original 16 Projects (as presented by the consultant team):

1. New Metra Station
2. New Mixed-Use Parking Structure
3. Pursue Senior Housing Project
4. Develop New Public Library
5. Improve Lincoln/Lehigh/Ferris Crossing
6. Improve Lincoln Avenue Streetscaping
7. Close Old Lincoln Crossing/Construct New Capulina Crossing
8. Realign Lehigh Avenue
9. Construct Railwalk/Bike Path
10. Provide Pedestrian Overpass at Main Street
11. Provide Public Access to Forest Preserve Land
12. Create Open Space North of Capulina
13. Reconstruct Old Lincoln along Forest Preserve
14. Reconstruct Main Street
15. Realign Chestnut Street or Provide Public Easement Around Site E
16. Realign Roads Around Site F

Additional 18 Projects (Identified by Workshop Participants):

17. Straighten Lehigh
18. Traffic Light at Lincoln/Ferris
19. Retail/Restaurant
20. Overpass at Dempster
21. Coffee Shop at Train Station
22. Separate Bike and Walking Path in Forest Preserve
23. Library Addition
24. Maintain Industrial Base in Morton Grove
25. Create Open Space on North End of Study Area
26. Work with Forest Preserve to Mitigate Traffic
27. Build Library on Top of Parking Structure
28. Combine Senior Housing with Library
29. Designated Bike Crossing at Dempster
30. Vehicular Overpass at Lehigh/Ferris
31. Stop Lights
32. Close TIF Early
33. Redevelop Library
34. Restaurant by Forest Preserves

ADDITIONAL WRITTEN COMMENTS LEFT BY INDIVIDUALS

The participants at each table were given an opportunity to provide individual preferences and concerns for the growth of this area by filling out comment sheets left at each table. This gave individuals the opportunity to share ideas that may not have been shared in the small group discussion summaries. Some of these ideas were mentioned as being representative of the feelings of the table while other ideas were strongly held by one or more individuals. The comments that were collected were organized as “likes,” “concerns,” and “other comments.” They are listed below.

Likes:

- Library/resource center with drive-thru
- Larger library
- New library at Dempster and Lincoln
- Library on the west side of town
- Library in centralized location
- Put library near parking garage
- A new library would be nice, but it is not a high priority *
- New public library **
- Library on top of parking lot
- Keep library in current location
- Expand current library using St. Martha’s lot **
- Gateway area at Lincoln
- Road realignment
- Get rid of Old Mill Road completely with crossing *
- Improve Lincoln/Lehigh/Ferris crossing *
- Close Old Lincoln crossing *
- Improve crossings, especially Capulina **
- 90-degree crossings at railroad tracks
- Pedestrian rail crossing
- Pedestrians
- It is difficult to feel connected to the community when you have to drive everywhere, Village needs a public place to sit and talk with neighbors
- Should have water fountain
- More open space incorporated
- Better lighting on streets *
- Train is asset
- New/modernized Metra station *****
- Multi-leveled Metra parking garage
- Mixed-use parking ***
- Parking structure should be near library and Metra station
- Move railroad station further north
- More parking near train station
- Improve Dempster off-street parking

- Bicycle overpass at Dempster
- Pedestrian and biking overpass to get to Woodlands **
- Designated crossings for pedestrians and bikes across Dempster
- Walkable train station
- Starbucks/coffee shop would be great in the railroad station *****
- Retail, entertainment choices – coffee, ice cream, community gathering place, kids play area (similar to Old Orchard) ***
- Restaurants (Olive Garden, etc., sit down)
- Deli – small shops
- Upscale restaurants with live music, wine, and fine foods
- Restaurants with outdoor seating along Forest Preserve
- More quality restaurants
- Senior housing
- Affordable senior housing projects *****
- Affordable housing **
- Senior housing in the form of mid-rise apartment rentals and condominiums
- Senior housing and continuous care could be privately funded
- Senior housing near library *
- Village should provide older residents with a place to “downsize” when they sell their homes
- New residences fronting Forest Preserve with residential development facing Forest Preserve
- There are so many condos in town, the Village should try to build something else in addition
- Capture Forest Preserve dollars
- Grocery stores in town
- Grocery store on east side of town
- Moving undesirable factories out of town
- Larger police station

Concerns:

- Traffic control concern on Lehigh Ave/River Road going south of railroad crossing
- New proposed streets fronting Forest Preserve (Site E1 & F1) are unused space – you don’t need streets that go in a circle
- No purpose to circular roads around developments
- What kind of traffic control is going to be put in the intersection of Lincoln and Ferris?
- Stoplights – where on new/old streets
- Traffic to be accommodated?
- Traffic flow at Lehigh “S” turn
- Huge increase of traffic density on Capulina, which is a residential street – cannot accommodate semis
- Truck traffic through residential areas
- Traffic flow if too close to Old Mill Road
- Traffic flow at Ferris and Lincoln

- Traffic flow at Capulina and “new crossing”
- Moving Metra station further north would cause more congestion *
- Traffic congestion
- Traffic on Dempster *
- Traffic on Lincoln with new condos
- Condominium glut right now
- Consider: housing/condo boom is ending/slowing – how many do you need? Village needs restaurants/dry cleaners
- Real estate bubble?
- Density of people – who will buy?
- High density – schools?
- What money amount did TIF receive last fiscal year? (amount Village, schools, library did not)
- Flooding area – are we taking away flood plains?
- Green/open spaces
- Restaurants/grocery stores
- No guarantee that Metra station will allow a restaurant/coffee shop **
- Station less than 30 years old – new station is unnecessary
- Metra parking garage – problem in Glenview
- Loss of rail station parking *
- Do not believe that people going to the Forest Preserve will park in Metra garage
- Do not want to charge people going to Forest Preserve to park on Metra property
- Control of “people traffic” around Forest Preserve
- New library would need additional parking, present library parking is insufficient
- New library would be redundant due to libraries in Skokie, Des Plaines, Niles, etc. *
- Library expansion – how and where?
- Need a “draw”— is the library enough?
- Affordable housing
- Affordable housing – finding a developer
- Seniors who move into condos may require assisted living
- Plans need to reflect present and future industrial changes
- What are costs of each project?
- Funding for projects *
- Taxes
- Additional taxes to fund projects
- Loss of tax base *
- Village debt
- Option of closing early?
- Considering the debt that the Village is already in, not in favor of rebuilding Metra station – new train station not necessary
- Loss of jobs in industrial areas **
- Impact of development on Roughneck Concrete
- Bike path along railroad tracks unnecessary expense
- Railwalk/bike path is unnecessary – residents can use Forest Preserve

- Location of school bus stops
- Com Ed power lines would prohibit developments over two stories in the area

General Comments:

- What about extending Narragansett between Henning Court and Capulina?
- Are Forest Preserve ring roads needed? What is the cost? Return?
- Put parking garage on site E1
- Buy existing library parking to build library and underground parking
- Library important but at what cost? More center location? Par King site?
- If new library is built, should be located as close to Dempster Street as possible
- If new library is built, use old library as senior housing site
- Don't forget – improving Dempster in focusing on Woodlands area
- We need a Jewel! Jewel taxes go to Skokie!
- Everybody hates the Dominick's at Waukegan
- More retail around station
- Possible locations for restaurants along Forest Preserve with outdoor seating like Hackney's on Harms (a very popular restaurant in good weather)
- Draw/attract people in
- Priority to existing businesses
- Have a meeting/symposium with current property owners in the TIF to educate them about possible sources of funding, development, partnerships
- Continuous care for seniors – senior housing needs to be independent/assisted living and nursing care – *privately* funded with Morton Grove assistance to indigent
- Rehab buildings for affordable housing?
- Village should cooperate with Forest Preserve to clean up “The Finger”
- Small tax increase to fund projects is okay
- Buildings need to be integrated with Forest Preserve
- TIF development should focus on bringing commercial businesses to town

PROJECT VOTING RESULTS

At the conclusion of the small group discussions, each participant was given three stickers and asked to rank their preferred projects. The stickers were labeled “A,” “B,” and “C,” with “A” representing someone’s first choice, “B” representing someone’s second choice, and “C” representing someone’s third choice. The “A” sticker was then worth 3 points, the “B” sticker was worth 2 points, and the “C” sticker was worth 1 point. This exercise was done to identify the priority projects that should be investigated further with the intent of achieving action in the next five years. Included in the voting were 16 projects identified by the consultant team along with 18 additional projects identified by the participants in the small group discussions.

The highest priority projects include:

- Attracting new retail/restaurants to the area including potentially a coffee shop – 98 points
 - Retail/restaurant: 74 points
 - Coffee shop at train station: 15 points
 - Restaurant by Forest Preserve: 9 points
- Developing a new and/or adding onto the existing public library: 92 points
 - Developing a new public library: 79 points
 - Library addition: 33 points
- Pursuing a senior housing project: 66 points
- Building a mixed-use parking structure: 44 points
- Improving the Lincoln/Lehigh/Ferris crossing: 33 points
- Straightening or realigning Lehigh Avenue: 33 points
 - Straightening Lehigh: 27 points
 - Realigning Lehigh: 6 points
- Developing a new Metra Station: 24 points

The table on the following page summarizes the results of this “dot” voting exercise.

Community Workshop Summary

Description of Project	Number of Votes			Total Votes Taken	Total Point Value
	A	B	C		
	(3 points)	(2 points)	(1 point)		
Develop New Public Library	17	11	6	34	79
Retail/Restaurant	12	12	14	38	74
Pursue Senior Housing Project	10	14	8	32	66
New Mixed-Use Parking Structure	10	5	4	19	44
Improve Lincoln/Lehigh/Ferris Crossing	7	3	6	16	33
Straighten Lehigh	7	3	0	10	27
New Metra Station	3	6	3	12	24
Coffee Shop at Train Station	2	4	1	7	15
Library Addition	0	4	5	9	13
Traffic Light at Lincoln/Ferris	1	2	2	5	9
Redevelop Library	2	1	1	4	9
Restaurant by Forest Preserve	2	1	1	4	9
Close Old Lincoln Crossing/Construct New Capulina Crossing	1	1	3	5	8
Overpass at Dempster	1	2	1	4	8
Realign Lehigh Avenue	0	2	2	4	6
Create Open Space on North End of Study Area (Sites I, J, F)	1	0	3	4	6
Close TIF Early	2	0	0	2	6
Create Open Space North of Capulina	0	1	2	3	4
Improve Lincoln Avenue Streetscaping	0	0	3	3	3
Construct Railwalk/Bike Path	0	1	1	2	3
Provide Public Access to Forest Preserve Land	0	1	1	2	3
Stop Lights	0	1	1	2	3
Maintain Industrial Base in Morton Grove	0	1	0	1	2
Combine Senior Housing with Library	0	1	0	1	2
Provide Pedestrian Overpass at Main Street	0	0	1	1	1
Separate Bike and Walking Path in Forest Preserve	0	0	1	1	1
Build Library on Top of Parking Structure	0	0	1	1	1
Vehicular Overpass at Lehigh/Ferris	0	0	1	1	1
Reconstruct Old Lincoln along Forest Preserve	0	0	0	0	0
Reconstruct Main Street	0	0	0	0	0
Realign Chestnut Street or Provide Public Easement Around Site E	0	0	0	0	0
Realign Roads Around Site F	0	0	0	0	0
Work with Forest Preserve to Mitigate Traffic	0	0	0	0	0
Designated Bike Crossing at Dempster	0	0	0	0	0

4. Traffic Study & Recommendations

The traffic study prepared by KLOA begins on the following page.

Village of Morton Grove

Lehigh - Ferris Sub Area Transportation Study

**Kenig, Lindgren, O'Hara, Aboona Inc.
April 2008**

Executive Summary

This Transportation Study is a comprehensive evaluation of the proposed Framework Plan, updated April 2008, that was prepared for the Tax Increment Financing (TIF) district that was established near and around the Morton Grove Metra Station. This Plan was developed in order to reestablish the TIF district as pedestrian oriented "downtown" area and to guide future development in the area. The evaluation has identified existing and proposed travel patterns, trip characteristics, location and extent of major issues/concerns. The findings herein establish the starting point for developing transportation evaluations in the study area with a clear understanding of future traffic demands.

Background

Recent development activity in the area surrounding and near to the Morton Grove Metra train station (study area) generated a need to provide a comprehensive plan for the future. The study area is viewed as one of great potential for further transit oriented residential development, as well as supportive neighborhood commercial. A large component of the Village's effort was the formation of a Tax Increment Financing (TIF) district which will help pay for future infrastructure improvements and redevelopment activities.

Study Area Characteristics

The study area currently consists of a mix of light industrial/warehouse uses, residential, and commercial development. In recent years, many of the industrial uses have left and the Village has seized the opportunity to introduce multi-family, Transit Oriented Development (TOD). The planning initiative defined development blocks, parcels, and created a new and revised roadway and circulation plan.

Technical Analysis Findings

From this TIF district and the redevelopment opportunities generated by it, the future traffic conditions were evaluated and recommendations were established. As such, both the existing and proposed roadway networks were studied, the results of this study yielded changes to the traffic controls at key intersections and required improvements.

Conclusions

The Framework Plan will result in additional traffic demands placed on the area roadways. As part of this plan, the existing roadway alignment of the Lincoln Avenue railroad crossing will be modified to provide a more perpendicular crossing. This new alignment and the future traffic added to the roadways are likely to result in the eventual signalization of the intersection of Lincoln Avenue with Ferris Avenue.

List of Figures and Tables

Figures

Figure 1	Aerial View of Site	5
Figure 2	Existing Roadway Network	8
Figure 3	Existing Peak Hour Traffic Volumes	9
Figure 4	Existing Average Daily Traffic Volumes (ADT)	10
Figure 5	Existing Pedestrian and Bike Peak Hour Volumes.....	11
Figure 6	Existing Peak Hour Traffic, Bike and Pedestrian Volumes	12
Figure 7	Estimated Directional Distribution.....	14
Figure 8	Future Framework Plan Map dated April 16, 2008.....	15
Figure 9	Future Framework Plan Traffic Volumes.....	19

Tables

Table 1	Existing Intersection Analyses	7
Table 2	New and Recently Approved Developments Site-Generated Peak Hour Traffic Volumes.....	16
Table 3	Framework Plan-Future Development Site-Generated Peak Hour Traffic Volumes.....	17
Table 4	Total Study Area Site-Generated Peak Hour Traffic Volumes.....	18
Table 5	Future Framework Plan Intersection Analyses.....	20
Table 6	Future Framework Plan Condition 1 Intersection Analyses.....	20
Table 7	Future Framework Plan Condition 2 Intersection Analyses.....	21

Introduction

This analysis is part of a larger effort that included market analysis and land use planning. Accordingly, the following report is based on those activities and the Framework plan dated July 2006 as updated April 2008.

Recent development activity in the area surrounding and near to the Morton Grove Metra train station (study area) generated a need to provide a comprehensive plan for the future. The study area is viewed as one of great potential for further transit oriented residential development, as well as supportive neighborhood commercial. A large component of the Village's effort was the formation of a Tax Increment Financing (TIF) district which will help pay for future infrastructure improvements and redevelopment activities. The study area is shown on **Figure 1**.

In 2004 the Village assembled a team of consultants to evaluate area conditions and to prepare a comprehensive Framework Plan (Plan) to guide future development in the study area. The original draft plan was crafted by Farr Associates, S.B. Friedman & Company, McDonough Associates, and Fish Transportation Group over a two year period which included significant public, staff, and policy board input.

The study area currently consists of a mix of light industrial/warehouse uses, residential, and commercial development. In recent years, many of the industrial uses have left and the Village has seized the opportunity to introduce multi-family, Transit Oriented Development (TOD). The planning initiative defined development blocks, parcels, and created a new and revised roadway and circulation plan.

Of particular importance was the ability of the area to function as a pedestrian friendly, commuter and neighborhood commercial activity district. The plan utilizes the special benefits of the commuter rail station as well as its access to open or public spaces and a very good network of local roadways. In short, the plan is an integrated concept but one that puts a special emphasis on pedestrian circulation with a "neighborhood personality."

In 2007, the Village contracted KLOA to review pedestrian, vehicular and bicycle traffic, to project future traffic volumes based on the proposed plan, and to recommend changes and improvements to the circulation network. In order to do this, both existing conditions and future plans were evaluated. It was important to employ the use of traffic engineering standards and judgment, but at the same time reference Context Sensitive Solutions that keep the neighborhood framework in mind. The following report summarizes our analysis and recommendations.

As part of this process, various alternatives were researched and analyzed. The Framework Plan went through multiple iterations and revisions to the type of land uses proposed and their densities, each variation resulted in different results, pros, and cons; a final alternative was then chosen, based on these different findings and was used for the bases of this study.



Aerial Map of Lehigh Ferris Study Area

Figure 1

Approach and Methodology

The transportation and traffic evaluation involved the entire team and included meetings with the public, the consultant team, Village staff and eventually the Village Board. The plan was originally created in large part in consultation with the public through a series of workshops, public hearings, and open houses. KLOA, Inc.'s approach was not to recreate the network of roadways but rather to adjust and reconfigure the network and recommend and test alternative intersection control options where necessary in order to support the lands uses and pedestrian environment. Traffic needs to flow in and out of the area with reasonable efficiency.

In order to do this, existing turning movement (traffic, pedestrian, and bicycle) counts were conducted on Tuesday, June 26, 2007 during the weekday morning (6:30–9:00A.M.) and evening (4:00–6:00P.M.) peak hours at the following four intersections: Lincoln Avenue with Ferris Avenue, Lincoln Avenue with train tracks, Lincoln Avenue with Lehigh Avenue, and Lehigh Avenue with Main Street. Additionally, 24-hour machine average daily traffic counts were conducted on Tuesday, July 10, 2007 and Wednesday, July 11, 2007 for a 24-hour period at the following four locations: along Lincoln Avenue both east and west of Ferris Avenue, along Ferris Avenue north of Lincoln Avenue, and along Lehigh Avenue south of Main Street. In addition to the traffic counts, video observations were made at and near the train station in order to document current operations.

As such, both the existing and future network was tested in a number of ways. *The evaluations, conclusions and recommendations in this report are based on the Framework Plan dated July 2006 and incorporate KLOA's recommendations made in a draft report dated August 8, 2007.*

- Existing traffic, pedestrian, and bicycle conditions and Levels of Service as well as existing roadway network were evaluated as a baseline.
- Approved but not yet constructed (or occupied) dwelling units were identified, tabulated and included in the future conditions and analyses.
- Future development densities and land uses identified in the Framework Plan were tabulated and included in the future conditions and models.
- Relative to the above, the future condition models were based on the April 16, 2008 Draft Framework Plan and were evaluated as three different scenarios:
 1. **Framework Plan** - Assumes the realigned roadway network shown in the plan; redirected existing traffic and added future traffic as a result of the plan through the new roadway network; NO new traffic controls or operations changes.
 2. **Framework Plan Condition 1** - Same as the Framework Plan, but introduces a westbound stop sign on Lincoln Avenue at Ferris Avenue intersection (movement is currently free flow).
 3. **Framework Plan Condition 2** - Same as Condition 1 but with a traffic signal at the intersection of Lincoln Avenue with Ferris Avenue instead of two-way stop sign control.

Existing Conditions

The following pages and **Figures 2** through **6** depict the existing roadway network, existing traffic volumes, existing average daily traffic counts, existing pedestrian and bicycle volumes, and a composite total existing traffic and pedestrian bicycle volumes.

Existing Roadway Conditions

The current network of roadways and travel paths although currently providing connectivity, is somewhat disorganized. The geometries and traffic control of the roads are in some cases confusing. One example is the intersection of Old Lincoln Ave. and Lehigh/Lincoln Avenues which is wide and not well defined to the motorist or pedestrian. Additionally Lincoln Ave. and Ferris Ave. lacks crosswalks on some legs and its alignment requires a large radius on the northwest corner that is unfriendly to pedestrians. During the evening peak hour, southbound Ferris Ave. traffic has a difficult time entering the Lincoln Ave. stream as a stop sign controlled approach. Because this is a train station location which experiences significant pedestrian traffic as well as trucks and vehicles travelling through the area, the complexities of the aforementioned problems are compounded.

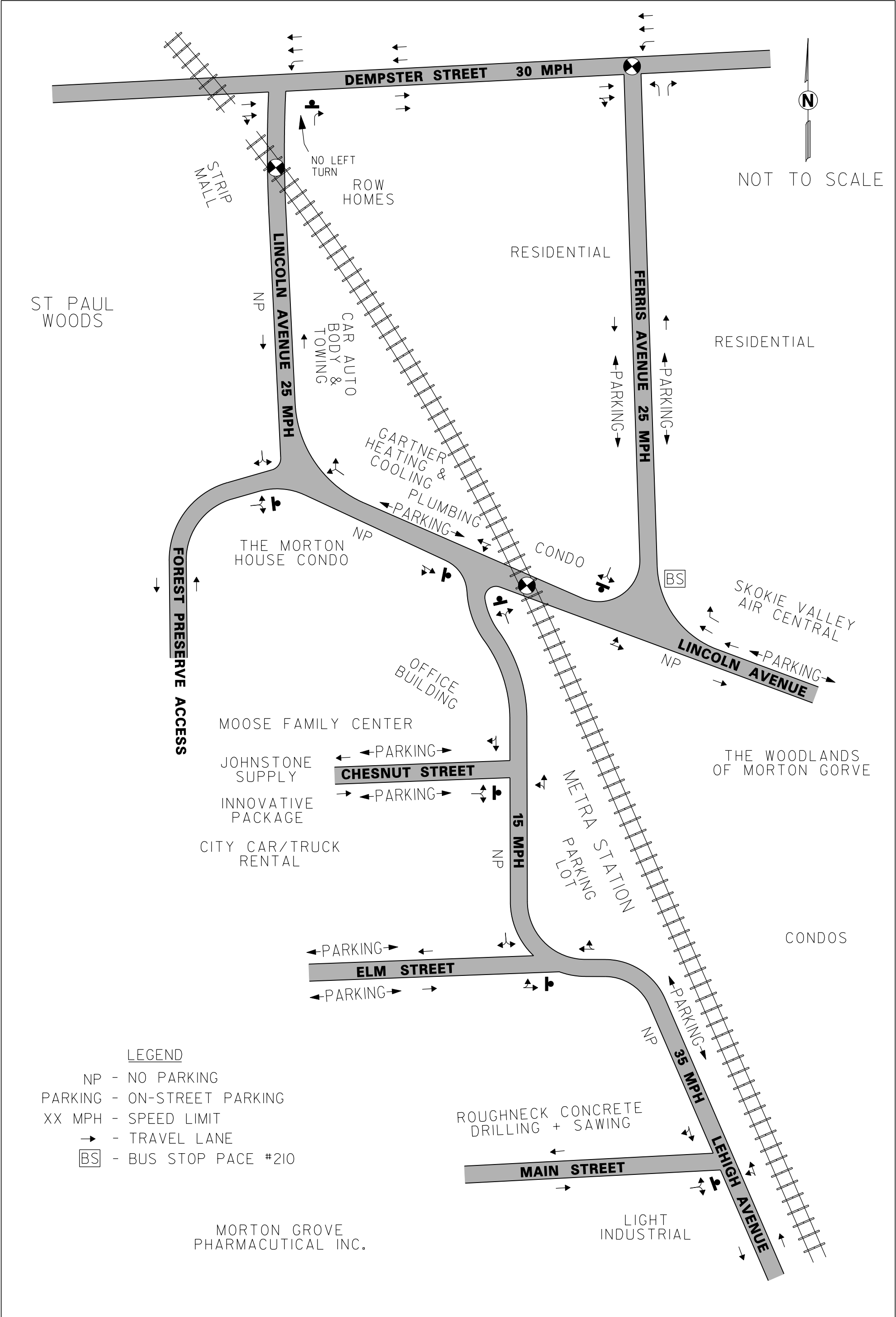
Adding to this situation is the skewed Lincoln Ave. rail crossing. Field observations, as well as video notes of the area, show a number of “gate crashers” and pedestrians rushing across the tracks as the gates are lowering. Data from the FHWA was referenced as part of this study indicating increased operational difficulties with the skew. Also, our observations indicate that it contributes greatly to the previously discussed “disorganization” of the area and intersections.

KLOA conducted an analysis of existing intersection operations based on standards put forth in the Highway Capacity Manual. These standards identify a Level of Service (LOS) based on volumes and delays at an intersection. Accordingly, **Table 1** show the LOS at key study area intersections based on existing volumes of traffic and roadway conditions.

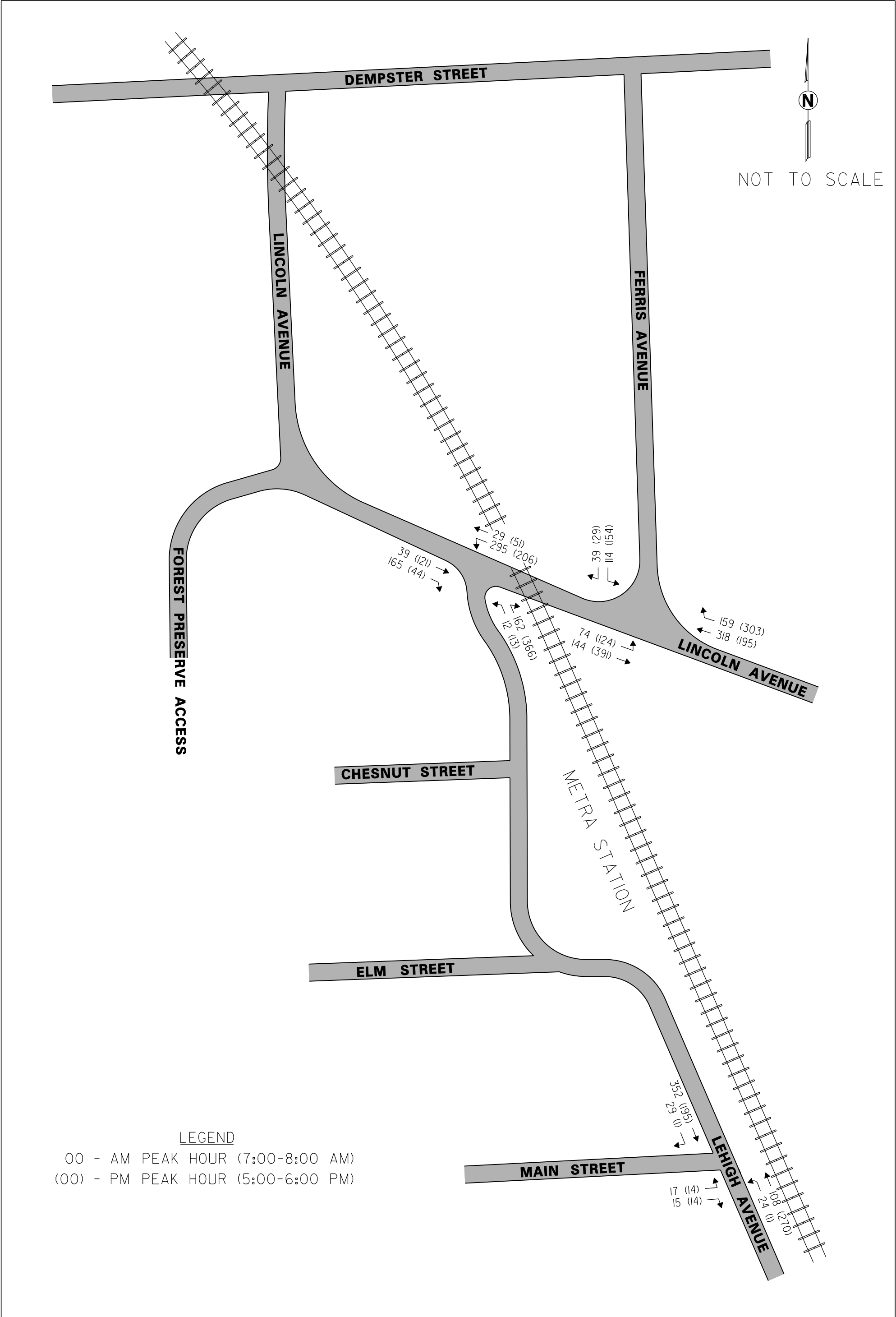
Table 1
EXISTING - INTERSECTION ANALYSES

Intersection	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Lehigh Avenue at Lincoln Avenue ¹ (TWSC)	B	11.8	B	12.0
Lincoln Avenue at Ferris Avenue (TWSC)	C	18.1	E	42.1
Lehigh Avenue at Main Street (TWSC)	B	11.9	B	10.8

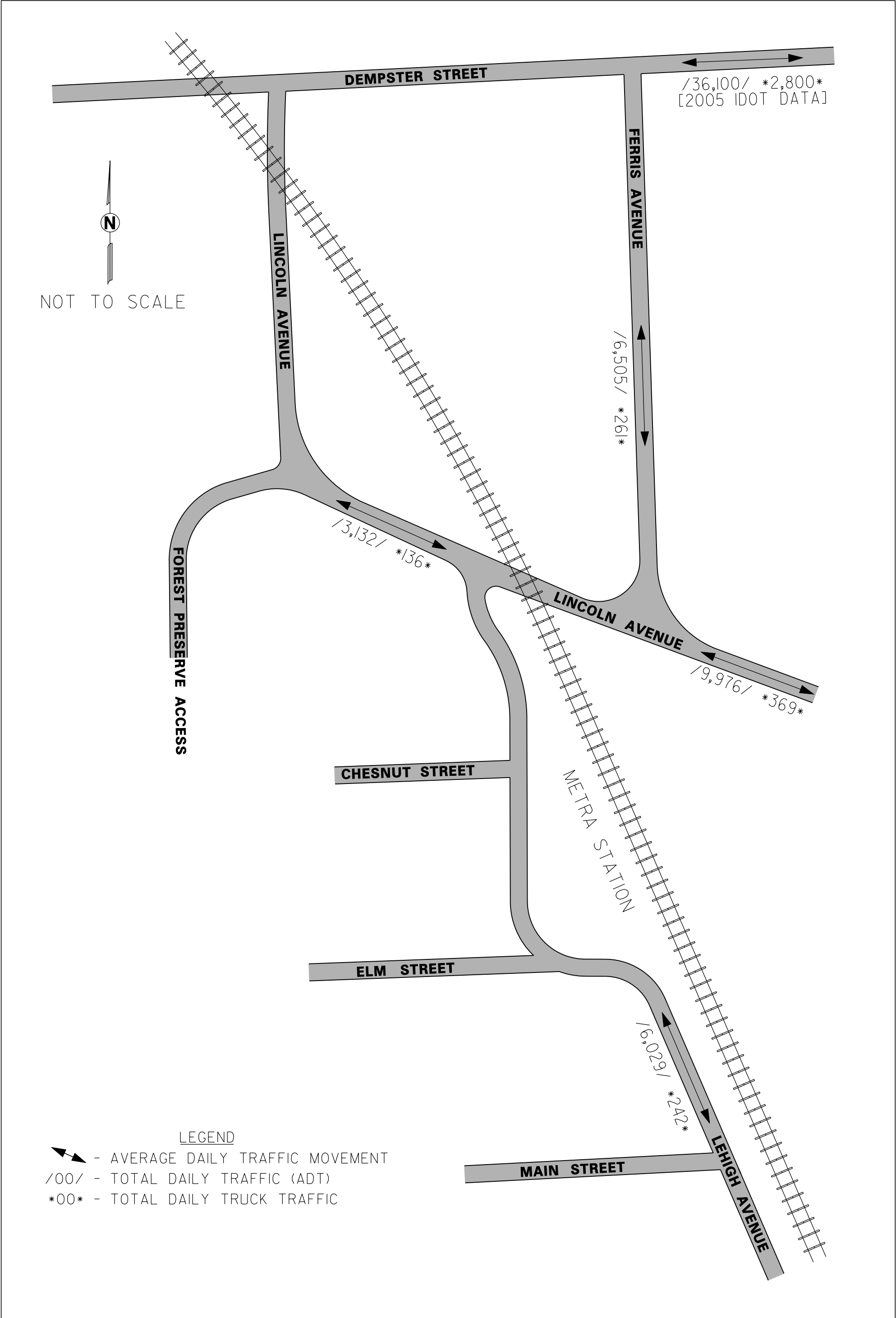
TWSC = Two-way stop controlled intersection.
LOS - For TWSC, it represents the minor approach under stop control
Delay is measured in seconds.




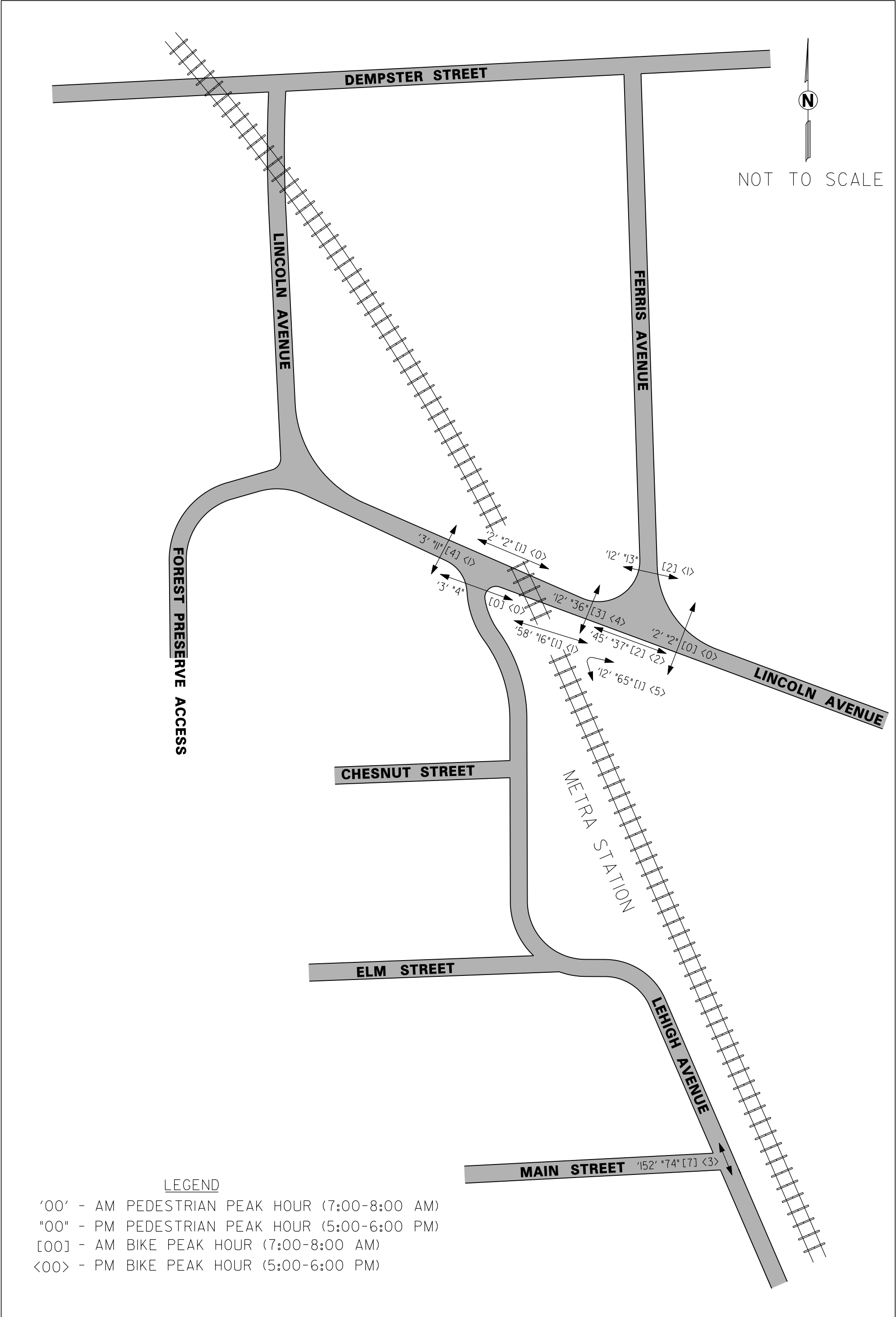
PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: EXISTING ROADWAY NETWORK	PROJECT NO: 07-194
		KLOA
		FIGURE NO: 2




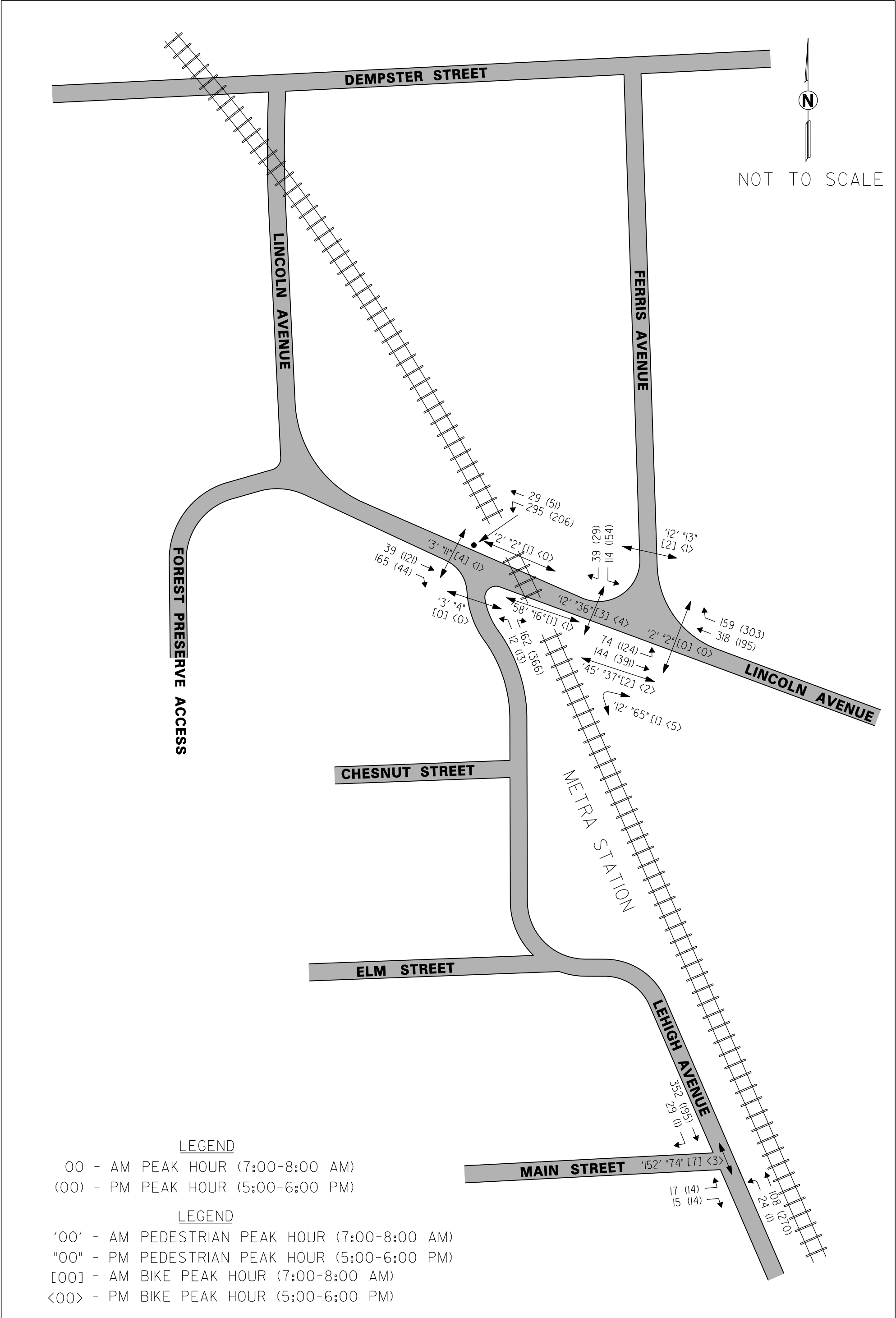
PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: EXISTING PEAK HOUR TRAFFIC VOLUMES (CONDUCTED JUNE 26, 2007)	PROJECT NO: 07-194
		
		FIGURE NO: 3



PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: AVERAGE DAILY TRAFFIC VOLUMES (CONDUCTED JULY 10&11, 2007)	PROJECT NO: 07-194
		 FIGURE NO: 4



PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: EXISTING PEDESTRIAN AND BIKE PEAK HOUR VOLUMES (CONDUCTED JUNE 26, 2007)	PROJECT NO: 07-194
		
		FIGURE NO: 5



PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: EXISTING PEAK HOUR TRAFFIC, BIKE & PEDESTRIAN VOLUMES (CONDUCTED JUNE 26, 2007)	PROJECT NO: 07-194
		FIGURE NO: 6

Evaluation and Recommendations

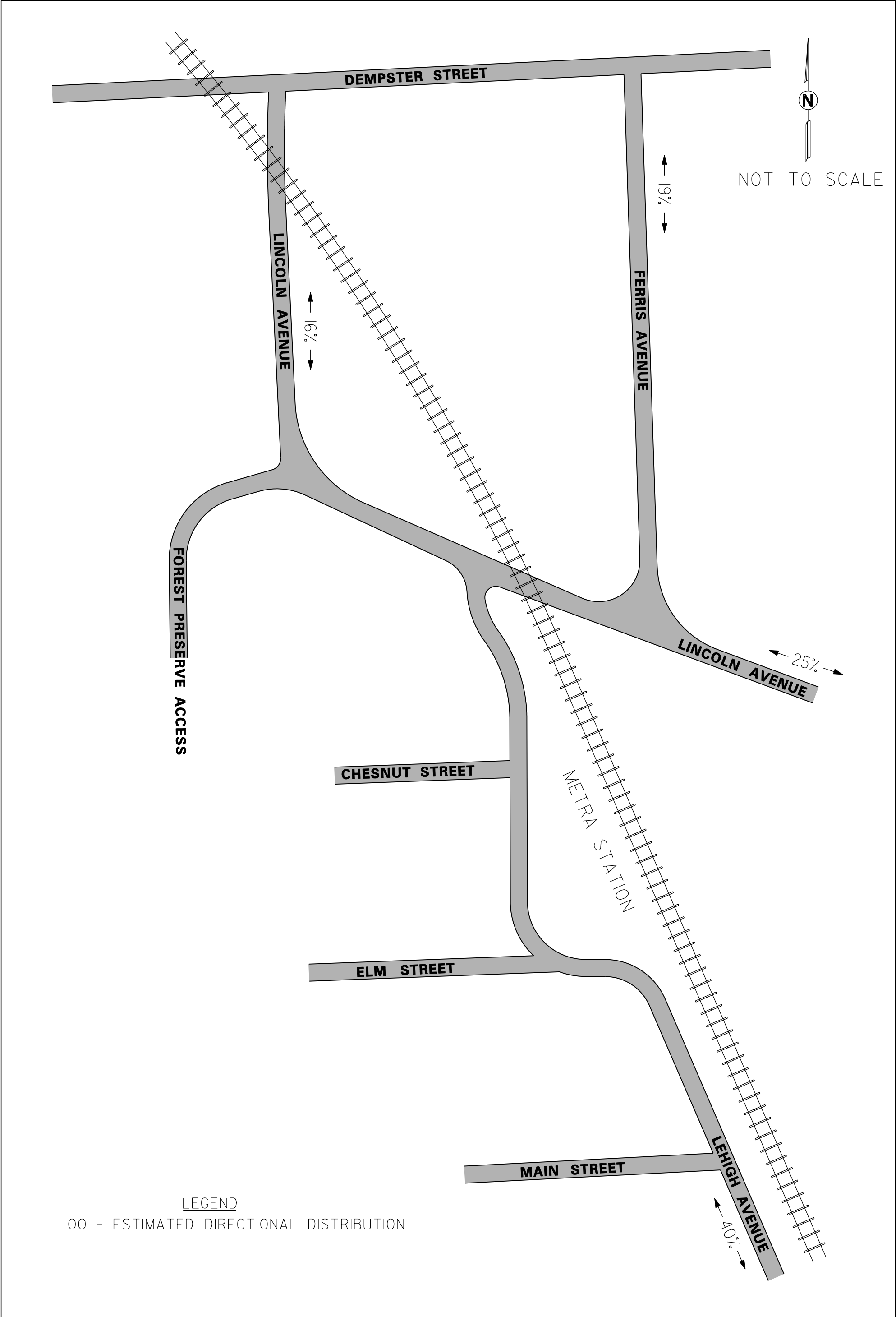
The resulting future traffic as a result of the Framework Plan as revised April 16, 2008 was subjected to basic planning and engineering standards that identify the operations of the roadways in terms of Levels of Service. As such, is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. Control delay is that portion of the total delay attributed to the traffic signal or stop sign control operation, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Level of Service A is the highest grade (best traffic flow and least delay), Level of Service E represents saturated or at-capacity conditions, and Level of Service F is the lowest grade (oversaturated conditions, extensive delays). Also considered was the need for improved pedestrian circulation which weighed heavily on the introduction of traffic signals at the Lincoln Avenue-Ferris Avenue intersection.

Directional Distribution

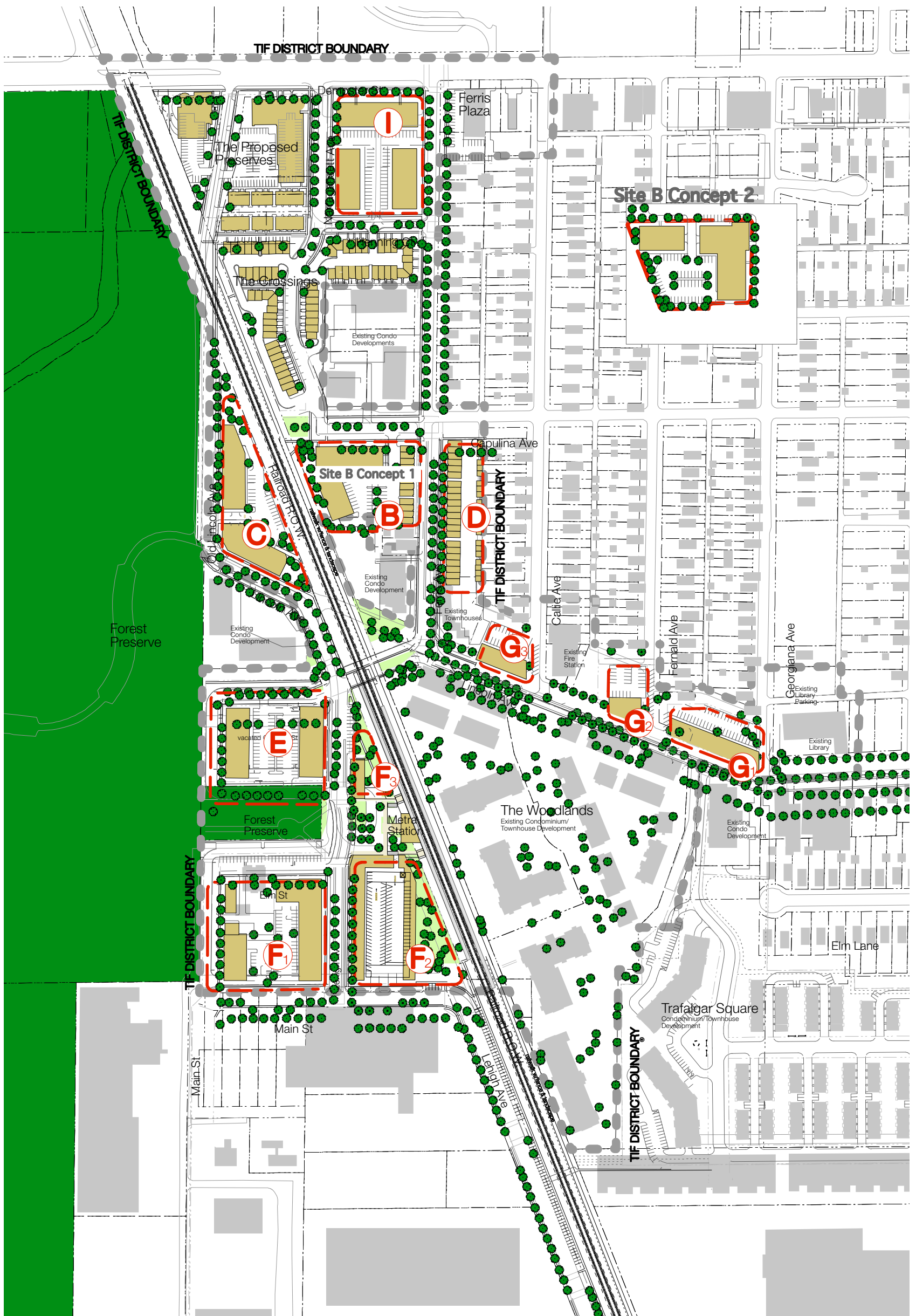
In order to evaluate future conditions, the existing travel patterns of vehicles were identified and used for future analyses. These patterns reflect the approach and departure of traveling vehicles to and from the study area. New traffic as a result of the Framework Plan is assigned generally in accordance with these travel patterns and with respect to any changes in the roadway network. **Figure 7** illustrates the estimated directional distribution based on existing traffic volumes.

Future Traffic Projections

The following tables and annotations identify the new trip tabulations for the area as follows: **Table 2** shows the potential trips from recently completed, under construction, or approved developments that are either partially occupied or not yet occupied. **Table 3** shows the new trips from planned projects as a result of the framework plan. **Table 4** shows the total of both Tables 2 and 3 or the total anticipated new traffic as a result of the Framework Plan, the revised Framework Plan dated April 16, 2008 is illustrated in **Figure 8**.



PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: ESTIMATED DIRECTIONAL DISTRIBUTION	PROJECT NO: 07-194
		KLOA
		FIGURE NO: 7



Scale: 1"=300'-0"
0 30' 60' 100' 150' 300' north



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Real Estate Advisors and Development Consultants

Framework Plan: R.O.W. & Development Parcels

DRAFT DRAFT DRAFT April 16, 2008

Lehigh/Ferris Subarea
Village of Morton Grove

Table 2
**RECENTLY COMPLETED, UNDER CONSTRUCTION, OR APPROVED DEVELOPMENTS
 ADDITIONAL SITE-GENERATED PEAK HOUR TRAFFIC VOLUMES NOT CAPTURED IN COUNTS**

DEVELOPMENT	Total Site Density	Currently Occupied	ITE Land-Use Code	Remaining Available Units	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
					In	Out	Total	In	Out	Total
The Woodlands	322 Condo	317 Condo	230	5 Condo	1	4	5	3	2	5
	78 Townhomes	77 Townhomes	230	1 Townhomes	0	1	1	1	0	1
Trafalgar Square	150 Condo	54 Condo	230	96 Condo	8	42	50	39	19	58
	110 Townhomes	110 Townhomes	230	0 Townhomes	*	*	*	*	*	*
The Crossings	65 Townhomes	12 Townhomes	230	53 Townhomes	5	26	31	24	12	36
The Preserves	11,800 s.f. Retail	0 s.f. Retail	814	11,800 s.f. Retail	NA	NA	NA	22	28	50
	54 Condo	0 Condo	230	54 Condo	5	26	31	24	12	36
	21 Townhomes	0 Townhomes	230	21 Townhomes	3	12	15	11	6	17
Total Trips:					22	111	133	124	79	203

NA – ITE Trip Generation Manual does not supply AM Specialty Retail trip generation rates, such land-uses are typically closed during the AM Peak Hour.

* – Occupied during traffic counts, therefore site does not generate additional traffic volumes.

Table 3**APRIL 2008 FRAMEWORK PLAN – FUTURE PLANNED FRAMEWORK PLAN DEVELOPMENT
SITE-GENERATED PEAK HOUR TRAFFIC VOLUMES**

Redevelopment Site	Total Units at Site	ITE Land-Use Code	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
			In	Out	Total	In	Out	Total
A	The Crossings	*	*	*	*	*	*	*
B (Concept 2)	57 Condos	230	6	27	33	25	13	38
	4,000 s.f. Retail	814	NA	NA	NA	14	17	31
C	84 – Senior Housing	252	3	4	7	6	4	10
D	22 Townhomes	230	4	11	15	11	5	16
E (Buildings 1&2)	80 Condos	230	10	36	46	36	15	51
F1	90 Condos	230	11	37	48	37	16	53
F2	78 Condos	230	10	35	45	35	15	50
	6,207 s.f. - Retail	814	NA	NA	NA	16	20	36
F3	4,504 s.f. - Retail	814	NA	NA	NA	14	18	32
	9,008 s.f. - Office	710	24	4	28	15	73	88
G1	8 Condos	230	2	6	8	6	3	9
	13,582 s.f. - Retail	814	NA	NA	NA	25	30	55
G2	9 Condos	230	2	5	7	5	3	8
	5,545 s.f. - Retail	814	NA	NA	NA	16	19	35
G3	4 Condos	230	1	4	5	3	2	5
	7,287 s.f. - Retail	814	NA	NA	NA	17	22	39
I	51 Condos	230	4	29	33	24	14	38
	13,864sf - Retail	814	NA	NA	NA	25	30	55
J	The Preserves	*	*	*	*	*	*	*
TOTAL			77	198	275	330	319	649

NA – ITE Trip Generation Manual does not supply AM Specialty Retail trip generation rates, such land-uses are typically closed during the AM Peak Hour.

* – Occupied during traffic counts, therefore site does not generate additional traffic volumes. See Table 2 above.

Table 4
TOTAL STUDY AREA
ADDITIONAL SITE-GENERATED PEAK HOUR TRAFFIC VOLUMES

Table		Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
		In	Out	Total	In	Out	Total
1	Recently Completed, Under Construction, Or Approved Developments	22	111	133	124	79	203
2	Planned Projects As A Result Of The Framework Plan	77	198	275	330	319	649
TOTAL		99	309	408	454	398	852
TRANSIT ORIENTED DEVELOPMENT REDUCTION (20 %)		(19)	(61)	(80)	(90)	(79)	(169)
TOTAL NEW TRIPS		80	248	328	364	319	683

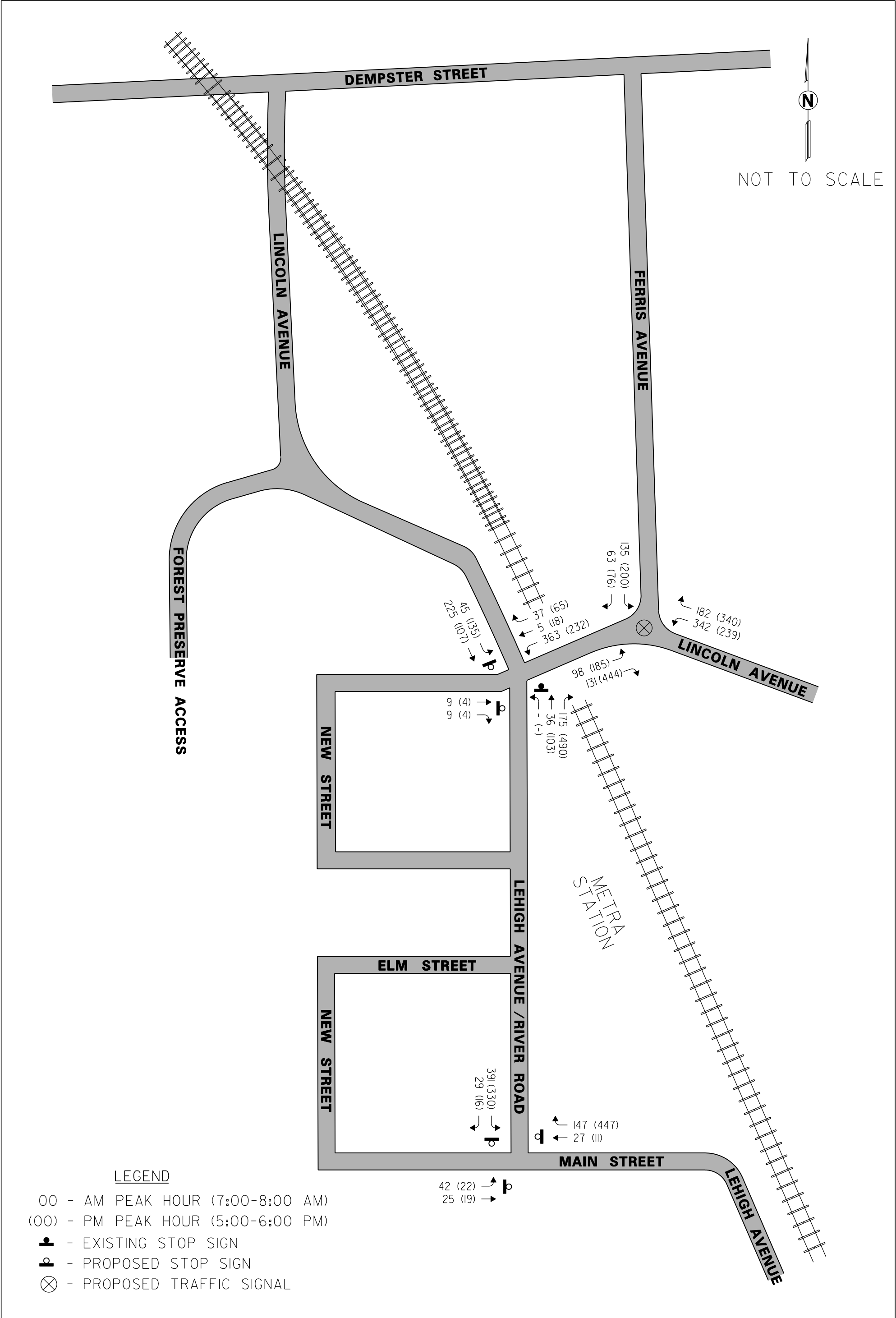
The following **Figure 9** shows the reassignment of both existing and future traffic volumes through the proposed Framework roadway network (dated April 16, 2008). This *new traffic* as shown in Table 4 was derived from previously discussed methodologies.

It should be noted that the original Framework Plan dated July 2006 considered a new rail crossing at Capulina Street and a corresponding vacation of the existing crossing on Old Lincoln Avenue. However, subsequent recommendations by KLOA, Inc. and agreement by the Village resulted in amending the plan (dated April 16, 2008) to continue with the original Old Lincoln Avenue alignment and not provide a new crossing at Capulina Street. This analysis reflects that agreed upon roadway network.

Intersection Capacity Operations

The key intersection of Lincoln Avenue with Ferris Avenue, Lincoln Avenue with Lehigh Avenue, and Lehigh Avenue with Main Street, were subjected to a LOS modeling analysis (refer to previous explanation of LOS) with all new traffic from the framework plan assigned to them. As previously discussed each was evaluated under three different traffic control scenarios (i.e., no controls; stop sign; and traffic signal). The results of this capacity analysis are illustrated in the following three tables:

- **Table 5** – Framework Plan; No new traffic controls or operations changes.
- **Table 6** – Framework Plan Condition 1; Lincoln Avenue westbound traffic under stop sign control at intersection with Ferris Avenue.
- **Table 7** – Framework Plan Condition 2; Lincoln Avenue with Ferris Avenue intersection under signalized control.



PROJECT: LEHIGH/FERRIS SUBAREA STUDY MORTON GROVE, ILLINOIS	TITLE: FUTURE FRAME WORK PLAN TRAFFIC VOLUMES	PROJECT NO: 07-194
		FIGURE NO: 9

Table 5
FRAMEWORK PLAN - INTERSECTION ANALYSES
EXISTING CONTROLS

Intersection	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Lehigh Avenue at Lincoln Avenue ¹ (TWSC)	C	21.5	D	32.3
Lincoln Avenue at Ferris Avenue ² (TWSC)	C	21.3	F	184.0
Lehigh Avenue at Main Street ³ (AWSC)	B	14.0	B	14.5

TWSC = Two-way stop controlled intersection.
 AWSC = All-way stop controlled intersection
 LOS - For AWSC, it represents the intersection as a whole; for TWSC, it represents the minor approach under stop control
 Delay is measured in seconds.
¹ = Denotes: Southbound, Northbound, and Eastbound under stop sign control, Westbound is free flow
² = Denotes: Southbound under stop sign control, Eastbound and Westbound are free flow
³ = Denotes: Southbound, Westbound, and Eastbound under stop sign control

Table 6
FRAMEWORK PLAN - INTERSECTION ANALYSES
CONDITION 1
WESTBOUND LINCOLN AVENUE UNDER STOP SIGN CONTROL

Intersection	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Lehigh Avenue at Lincoln Avenue ¹ (TWSC)	C	21.5	D	32.3
Lincoln Avenue at Ferris Avenue ² (TWSC)	B	13.8	D	33.6
Lehigh Avenue at Main Street ³ (AWSC)	B	14.0	B	14.5

TWSC = Two-way stop controlled intersection.
 AWSC = All-way stop controlled intersection
 LOS - For AWSC, it represents the intersection as a whole; for TWSC, it represents the minor approach under stop control
 Delay is measured in seconds.
¹ = Denotes: Southbound, Northbound, and Eastbound under stop sign control, Westbound is free flow
² = Denotes: Southbound and Westbound under stop sign control, Eastbound is free flow
³ = Denotes: Southbound, Westbound, and Eastbound under stop sign control

Table 7
FRAMEWORK PLAN - INTERSECTION ANALYSES
CONDITION 2
LINCOLN AVENUE / FERRIS AVENUE UNDER SIGNAL CONTROL

Intersection	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Lehigh Avenue at Lincoln Avenue ¹ (Signal)	C	21.5	D	32.3
Lincoln Avenue at Ferris Avenue ² (TWSC)	A	8.9	B	10.5
Lehigh Avenue at Main Street ³ (AWSC)	B	14.0	B	14.5

Signal = Signal controlled intersection.

TWSC = Two-way stop controlled intersection.

AWSC = All-way stop controlled intersection

LOS - For AWSC and SIGNAL, it represents the intersection as a whole; for TWSC, it represents the minor approach under stop control

Delay is measured in seconds.

¹ = Denotes: Intersection under signalized control, interconnected with train tracks.

² = Denotes: Southbound and Westbound under stop sign control, Eastbound is free flow

³ = Denotes: Southbound, Westbound, and Eastbound under stop sign control

As shown in the tables, future traffic volumes are such that the intersection of Ferris Avenue with Lincoln Avenue fails without new traffic control introduced. The introduction of a stop sign at the intersection mitigates the problem as it improves the LOS to a LOS D. However, the introduction of a traffic signal will further improve the LOS and allow for both improved and safer pedestrian flow. Therefore, *signalization is recommended at this intersection*. This will also assist pedestrians and bicyclists in crossing the street from all directions as currently only the southbound movement stops.

The new signal needs to be interconnected with the rail crossing in order to clear eastbound movements as they cross the tracks. Signals are not recommended on the west side of the tracks at Lincoln Avenue and Lehigh Avenue.

The intersections of Lehigh Avenue with both Lincoln Avenue and also Main Street (new alignment) were also subjected to capacity analyses. Both were found to perform well under future conditions and under stop sign control. Westbound movements on Lincoln Avenue at Lehigh Avenue must remain as free flow due to the proximity of the rail crossing. As such, and can be seen in the above tables, the other analyzed intersections within the study will continue to operate at good levels of service. The new roadway network, as proposed on the April 16, 2008 Framework Plan and the additional traffic that will be generated by the proposed Plan will not have a significant impact on the surrounding roadways; therefore no additional traffic control improvements are recommended or needed as a result of the Plan.

Recommendation: Signalize Lincoln Avenue and Ferris Avenue.

Roadway and Network and Operations

The plan calls for some substantial changes to the area roadway network. The overall mission of the study was not only to move vehicles efficiently but also to provide for a safer and more comfortable environment for pedestrians and bicyclists. The following lists the major proposed changes and comments.

- **Realignment of Lincoln Avenue Rail Crossing** - Currently the roadway crosses at a skew. The plan calls for a change to a perpendicular alignment. This is an improvement for both vehicles and pedestrians and will complement future signalization. For instance, our visual observations indicated that the current skewed alignment is longer and appears more confusing to pedestrians as they negotiate a longer path. The new alignment, in our opinion, will provide for a more “organized” intersection that should include pedestrian crossing gates, signage and coordination with a future signal at Ferris Avenue. Discussions with Metra operations officials indicate a desire to have this alignment changed to 90 degrees as planned. Also, as part of this study, KLOA researched and referenced a Federal Highway Administration (FHWA) publication entitled Railroad-Highway Grade Crossing handbook, August 2007. Section 4 (L2) of the handbook specifically cites *“The ideal crossing geometry is a 90-degree intersection of track and highway every effort should be made to construct crossings in this manner.”* Furthermore the handbook states: *“Desirably, the highway should intersect the tracks at a right angle with no nearby intersections or driveways. This layout enhances the driver’s view of the crossing and tracks and reduces conflicting vehicular movements from crossroads and driveways”*.

Accordingly, we feel strongly that this realignment and related improvements to the crossing, curb, gutter, sidewalk and overall pedestrian environment and a more clearly defined intersection should be implemented. This change is recommended. In addition, the general area of the intersection will become more pedestrian friendly and will allow for an improved flow of pedestrians within this area. Pavement marking should be provided at the desired pedestrian crossing locations to further improve this area.

- **Pedestrian Geometric Improvements** - In order to make the area more pedestrian friendly, certain geometric and roadway cross section changes should be implemented. A redesign to include reduced corner radii at certain intersections such as Ferris Avenue and Lincoln Avenue should be planned and constructed. This should only be done in conjunction with truck rerouting as suggested and discussed below. Further study along Lincoln Avenue east of the study area should be performed to identify and plan a more pedestrian friendly street that conforms to the Village’s goals and vision for the area.
- **Vacation of Old Lincoln Avenue Rail Crossing - Introduction of a new crossing at Capulina Avenue.** Because of the necessary reassignment of significant traffic volumes to the already congested Ferris/Lincoln Avenue intersection, as well as associated costs, this is not recommended.

- **Realignment of Lehigh Avenue at Main Street** - Formation of a new “T” intersection as all way stop sign controlled. This intersection will experience some high volumes of traffic in the future. These new volumes and new geometry were subjected to capacity modeling without signalization. Because there is no opposing northbound movements (no south leg), the intersection can operate as planned (“T” alignment) under all way stop control. In the future, if Lehigh Avenue is extended south to connect with a northerly extension of River Drive, the intersection needs to be reevaluated for possible signalization.
- **Truck Routing** - In the future, heavy trucks should be prohibited from the study area with exceptions made for local deliveries. Alternate truck routes servicing the industrial areas to the south along Lehigh Avenue should be explored that favor Gross Point Road or Austin Avenue to the east, Waukegan Road/Caldwell Avenue to the west, Oakton Street to the south and Dempster Street to the north.

Conclusion

The Framework Plan provides a carefully thought out blueprint for the future development of the study area. At the same time, implementation of the recommended improvements to the roadway and pedestrian network discussed in this report will provide for a compliment of mobility enhancements. Pedestrians and bicyclists will find it easier to travel to and from the various land uses including the Metra station and recreational areas to the west. Motorists traveling to the area for specific destinations will find street operations to be favorable. With these plans the area over time will transition from a network of through traffic roadways to one of a pedestrian friendly destination of complementary retail, residential and public land uses.