DRAFT

Illinois Route 53/120 Project

Blue Ribbon Advisory Council
Draft Resolution and Summary Report

May 9, 2012

This document is still a draft, and it should serve as a tool to generate discussion and comments. The language and content are NOT FINAL. This is an opportunity to provide specific revisions, additions and deletions.

All comments received by the deadline will be compiled and made available to Council Members for discussion and deliberation during the May 18th Council meeting.

In order to be included in the comment log sent to the Council, comments must be received by 1:00pm CST on Wednesday, May 16th. You are welcome to send comments after the deadline for later consideration and share comments during the meeting.

To submit comments, please fill out the online comment form available at www.frego.com/route53

Team Acknowledgements

The Illinois Tollway worked in partnership with the Chicago Metropolitan Agency for Planning (CMAP) and Lake County Department of Transportation in implementing the work of the Council. In addition to Tollway consultants AECOM, CDM Smith and HNTB, several nationally recognized experts also assisted in the Council's work, including Applied Ecological Services, Fregonese Associates, Huff and Huff, and Walter Kulash.

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Senator Terry Link	State Senator, 30th District, Democrat
Senator Suzi Schmidt	State Senator, 31st District, Republican

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Introduction

Illinois Route 53/120 Project

Blue Ribbon Advisory Council
Draft Resolution and Summary Report

Challenges for a New Road

The History of Route 53/120

The State of Illinois has long considered a northern extension of Illinois Route 53 through central Lake County. Since the early 1960s, the Illinois State Toll Highway Authority (The Tollway) and many other state and local agencies have been involved in planning for improvements in the Central Lake County Corridor. Over the years, growth in population, increasing environmental pressures, desires for new economic development and rising congestion have led to a revival of the conversation around a new road.

Currently, arterials in the study corridor experience significant congestion, especially eastbound and southbound in the morning, and westbound and northbound in the evening. Recent population and employment growth trends have added to the travel demands, with the greatest population growth occurring at the northern part of the project area and the greatest employment growth occurring on the southern part. One focus point of the council's discussions is a large bottleneck that occurs at the current terminus of Route 53 at Lake Cook Road at the southern edge of Lake County.

Most recently, the Chicago Metropolitan Agency for Planning (CMAP) included an extension of Route 53 and improvements to Route 120 in their comprehensive regional plan, GO TO 2040. The plan noted that an extension of Route 53 connecting to Route 120 could ease congestion that has resulted from Lake County's rapid development, and suggested the project could improve access and mobility in the county and the region as a whole. GO TO 2040 called for a 21st Century urban highway – a modern boulevard with a smaller footprint to minimize potential negative impacts while protecting the natural environment and preserving the character of nearby communities.

But how do we accomplish this? Any corridor improvements could have effects on the environment and nearby communities of central Lake County. Improved access will stimulate economic and residential development and relieve congestion, but it can also stimulate rapid and unplanned development. This question has been the root of the challenge over the years.

Lake County is especially vulnerable to the potential disruptions caused by a new road. It has the greatest number of unique and threatened ecological resources in the state of Illinois, including lakes and ponds, streams, extensive wetlands, native prairie remnants and significant acreages of restored ecosystems. The county has the largest number of state and federal threatened, endangered and special concern species of any county in Illinois and over 54 populations of these species and their critical habitats are found within the zone of impact of the road scenarios[1]. There are 14 Illinois Natural Areas Inventory sites within two miles of the alignment options for Route 53/120. Historically, because the proposed right of way for a new road threatens these assets, environmental and conservation organizations have opposed its development.

Moving the Project Foward

In response to these challenges and the need for a coordinated, transparent and accountable approach, a Blue Ribbon Advisory Council was established by the Tollway in the fall of 2011. The Council was tasked with developing a regional consensus on whether the Tollway should move forward, determine the scope and configuration, the design and elements, and to outline how to finance the project. The Council included public officials as well as representatives from business, labor, planning and environmental groups.

The recommendations of the Council and the outcomes of the Council's work are presented here in the **Resolution** and the **Summary Report**. The Resolution is organized around recommended performance requirements of a new road, suggested design characteristics (including specific characteristics for priority sensitive areas), potential funding and financing options, and proposed next steps for the project. The Summary Report provides an overview of the Council's efforts leading to the Resolution and provides a more detailed background into the context of a new road for Lake County. It also provides the results of the scenario planning process and design workshop that the Council engaged.

[1] Illinois Department of Natural Resources Natural Heritage Database

Route 53/120 Project Area

The Route 53/120 project is intended to serve central Lake County extending north from the terminus of Route 53 and Lake Cook Road for 12.5 miles to just south of Route 120. The extension would continue to the east, where it would provide enhanced access and mobility to and from the existing interchange at I-94. It would also continue to the west, to provide new access and enhanced mobility to U.S. Route 12. Much of the needed right of way is currently owned by the State of Illinois. While the general corridor for improvements has been defined, the exact location and configuration for improvements is not yet final. Ultimately, the extension must coexist with existing residential development and projected commercial development, as well as wetlands, agriculture and organic food production, and the natural environment, including many sensitive and conservation areas located throughout the corridor.

Figure X: Lake County and Project Area

Guiding Principles

The Role of Guiding Principles

To clarify the goals and direction of their work, the Blue Ribbon Advisory Council established a set of guiding principles in October 2011. Guiding principles are critical to decision making and implementation for any planning project because they serve to clearly define the outcomes that signify a project's success and the values of a community. The Route 53/120 Guiding Principles were integral to organizing the Council's working groups and the work performed throughout the process. They also guided questions about the importance of community connections, environmental impacts, congestion, improvements to the ways people get around, and how to pay for the project. The proposed Route 53/120 facility should reflect the guiding principles and the values that they establish, especially the use of innovative and environmentally beneficial design solutions to improve mobility and access within central Lake County.

Route 53/120 Guiding Principles

1. Enhance mobility and accessibility, and relieve congestion, in the Central Lake County Corridor.
2. Seek innovative design solutions for a safe, integrated, multi-modal corridor that preserves the environment and the character of nearby communities, and enhances their economic vitality.
3. Analyze potential funding options and pursue corridor concepts to the extent that they are financially viable, fiscally sustainable and equitable.
4. Minimize environmental and long term development impacts of transportation infrastructure and operations.
5. Promote environmental enhancements and sustainable practices in all aspects of project development, implementation and operations, and strive to improve the overall environment.
6. Promote diversity in all aspects of project development, implementation and operations.
7. Develop and apply innovations in all aspects of the project to create a 21st Century modern boulevard that serves as a national and international model.
8. Cooperate with agencies and municipalities to deliver the Council's work in a transparent and accountable manner.

The Council's Resolution for a Right-Sized Illinois Route 53/120

Executive Summary

Consensus statements were added to the document to foster discussion and give Council members material to react to.

Advisory Council Recommendations (DRAFT)

The Blue Ribbon Advisory Council has successfully reached a consensus view that a right-sized Illinois 53/120 project has sufficient merit and regional benefit to warrant further development. The Council's process represents a significant step forward in realizing a 21st Century "modern boulevard" in the central Lake County Corridor. The design and environmental requirements and commitments codified in this document provide a blueprint for detailed project development, and lay a solid foundation for additional coordination with local governments and other stakeholders.

The Council answers three questions that have guided this process:

Is there consensus for the Tollway to move forward?

The Council agrees that a new Route 53/120 project, built according to the requirements set forth in this resolution, should be constructed to enhance mobility, relieve congestion, promote orderly development and ensure environmental sensitivity in the central Lake County Corridor.

What are the scope, configuration and design elements of a new roadway?

The Council agrees that the new Route 53 should be a four-lane, limited access, tolled parkway with a 45 mile-per-hour maximum operating speed. The Council stresses that design elements defined in this resolution – such as a depressed sections, earthen berms and stormwater treatment features – are essential requirements and shall not be considered optional during the detailed design process. The Council has developed alignment options for the configuration of Route 120, and all should be carried forward for further study during detailed design.

How should the project be financed?

The Council agrees that the project should be funded through the use of tolling, under a rate structure that includes congestion pricing and indexing of toll rates. The Council understands that other revenue options will be necessary to fund the project, and recommends a detailed plan be developed in coordination with local governments. The Council supports tolling existing Route 53 from Lake Cook Road to I-90 and a cooperative approach to develop a tolling plan that is equitable and uniform for all access points in Lake County; including adding tolls to existing un-tolled access points, adding tolls at the state border and adjusting the rates at the mainline Waukegan Plaza on the Tri-State Tollway. The Council also requires identification of local revenue sources, and supports the use of Tollway system generated revenues to enable this project which is vital to the region's mobility, economic development and quality of life.

Advisory Council Resolution Map

The Council Resolution Map provides a visual guide to the Council's consensus on the most important aspects of the Route 53/120 project. This inludes roadway design, interchange and crossing design, areas of potential economic development, sensitive lands, residential areas, and sites for stormwater treatment polishing areas. In the north, the proposed alignment options for Route 120 are represented on the map.

Right of Way and Corridor Definition

In general terms, the roadway corridor is 300 feet wide running north to south along Route 53 and varies between 100-300 feet east to west, depending on the final alignment selected. The Illinois Department of Transportation has acquired and reserved a 300-foot wide right of way, primarily along Route 53. Final right of way needs will be dependent on a variety of design considerations including preferred roadway scenario, roadway alignment – horizontal and vertical, height and depth of berms, median width, stormwater management needs, off-site mitigation and enhancement, pedestrian accommodations, wildlife crossings, local road improvements, and interchange design.

A cost estimate of $200-$350 million for new rights of way is being held as a placeholder at this stage of the project. A more refined right of way evaluation will be conducted in future phases to define needs, identify ownership and parcel information and refine cost estimates.

Roadway Design

- Depressed roadway (5'-7'), berms (5'-7'), environmental treatments, with mainline depressed interchanges
- Depressed roadway (5'-7'), berms (5'-7'), environmental treatments, narrow median with mainline depressed intechanges
- At-grade roadway, widen and resurface, environmental treatments
- Elevated, open causeway on pylons through wetlands
- At-grade roadway, split couplet

Specific Interchange and Crossing Design

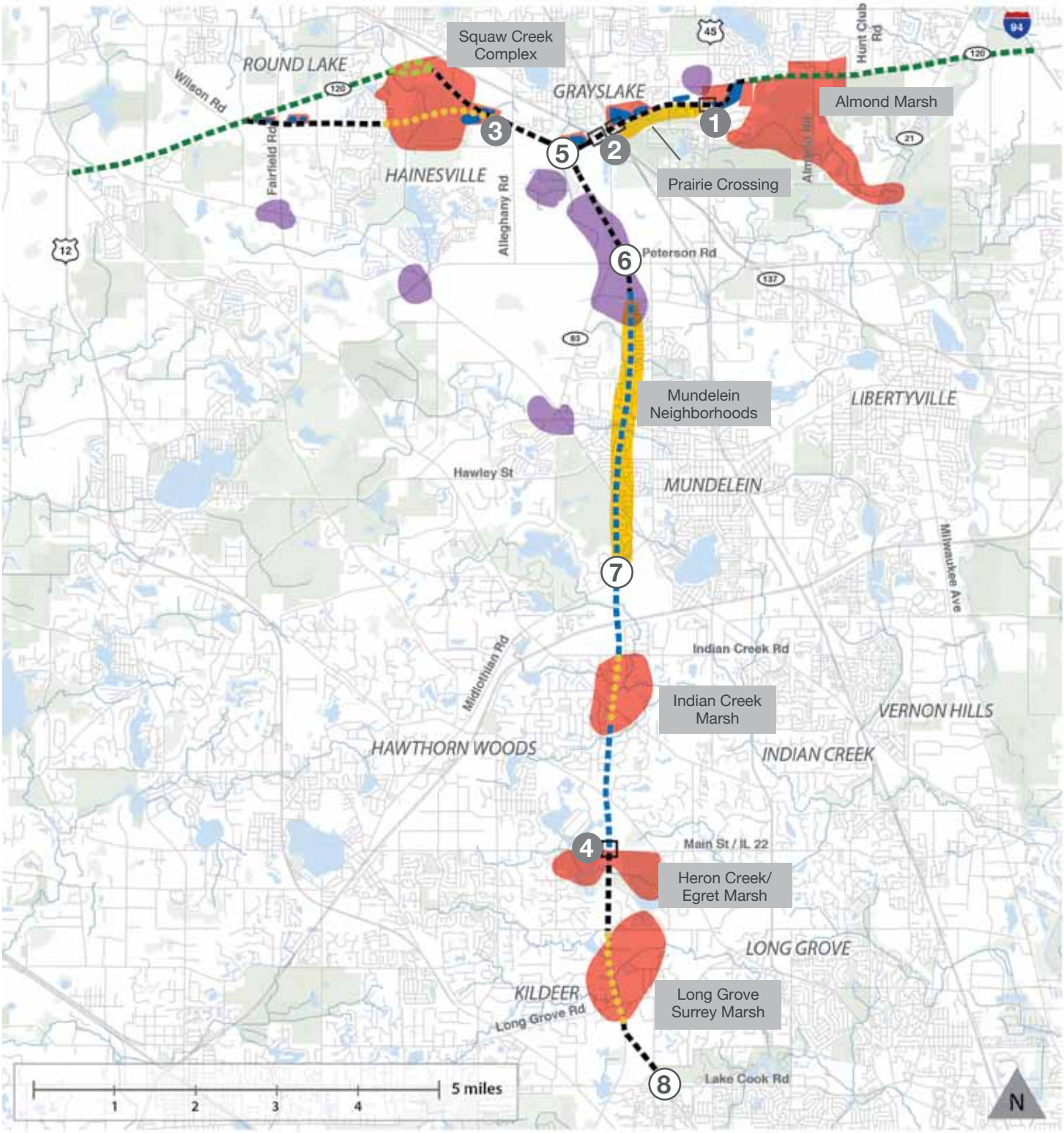
1. Mainline depressed interchange
2. Tunnel or underpass beneath railroad tracks
3. At-grade intersection
4. Mainline depressed interchange with standard median

5-8 Intersection/Interchange location - *specific type needs to be determined*

Land Use

- Priority sensitive lands *(includes lands initially identified for further protection, restoration and/or mitigation)*
- Residential areas
- Potential new economic development areas
- Sites identified for stormwater treatment

Figure X: Council Resolution Map



Advisory Council's Key Recommendations

From the Counci's consensus, five key recommendations have emerged that form the Council's Resolution on the best way to move forward with a right-sized Route 53/120 project. These recommendations are aligned with the Guiding Principles as well as the scope, configuration and design elements agreed upon by the Council.

1. Create a Transportation System That Preserves the Environment and Nearby Communities and Enhances Connectivity

In order to achieve a modern, sustainable and innovative transportation system that meets the goals of the Guiding Principles, the Council recommends a set of essential roadway **design standards** and **performance standards.** These standards describe the physical elements and the core functions of the new roadway as the Council has agreed to.

2. Design a Context Sensitive Roadway

The Council recommends specific context sensitive **roadway designs** for the proposed facility that directly respond to the environment and the communities around the right of way. A context sensitive approach ensures that the same design is not applied to the entire length of the roadway, but finds a balance between the goals of environment and open space preservation, mobility and accessibility.

3. Respect and Preserve the Land

The unique environment, habitat, and wildlife of Lake County require a comprehensive planning approach in order to reduce long-term and irreversible impacts from fragmentation and disturbance. The Council recommends creating restoration and monitoring plans, land preservation actions and identifies priority sensitive areas that require further protection.

4. An Innovative Funding Plan for an Innovative Road

Just as the Council recommends a truly innovative roadway design for environmental preservation and context sensitivity, the Council proposes a funding framework that is equally ground-breaking for an Illinois toll road. Instead of relying only on toll revenues from the extension and the core system, it combines the use of tolls along with contributed capital from promising local, state and federal sources that reflects strong local commitment to building a 21st century facility.

5. Create a Corridor Plan and Implementation Strategy

A corridor plan that integrates land use, transportation, economic development and open space is vital to the success of the Route 53/120 project. New roadway development can often bring unwanted results without adequate prior planning because of a rise in traffic, disruptions to environmental systems and lack of forethought about desired future land uses. The Council recommends creating a corridor plan that is based on the integration and preservation of open space and natural areas, multi-modal connections, market-feasible development, and congestion relief.

A Unique Opportunity

The Council's recommendations for the Route 53/120 project set a much higher standard than typical highway construction methods. They are a product both of the unique process that brought the Council together and the unique challenges and environmental assets within central Lake County. The Council set forth an ambitious plan with a rigorous set of recommendations for the function and design of the roadway. Design and performance standards intended to minimize the impact of the road are considered integral to the project.

Just as the Council's recommended design, environmental preservation, and context sensitive features for the Route 53/120 corridor will be breaking new ground, we are proposing a funding concept that is also groundbreaking for an Illinois toll road. Instead of relying only on toll revenues from the extension and the core system, it combines the use of tolls along with contributed capital from promising local, state and federal sources.

Building an innovative 21st century road cannot be done without a serious commitment to the environment and the local character of Lake County. This project provides a unique opportunity to deliver significant economic, environmental and mobility benefits to a wide array of stakeholders. The expansive benefits give cause to require on-going coordination to ensure the project advances in a manner that is consistent with the overall plan and resolution and provide rationale for a reasonable financial contribution from the broader region. Continuous evaluation is needed to verify that the overall project remains environmentally, financially and operationally viable.

Next Steps

Presently, committment and leadership from CMAP, Lake County and local municipalities is necessary to catalyze the development of a corridor plan, to secure sufficient funding, to create a detailed design concept, and to secure additional authorizations.

Initiate the Corridor Plan

The Council recommends that the full scope of the corridor planning process is determined. Participation of municipalities along the corridor will be critical, and a commitment to the process should be obtained from CMAP, Lake County and affected municipalities as soon as possible. The Tollway, CMAP, Lake County and other key partners will be responsible for fully scoping and obtaining funding for the plan.

Determine How to Finance the Project

The Council recommends that a revised cost estimate will need to be determined in conjunction with the detailed design concept. The Council agrees that the project should be funded through the use of tolling, including congestion pricing and indexing of toll rates. The Council understands that other revenue options will be necessary to fund the project in coordination with local governments. The Council also requires identification of local revenue sources, and supports the use of Tollway system generated revenues.

Develop a Detailed Design Concept

A detailed design concept should be developed in sufficient detail to fully understand the environmental, community and transportation impacts of construction, and to fully understand the capital and operating costs, and appropriate funding plan, for further consideration by the Council. The development of the detailed design concept will include a thorough analysis of existing traffic conditions and projected traffic growth to ensure that the recommendations in this Resolution are consistent with the most current needs.

Secure Local, State and Federal Authorizations

In order to proceed to the final stages of planning, design and construction for Route 53/120 a series of local, state and federal authorizations may need to be pursued including, but not limited to:

- Illinois General Assembly action to provide the Illinois Tollway the same level of immunity from tort liability as the Illinois Department of Transportation (IDOT). This action would be requested for only the Route 53/120 facility because it more closely aligns with a suburban, arterial roadway than a typical toll facility.
- Changes to allow extended borrowing term up to 35 years.
- Legislation to support final local funding programs such as value capture, multi-jurisdictional TIF-like districts, and special service areas.

- Additional Illinois General Assembly action as required, to affirm the design and performance standards recommended in the Council's resolution, and to define the limits of system expansion along both Route 53 and Route 120.
- Federal authorization to allow tolls to be added to existing federally funded roadways.
- Transfer of land, rights or other property held by the State of Illinois for the purpose of constructing and operating this project.
- Countywide referenda or other authority to support final funding recommendations.

A Continued Cooperative Approach

To move the Route 53/120 project forward, as well as to implement and monitor the performance and design requirements once it is completed, will require a coordinated effort from the Tollway, government agencies, community organizations, and local champions. To facilitate a cooperative approach, future planning should embody transparency, accountability, open discussion, and inclusive decision making.

Any steps forward with the proposed Illinois Route 53/120 project will involve the local communities of central Lake County as partners. The project shall engage the public and stakeholders at each stage, and opportunities for input and involvement will be tailored to the project stage and level of activity. Members of the Blue Ribbon Advisory Council will be kept informed of all activities and encouraged to remain involved. Should the project proceed to the point of construction, the Illinois Tollway will convene a Local Advisory Committee in accordance with the Toll Highway Act, where current members of the Council would be excellent candidates for the new advisory body.

1. Create a Transportation System That Preserves the Environment and Nearby Communities and Enhances Connectivity

A 21st Century, Modern Transportation System

As stated in the Guiding Principles, the proposed Route 53/120 corridor project is envisioned as a modern, multi-modal, sustainable and innovative transportation system that will address specific needs for congestion relief and greater connectivity while simultaneously preserving the nearby environment and the character of its existing neighborhoods and communities, and enhancing the economic vitality along the project corridor.

In order to achieve this vision, the Council recommends essential roadway **design standards** and **performance standards** that will ultimately guide the physical elements and the core functions of the new roadway and **alignment** options (locations) of the new roadway. The design and performance standards were crafted to ensure that the roadway meets the intentions of the Council and the Guiding Principles. These standards are essential requirements and shall not be considered optional during the recommended detailed design process. The Council intends for the Tollway to create a monitoring program to ensure the performance standards, and the measurable goals that they outline, are fullfilled in order to avoid and minimize future impacts of the road during construction and during the operational lifetime of the road.

This recommendation addresses the following Guiding Principles:

- Enhance mobility and accessibility, and relieve congestion in the Central Lake County Corridor.
- Seek innovative design solutions for a safe, integrated, multi-modal corridor that preserves the environment and the character of nearby communities, and enhances their economic vitality.
- Minimize environmental and long term development impacts of transportation infrastructure and operations.
- Promote environmental enhancements and sustainable practices in all aspects of project development, implementation and operations, and strive to improve the overall environment.
- Develop and apply innovations in all aspects of the project to create a 21st Century modern boulevard that serves as a national and international model.

Route 53/120 Transportation System

Right of Way and Corridor Definition

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A cost estimate of $200-$350 million is being held as a placeholder for right of way acquisition at this stage of the project. A more refined right of way evaluation will be conducted in future phases to define needs, identify ownership and parcel information and refine cost estimates.

Roadway Design

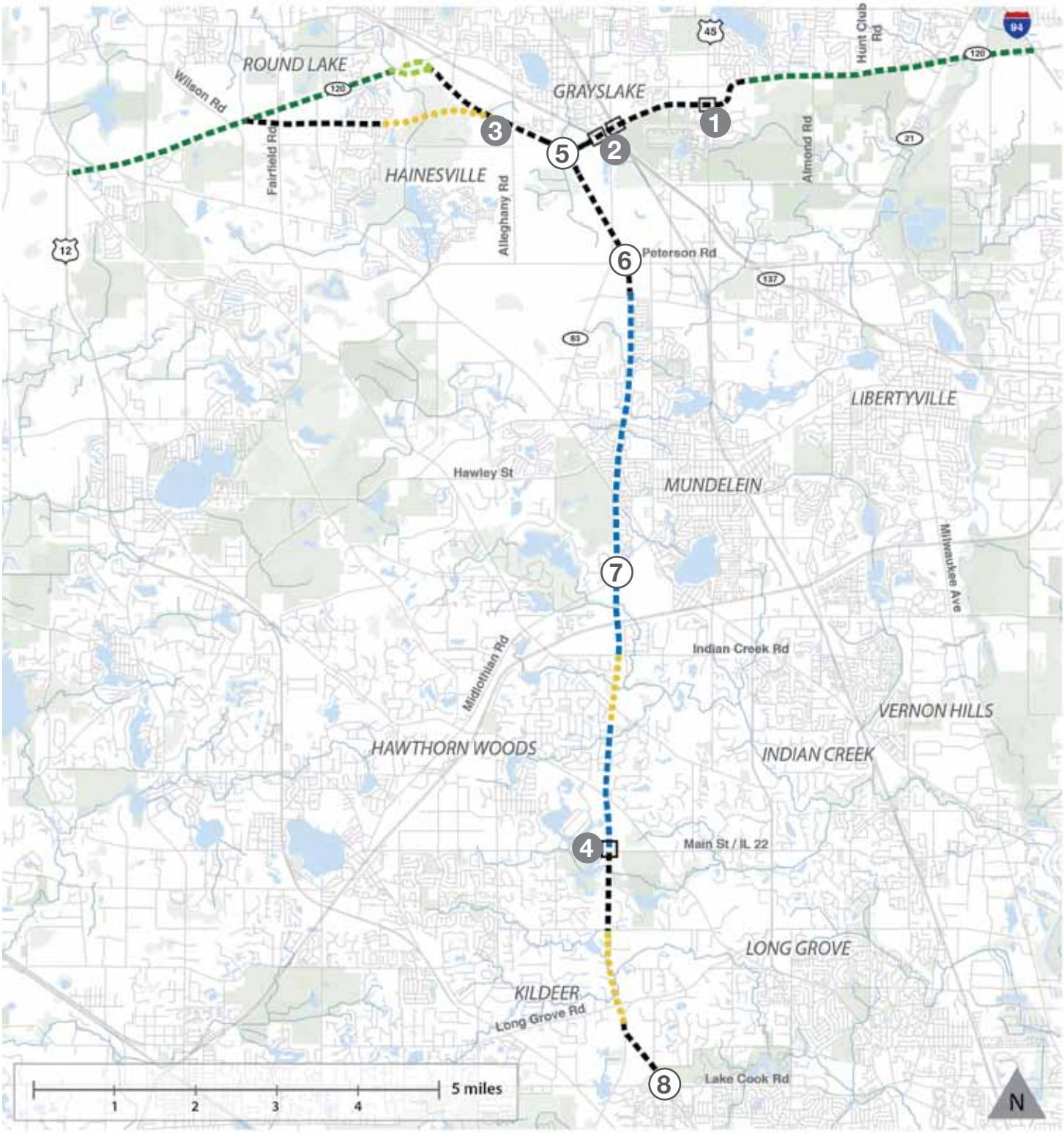
- Depressed roadway (5'-7'), berms (5'-7'), environmental treatments, with mainline depressed interchanges
- Depressed road (5'-7'), berms (5'-7'), with narrow median, environmental treatments, and mainline depressed intechanges
- At-grade roadway, widen and resurface, environmental treatments
- Elevated, open causeway on pylons through wetlands
- At-grade roadway, split couplet

Specific Interchange and Crossing Design

1. Mainline depressed interchange
2. Tunnel or underpass beneath railroad tracks
3. At-grade intersection
4. Mainline depressed interchange with standard median

5-8 Intersection/Interchange location - *specific type needs to be determined*

Figure 1: Proposed Transportation System



Design Standards for Route 53/120

The purpose of the design standards is to articulate roadway design principles, guidelines and characteristcs proposed by the Council for development within the Route 53/120 project corridor. The design standards reflect the Council's minimum design criteria. The intent is to preserve the environment, protect and enhance the overall value and appearance of existing communities and to achieve a well-designed project that enhance connectivity and mobility. These standards set a much higher bar than typical highway design, and they are a product both of the unique process that brought the Council together and the unique challenges within central Lake County.

The design standards are not intended to restrict creative solutions and it is expected that they will continue to evolve as new technology and practices arise. During the detailed design concept phase, further analysis of existing traffic conditions and projected traffic growth may suggest new design standards not presented here. Any alterations to these design standards should involve discussion and consent of the Blue Ribbon Advisory Council.

Route 53/120 Design Standards Summary:

- Utilize a Classic Parkway Design with Tolling
- Include Four Travel Lanes
- Design Roadway for a Maximum Operation Speed of 45 Miles per Hour
- Use Pricing for Congestion Relief
- Utilize Onsite Stormwater Management Techniques That Mimic Natural Systems
- Enhance the Views of Residents and Drivers
- Use Innovative Roadway Lighting Techniques When Necessary
- Make Local Roadway Improvements for Safety and Congestion Relief
- Maintain Local Road Connections
- Consider Local Road Roundabouts
- Improve Connections for Bicyclists and Pedestrians in the Project Corridor
- Ensure Pedestrian Safety
- Provide Accomodation for Transit

Design Standards for Route 53/120

Utilize a Classic Parkway Design with Tolling

The Route 53/120 facility will be designed as a limited access, tolled parkway with travel lanes in each direction. Where feasible, these travelways will be separated by a wide median that will serve to collect, store and treat stormwater runoff. Characteristic of a classic parkway, the corridor will preserve and showcase the natural scenic areas of central Lake County and will incorporate public access with a network of multi-use trails that connect to existing trails in the area.

Include Four Travel Lanes

The Route 53/120 facility will be designed with a total of four travel lanes, two in each direction. Space within the right of way will be reserved for the possibility of future transit accommodations such as transit specific ramps and transit stations.

Design Roadway for a Maximum Operation Speed of 45 Miles per Hour

The parkway will be designed to reinforce a maximum operating speed of 45 miles per hour (mph), and the speed limit will be set at no more than 45 mph. The advantages associated with a lower operating speed–including reduced noise and vehicle emissions, and a smaller road footprint–were ranked higher during the design workshop than the increased travel time benefits of higher speed alternatives. Additionally, a maximum design speed of 45 mph complements roadway designs that utilize curves and hills within the right of way.

Use Pricing for Congestion Relief

The Route 53/120 facility will employ congestion pricing to manage demand and traffic congestion. The Tollway would charge higher toll rates during congested periods to ensure the free flow of traffic and improve travel conditions on the facility and encourage drivers to make changes to more efficient travel behavior. These “efficient” behavior changes include shifting travel to off-peak instead of rush hour and shifting from vehicles with low occupancy to other higher occupancy alternatives such as carpooling or transit.

Design Standards for Route 53/120

Utilize On-site and Off-site Stormwater Management Techniques That Mimic Natural Systems

Route 53/120 shall use a four-step stormwater management system, called the Stormwater Treatment Train, that utilizes sequential components designed to treat stormwater runoff before it leaves the site to benefit water quality and to reduce stormwater runoff peaks and volumes. In contrast to conventional stormwater treatment, the stormwater treatment train routes stormwater from the built areas overland into open conveyance swales, planted with native prairie and wetland vegetation rather than through storm sewers. The swales provide initial infiltration and sedimentation treatment. The prairies then diffuse the flows conveyed by the swales. The reduced stormwater velocities maximize the prairie's sedimentation, infiltration and evaporative water treatment, and the natural adsorption and absorption of the prairie soils enables it to hold many contaminants. Further along, the water passes through more restored grasslands and wetlands to provide storage, and enhanced biological treatment and final polishing prior to the water entering receiving waterbodies. Receiving water bodies will receive clean water.

The project should create final polishing areas to ensure the water quality meets the performance requirements established in this resolution. The appropriate polishing treatment technologies, and their sizing, placement and operational needs will be determined during a later phase of highway design.

Enhance the Views of Residents and Drivers

Depressing the roadway whenever physcially feasible below the natural grade of the landscape will reduce views of the roadway. Adding a berm and landscaping of native plants wherever feasible between the roadway and adjacent properties will serve a dual purpose by partially screening views of the road from outside to further reduce negative visual impact of the roadway on adjacent lands, as well as add interest and color in the driver's sightline.

Design Standards for Route 53/120

Use Innovative Roadway Lighting Techniques When Necessary

As a four-lane parkway, the Route 53/120 facility will only employ lighting at interchanges, if lighting is used at all. This lighting will meet all “Dark Sky” requirements for new projects and will use full cut off roadway light fixtures to prevent light trespass and reduce sky glow, glare, and light clutter. In order to control light pollution, no-spillover luminaires including shielding on the fixtures will be required.

Currently, the Tollway only employs overhead lighting for roads that are at least eight lanes total, except at interchanges where lighting is required. Luminous paint is a standard application for all roadways. Low-energy, high-efficiency lighting methods will be required where roadway lighting is used.

Make Local Roadway Improvements For Safety and Congestion Relief

The Route 53/120 design shall improve the ease of local circulation (for vehicles, pedestrians and bicyclists) and safety by widening a section of Route 120 to four lanes, by providing left turn lanes at all intersection approaches on the widened Route 120, by providing a median on Route 120 wherever appropriate, providing new and upgraded traffic signals on Route 120 as warranted, and by the grade separation of Route 120 at Route 83, Route 137 and the CN/CPRS rail lines. Improvements to the local crossing streets should also be made as needed to ensure safe and efficient travel service for all roadway users.

Toll revenues and project costs are based on improvements necessary to build, maintain and operate the project. Additional local road improvements are not included in the cost estimate and will need to be funded by other sources.

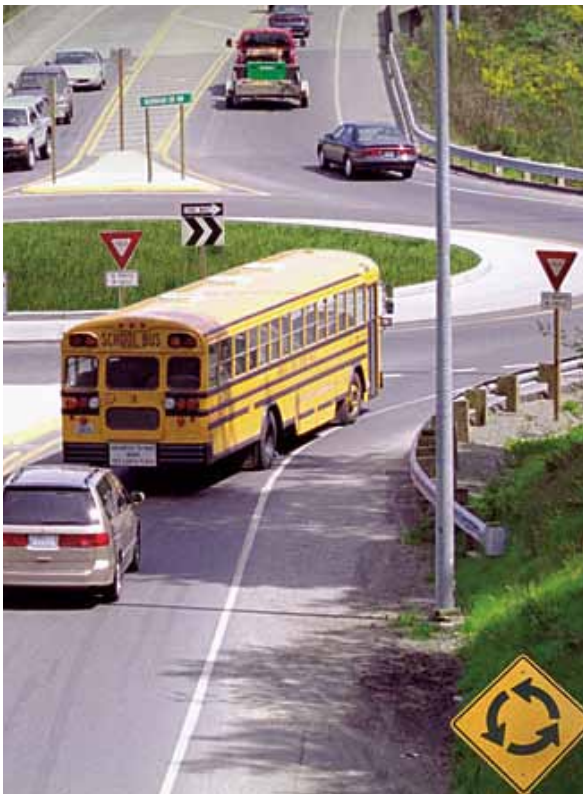
Design Standards for Route 53/120

Maintain Local Road Connections

The Route 53/120 project will maintain the existing connectivity of local streets that cross the right of way. These connections may be preserved with controlled interchanges or with overpasses and underpasses.

Consider Local Road Roundabouts

Roundabouts will be considered as an alternative to traffic signals at intersections in the project corridor, including intersections along crossing streets and intersections along Route 120 where the road may be widened but not tolled. Toll revenues and project costs are based on improvements necessary to build, maintain and operate the project. Additional local road improvements are not included in the cost estimate and will need to be funded by other sources.



Improve Connections for Bicyclists and Pedestrians in the Project Corridor

The Route 53/120 project shall improve the connectivity of the regional bicycle and pedestrian networks, by providing for multi-use trail connections throughout the extent of the corridor (either in immediate right of way or within the more extensive road corridor). The continuity of bikeway and pedestrian routes (sidewalk or multi-use trails) shall be maintained on all roads intersecting with or crossing over or under the new segments of Route 53/120. On the widened segments of Route 120, the project shall accommodate sidewalks on both sides of the road and pedestrian signals and marked crosswalks at signalized intersections. Bike and pedestrian accommodations will comply with the state's Complete Streets legislation.

The project shall also provide additional trail connections among conservation land holdings where possible. As part of any environmental mitigation and enhancement plan, there will be a commitment to provide connectivity between conservation lands. A trail system should be coordinated with the Lake County Forest Preserve District, municipalities, Liberty Prairie Reserve, the County Bike Plan and the Active Transportation Alliance.

Design Standards for Route 53/120

Ensure Pedestrian Safety

The Route 53/120 project shall assure safety of pedestrian and other non-motorized users by providing that multi-use trail accommodations shall be either: (1) separated from the roadway or (2) on or under bridges, accommodated in a raised multi-use sidepath adjacent to the traveled way. All bike and pedestrian accommodations will meet design and safety standards and comply with the Complete Streets legislation.

Provide Accommodation for Transit

The Route 53/120 project will be designed to accommodate bus transit service, with the possibility of bus rapid transit in the future. Space within the right of way will be reserved for the possibility of future transit accommodations such as transit specific ramps and transit stations.

Performance Standards for Route 53/120

The Route 53/120 performance standards are an expression of the performance thresholds, requirements, and expectations proposed by the Council that must be met in order for the project to be considered successful. Objective, measurable and realistic performance standards have been established for each critical element of the proposed roadway. These standards set a much higher bar than typical highway construction methods, and they are a product both of the unique process that brought the Council together and the unique challenges within central Lake County.

The performance standards are not intended to restrict creative solutions and it is expected that they will continue to evolve as new technology and practices arise. During the detailed design concept phase, further analysis of existing traffic conditions and projected traffic growth may suggest new design standards not presented here. Any alterations to these design standards should involve discussion and consent of the Blue Ribbon Advisory Council.

Route 53/120 Performance Standards Summary:

- Protect Open Space
- Mitigate 100% of Direct Impacts
- Compensate for Wetland Impacts
- Compensate for All Other Impacts
- Ensure Plant Community Health
- Reduce Stormwater Runoff Volume
- Ensure the Highest Water Quality
- Protect and Enhance Streams
- Use Alternative Deicing Approaches
- Improve Air Quality
- Reduce Neighborhood Traffic
- Reduce Travel Time
- Maintain Existing Speeds on Local Roads
- Minimize Traffic Noise
- Minimize Energy and Material Use

Protect Open Space

The Route 53/120 project shall protect open space within the corridor area to reconnect fragmented ecological systems and prevent additional fragmentation by the proposed roadway. As part of the recommended approach for land preservation, sensitive lands will be protected and enhanced and new lands will be added to existing high-quality parcels. Furthermore, the design will integrate opportunities for wildlife crossings. Coordination with the local conservation groups and the Lake County Forest Preserve District will take place to assess and prioritize various land holdings. Land preservation should be concentrated within priority sensitive areas, such as the Liberty Prairie Reserve, the Heron Creek and Egret Marsh Forest Preserves, Indian Creek Marsh, and Squaw Creek area, and carried out in accordance with existing conservation plans.

Mitigate 100% of Direct Impacts

Direct impacts (impacts within the right of way) to be compensated include all impacts to regulated resources, as well as all impacts to forests, grasslands, recharge areas for wetlands, floodplains, restored savannas, lake shorelines, and streams. Replacement shall be required for all significant disturbance within the construction zone, including but not limited to grading, filling, paving, and graveling.

Compensate for Wetland Impacts

To the extent possible, the project shall avoid all wetland impacts. Unavoidable impacts to federal jurisdictional wetlands and Isolated Waters of Lake County within the right-of-way will be compensated at an overall average ratio that is higher than required by permitting agencies and at least 5:1. Mitigation requirements under the federal and county regulations allow for the inclusion of some percentage of the mitigation to include protection, enhancement, as well as wetland construction or restoration. Any mitigation will be designed, constructed, managed, and monitored in accordance with relevant governing regulations, agency guidance, and Lake County Stormwater Management Commission (SMC) plans or a stakeholder-guided plan developed for the project area.

Performance Standards for Route 53/120

Compensate for All Other Impacts

Legal protection will be secured for as much land area as necessary to provide compensation for any unavoidable indirect impacts (impacts outside the right of way) to natural resources that occur from construction, operations, and maintenance of the road and any project-related improvements outside the right of way. Indirect impacts will be defined by modeling, using the latest scientific evidence and studies, to establish the magnitude of the potential effect and will be confirmed by field work.

Compensation for these impacts to agricultural lands, receiving water bodies, and other resources will be addressed by:

- Using the long-term funding for stewardship and unanticipated impacts described on page 53.
- Integrating replacement strategies with the Corridor Plan described on page 67.

Ensure Plant Community Health

All wetland mitigation and enhancement areas shall achieve the plant composition values required for inclusion on the Illinois Natural Areas Inventory Class B for the same ecosystem and community types. Furthermore, they shall attain a Floristic Quality Index score of at least 30 no more than five years following the completion of construction of the adjacent road segment and meet the Lake County SMC and The Chicago District of the U.S. Army Corps of Engineers performance standards for wetland mitigation banks.

Performance Standards for Route 53/120

Reduce Stormwater Runoff Volume

The delivery hydrographs to all receiving water bodies will achieve a run-off hydrograph consistent with generating a maximum of up to two bankfull stages in receiving streams or wetlands on average annually and meet the runoff volume reduction requirements of Lake County Watershed Development Ordinance.

Ensure the Highest Water Quality

The Route 53/120 project shall treat 100% of stormwater generated up to the two-year storm event for water quality management purposes. Water leaving the project will meet quality standards for key chemical and physical parameters, defined as the highest quality (upper 10th percentile) measurements from the 2000- 2011 Lake County Water Quality Parameter, Statistics Summary Report for lakes and other water bodies in Lake County. Where feasible and appropriate, higher performance goals will be met using the stormwater treatment train design. Source reduction, particularly for chloride, is an important component of meeting this water quality standard.

Protect and Enhance Streams

The Route 53/120 project shall use best management practices to control erosion and sedimentation from construction and roadway operation. Streams and drainage ways crossing the corridor, including existing impaired streams will be restored (including bank, bed and channel restoration, revegetation, invasive plant removal, habitat enhancement, and buffer replanting). The definition of restoration type and design will be the result of a two-step process:

- Completion of a “stream and drainage way asset inventory” investigation
- Engineering to determine the appropriate restoration measures, including modeling of shear stress and hydraulic geometry changes for streams crossing the right of way

Performance Standards for Route 53/120

Use Alternative Deicing Approaches

The Route 53/120 project shall create a project-specific deicing plan that minimizes the release of chloride into the surrounding ecosystem. The deicing plan shall be customized as necessary to meet all performance standards set forth by the Council and should contain the following:

- Defined salt or salt alternative application rates based on road temperature and impending weather conditions.
- An anti-icing approach, applying a deicer to the roadway before a frost or snowfall (based on weather forecasting and sensor data).
- A pre-wetting approach, rather than applying dry salt to roadways.
- Alternative deicing compounds, such as the sugar beet-derived formula developed by McHenry County DOT.

The Tollway uses remote sensors to provide data on pavement temperature and other weather data sensors so that maintenance staff can focus efforts to specific locations rather than mass distribution of deicing material. The Tollway will share weather and pavement data with surrounding agencies and road districts to enable coordination.

Improve Air Quality

Air quality should be considered at two main scales, regional and local. At the regional scale, it has been shown that the Route 53/120 project meets air quality requirements. CMAP is responsible for demonstrating that its long-range transportation plan, as well as short-term transportation programs, will not contribute to violations of federal air quality standards. This analysis of conformity with air quality requirements has already been completed and approved for GO TO 2040, which includes the Route 53/120 project.

Performance Standards for Route 53/120

Furthermore, projects that reduce congestion and provide free-flow driving conditions, like Route 53/120, can meaningfully reduce total automobile emissions from existing traffic. On a per-mile basis, emissions from cars driving in congested conditions are higher because of the time spent idling in traffic, accelerating from a stop, and driving at low speeds. It is likely that the Route 53/120 project will reduce emissions from cars now driving on congested arterials.

On the other hand, air pollutant concentrations in the immediate vicinity of a new roadway may be higher than they were before building the road. Local air quality as it would actually be experienced by people around the road will be evaluated through a quantitative "hotspot analysis" that considers particulate matter and carbon monoxide. Relative to the no-build condition, emissions from the Route 53/120 project, considered together with background concentrations, shall not cause a new violation of the National Ambient Air Quality Standards for carbon monoxide and particulate matter at receptors in the project area in the anticipated year of peak emissions. The appropriate project area, year of peak emissions, receptor locations, and other technical requirements of the analysis will be determined during the study.

Reduce Neighborhood Traffic

The Route 53/120 project shall reduce existing through traffic (traffic with neither origin nor destination in the project corridor) in project corridor neighborhoods. This will be assessed to a certain extent through CMAP's traffic model which can estimate shifts in traffic patterns with the project compared to without the project. However the model does not include complete detail of all neighborhood road networks in the corridor. In these areas local knowledge of neighborhood roads and travel patterns must be used in combination with model results to identify neighborhoods with a potential for through traffic increases. Measures can then be taken to reduce this potential in these neighborhoods.

Performance Standards for Route 53/120

Reduce Travel Time

The Route 53/120 project shall result in a reduction of travel time for all trips within Lake County. The primary method for ascertaining this reduction shall be through comparison, between the proposed project and the no-build scenario, of the vehicle hours of travel on congested roads in Lake County as computed in the traffic model results (year 2040). Reduction in travel time will also be ascertained by the comparison, between the proposed project and the no-build scenario, of travel times between selected origin-destination pairs, using travel times as computed from the traffic model (year 2040) link speeds.

Maintain Existing Speeds on Local Roads

The Route 53/120 project shall include standard, approved traffic calming measures to control vehicle speeds on local roads in the project corridor.Measures shall include limitation of road pavement width, turning restrictions, traffic control devices, roundabouts used as speed-control devices, and a wide variety of traffic calming devices such as chicanes, pavement narrowings, curb extensions, pavement texture segments, raised intersections, and speed tables.

Minimize Traffic Noise

The Route 53/120 project shall implement noise abatement measures where technically feasible when modeled first year of operation project traffic noise levels exceed 60 dB(A) at adjacent receptors. In locations where the existing noise levels already exceed 60 dB(A), the project shall not increase the overall noise level in the first year of operation by more than 3 dB(A) above measured values in the year of the engineering design.

A 3 dB(A) change in noise levels is generally accepted as the smallest perceptible change. This proposed standard is more stringent than the Federal Highway Administration standard of considering noise abatement when build noise levels approach 67 dB(A), which is defined as 66 dB(A) by the Illinois Department of Transportation.

Performance Standards for Route 53/120

The 45 mph speed limit is the primary method for reducing traffic noise. Depressing the roadway below grade when feasible as well as berming and landscaping the land between the roadway and the outer edge of the ROW will further reduce the traffic noise.

Traffic noise studies will be conducted utilizing the latest version of the FHWA approved Traffic Noise Model (TNM) for nearby receptors along the proposed Route 53/120. If the build traffic noise levels exceed the criteria, a barrier analyses will be conducted to determine appropriate barriers to reduce the traffic noise levels to meet the criteria where possible. These barriers may consist of berms, retaining walls or noise walls.

Minimize Energy and Material Use

The Route 53/120 project shall meet the Illinois Livable and Sustainable Transportation (I-LAST) energy use and materials certifying points or the following certification requirements:

- All Illinois Tollway buildings within the project area should be LEED certified if they meet the occupancy and square footage requirements of the program.
- The prime contractor, design-build firm, or construction management firm should have an environmental management system (EMS) and be certified under ISO 14000 standards.
- The Route 53/120 should be certified under the Greenroads program and follow other green infrastructure sustainable programs and certification programs such as the new Zofnass Rating System for Infrastructure Sustainability.

During the design process for the road, value engineering will be aligned with sustainability, by conducting a comprehensive review of money savings strategies and a comprehensive matrix of strategies starting with the I-LAST documentation, using the ISO 14000 standards, the new ANSI SCS-001 and SCS 002 Life Cycle analysis protocols, the Zofnass Rating System for Infrastructure Sustainability.

Alignment Options

The Council has developed options for the configuration and alignment of Route 120 which should be carried forward for further study during detailed design.

The Council supports alignment options of the Route 120 bypass that join existing Route 120 west of Almond Marsh (options 3E or 6E, or some variation of these, from the earlier Central Lake Thruway Unified Vision) and that extend no farther south than the southern edge of the existing Route 120 roadway. The final configuration of Route 120 will need to be determined in the next phase of planning.

Alignment 1: Limited Bypass with Split Couplet[1]

This alignment would bypass the existing Route 120 from east of Route 45 to west of Route 137. As the smallest bypass proposed, this alignment would avoid crossing identified priority sensitive areas to the west, including the Squaw Creek Complex, and to the east, including the Almond Marsh area. Route 120 would be widened to 4 lanes east and west of where the new road joins the historic Route 120.

A split couplet design is envisioned as an option for the western segment of the limited Route 120 bypass. Route 120 would remain a single four-lane road until just southeast of the oak savanna remnant along Route 120, just west of Hainesville Road and the railroad right of way. Along this bypass route, the oak grove and adjacent Big Sag Wetland Bank would be protected and a combined restoration plan would be developed that satisfies the wetland bank permit and prospectus requirements while simultaneously protecting, restoring, enhancing, managing, and monitoring this larger landscape.

Alignment 2: Western Bypass[2]

This alignment would bypass the existing Route 120 from east of Route 45 to west of Fairfield Road. This alignment avoids crossing through identified priority sensitive areas to the east, including the Almond Marsh area; however would require crossing the Squaw Creek Complex to the west. The portion over the Squaw Creek Wetland Complex would require a causeway on pylons. Route 120 would be widened to 4 lanes from where the new road joins the historic Route 120 at Sears Boulevard east to the existing 4 lanes at Almond Road.

[1] Alignment 1 is derived from Scenario B of the Council Design Workshop, page 89.
[2] Alignment 2 is it is a hybrid of Scenario B and Scenario C of the Council Design Workshop, page 89-90.

Figure 2: Alignment 1: Limited Bypass with Split Couplet

Figure 3: Alignment 2: Western Bypass

Roadway Design

- Depressed roadway (5'-7'), berms (5'-7'), environmental treatments, with mainline depressed interchanges
- Depressed road (5'-7'), berms (5'-7'), with narrow median, environmental treatments, and mainline depressed intechanges
- At-grade roadway, widen and resurface, environmental treatments
- Elevated, open causeway on pylons through wetlands
- At-grade roadway, split couplet

2. Design a Context Sensitive Roadway

Context Sensitive Solutions

In addition to environmental performance requirements applicable to the whole Route 53/120 corridor, preliminary context sensitive design illustrations have been developed. These designs address multiple issues and are conceived as parts of an integrated response to environmental and community challenges. Context sensitive solutions consider the need to find a balance between the goals of environment and open space preservation, transportation mobility and land access. A one-size-fits-all approach to roadway design does not allow adjustments to roadways as they move through varying environments and communities.

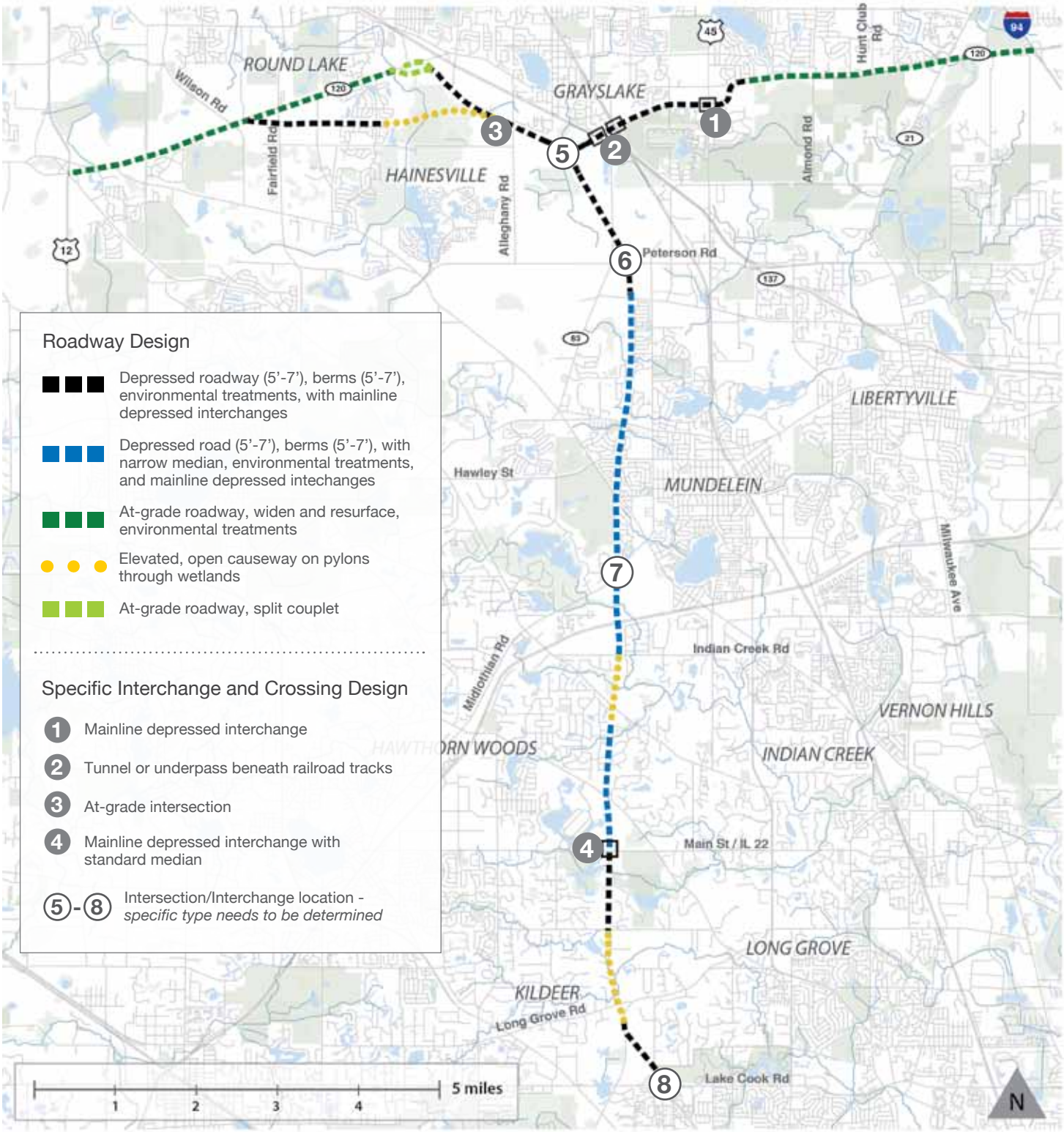
These roadway treatments are presented as a minimum design response to site specific issues and roadway performance standards within the corridor. If design and technology improve, and better results can be obtained with other design components, the Council would encourage such design treatments.

Please note that the figures included in this document are for illustration purposes only. They are meant to communicate an environmental approach, and do not address specific engineering detail or cost.

This recommendation addresses the following Guiding Principles:

- Seek innovative design solutions for a safe, integrated, multi-modal corridor that preserves the environment and the character of nearby communities, and enhances their economic vitality.
- Analyze potential funding options and pursue corridor concepts to the extent that they are financially viable, fiscally sustainable and equitable.
- Minimize environmental and long term development impacts of transportation infrastructure and operations.
- Promote environmental enhancements and sustainable practices in all aspects of project development, implementation and operations, and strive to improve the overall environment.
- Develop and apply innovations in all aspects of the project to create a 21st Century modern boulevard that serves as a national and international model.

Figure 4: Route 53/120 Roadway Designs



Context Sensitive Solutions

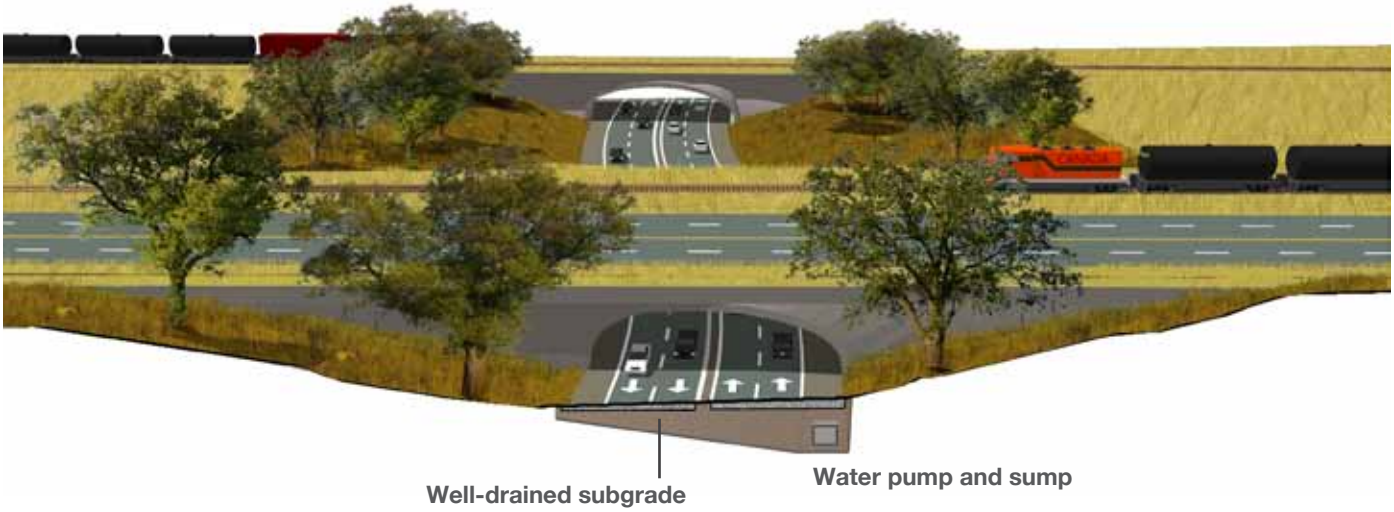
Roadway Design for Conservation and Organic Agriculture Lands

The roadway shall be depressed below grade and bermed with wide median and perimeter stormwater treatment systems that are linked to water polishing areas outside the right of way. Where the roadway crosses existing roads and railroads without an interchange, depressed conditions continue as underpass sections. These locations include beneath Route 137 and the two rail lines to the west, and as an underpass section beneath U.S. Route 45 and eastward and follow Grayslake Route 120 plan.

Depressed roadway, berms, environmental treatments, with mainline depressed interchanges

Specifications = 5'-7' berms, 12' lanes

Tunnel or underpass beneath railroad



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Context Sensitive Solutions

Roadway Design for Elevated Causeways

These sections will be pylon-supported causeways, designed to bridge and traverse poor soils and some unavoidable wetland features. These causeways will be elevated at the midpoint of the span in order to drain stormwater toward the landward ends of the causeway, where the water will be pretreated and final polished in internal and external water polishing areas. These roadway sections are also designed to enhance aesthetics of the roadway. *(One option under consideration is to enclose these elevated causeways. This could be done using a covered bridge or a modular reinforced concrete "lid" with the possibility of a vegetated cover. Enclosure would address several performance standards and concerns for priority sensitive areas, including noise reduction, the elimination of aerosol salt spray, and, if a vegetated lid is used, elimination of stormwater runoff.)*

● ● ● *Elevated, open causeway on pylons through wetlands*

Specifications = 12' lanes, barrier separated

Please note that the figures on this page are for illustration purposes only. They are meant to communicate an environmental approach, and do not address specific engineering detail or cost.

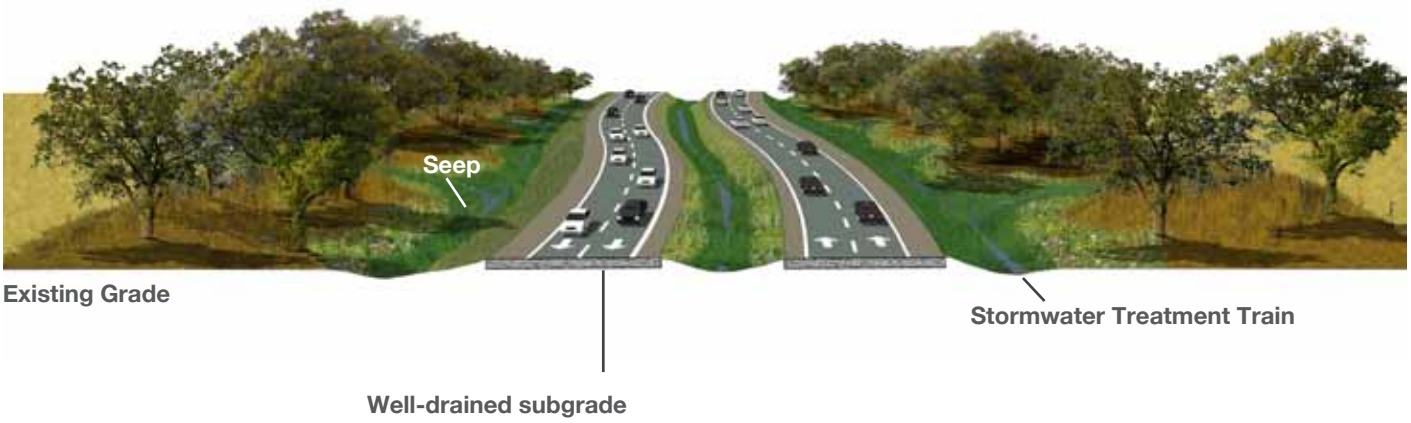
Context Sensitive Solutions

Roadway Design for At-Grade Segments

Roadway widening and additional lanes are proposed for sections of Route 120 on the eastern and western ends of the project area. In addition to widening, bioswales and other stormwater management features will be added to ensure these segments achieve the water quality and other hydrology performance requirements for the project. Also, it is not possible for the roadway to be depressed and bermed at every point along the corridor. Several sections of the roadway, particularly where a depressed roadway must merge at grade with other roadways, the road will need to return to ground surface grade.

At-grade roadway, widen and resurface, environmental treatments

Specifications = existing grade, 12' lanes



Please note that the figures on this page are for illustration purposes only. They are meant to communicate an environmental approach, and do not address specific engineering detail or cost.

Context Sensitive Solutions

Roadway Design for Residential Neighborhood

In residential neighborhoods, the roadways will be depressed below grade with elevated berms and stormwater pre-treatment features, but much narrower medians and road-margin water treatment areas to optimize the visual barrier and noise control functions. Stormwater will be captured, pre-treated, and conveyed to external water polishing areas.

Depressed road, berms, environmental treatments, narrow median with mainline depressed intechanges

Specifications = depressed grade 5'-7', berms 5'-7', 12' lanes, barrier separated

Please note that the figures on this page are for illustration purposes only. They are meant to communicate an environmental approach, and do not address specific engineering detail or cost.

Context Sensitive Solutions

Roadway Design for Split Couplet Segments on Route 120

The roadways are at grade, installed in very sensitive manner to avoid damaging trees, wetlands or other environmental features along the routes. They are installed as entranceway features (as in the case of western leg of Route 120) to contribute to the experience of place and simultaneously to protect existing natural resources.

At-grade roadway, split couplet

Specifications = existing grade, 12' lanes

Please note that the figures on this page are for illustration purposes only. They are meant to communicate an environmental approach, and do not address specific engineering detail or cost.

3. Respect and Preserve the Land

Solutions for Sensitive Lands

Given the unique environmental landscape surrounding the Route 53/120 corridor project, the Council proposes a set of solutions intended to reduce long-term impacts on the environment, habitat, wildlife and sensitive lands within and near the project area. The solutions in this section are also intended to help meet the requirements of the performance standards that were presented earlier.

Solutions for land preservation and stewardship plans for priority sites would be made possible by project funds established for the express purpose of long-term stewardship and conservation within the central Lake County area. This fund would provide for land protection and restoration of at least 750 acres, and would also be available to cover unintended consequences.

This recommendation addresses the following Guiding Principles:

- Seek innovative design solutions for a safe, integrated, multi-modal corridor that preserves the environment and the character of nearby communities, and enhances their economic vitality.
- Minimize environmental and long term development impacts of transportation infrastructure and operations.
- Promote environmental enhancements and sustainable practices in all aspects of project development, implementation and operations, and strive to improve the overall environment.
- Develop and apply innovations in all aspects of the project to create a 21st Century modern boulevard that serves as a national and international model.

Solutions for Land Preservation

Create a Lands Inventory

At the onset of the project, a comprehensive lands inventory including all land within a minimum of two miles from the center line will be completed.

Create Restoration and Monitoring Plans

Restoration, management, maintenance and monitoring plans and programs should be developed for all hot spots and other environmentally sensitive locations, including the stormwater management treatment areas, created within, adjacent to, and outside of the right of way. These plans shall meet the approval of agencies, landowners, and other stakeholders (such as Liberty Prairie Conservancy, Long Grove Open Space Foundation, and Home Owner Associations, Illinois Nature Preserves Commission, Illinois Department of Natural Resources, Lake County Forest Preserve and others).

Create Plans to Offset Habitat Fragmentation

Technical and operational plans for protecting, restoring, managing, and enhancing habitat connectivity and continuity shall be created, reviewed and approved by various agencies, landowners, the Illinois Nature Preserves Commission (where appropriate) and other stakeholders, such as Liberty Prairie Conservancy, Lake County Forest Preserve District, and others as appropriate.

These plans shall indicate how to affirmatively and completely offset and compensate for the short-term, long-term and cumulative impacts of the highway that cause fragmentation of wildlife habitat. The plans shall create a network and system of wildlife crossing structures and approaches for specific locations as needed to support the safe passage of the full range of wildlife groups and species across the landscape, through waterways and drainage networks, crossed or abutting wetlands, or movement between habitat patches. As a part of this planning process, the habitats and movement patterns for particular species will be characterized to create the specific strategies to address fragmentation as a part of the a site-specific wildlife assessments used to determine the locations, specific design options and needs for wildlife crossings.

Preserve Land to Reduce Fragmentation

The goal is to reconnect fragmented ecological systems, whether fragmentation that exists today or fragmentation created by the proposed roadway. Land preservation shall be concentrated in accordance with existing plans – notably in the Liberty Prairie Reserve, the Heron Creek and Egret Marsh Forest Preserves, Indian Creek Marsh, Squaw Creek area, and other important natural resource features – but can be accomplished outside the priority sensitive areas if sufficient land is not available within these areas.

Solutions for Land Preservation

Create Stormwater Management Polishing Areas

Several of the largest locations have been identified in preliminary analysis for external polishing of stormwater adjacent to the Route 53/120 corridor. In the right of way, stormwater treatment trains will be designed to pre-treat all stormwater through the removal of suspended solids and contaminants. Stormwater treatment trains utilize extended residence time through long flow path length swales, upland grass landscapes, and redundant wetland-type landscape features of varying depths. Stormwater passing through the treatment trains will be subjected to aerobic and anaerobic processes which strip and hold, or metabolize and dissipate, chemical constituents such as nitrogen, oil and grease, and many combustion byproducts.

The final elements of the stormwater treatment train are the external stormwater management polishing areas, which are designed to create final polishing of the water prior to release into receiving water bodies. In association with these polishing areas, some very specialized additional polishing strategies should be deployed to ensure the water quality meets the performance requirements.

The appropriate polishing treatment technologies, and their sizing, placement and operational needs will be determined during a later phase of roadway design. Their placement will prioritize existing drained hydric soils and surrounding restorable upland settings, but in some locations, it is likely that excavations of existing prior wetland fill areas will be required entirely, or in part, to accomplish the water quality performance requirements.

Figure 5: Potential Stormwater Management Polishing Areas

Priority Sites for Restoration and Enhancement

Preliminary analysis identified several priority locations along the Route 53/120 right of way for expanded land protection and restoration. These areas include, but are not limited to, Squaw Creek Wetlands Complex, Almond Marsh, Indian Creek Wetlands and the Surrey Marsh. In order to reconnect landscapes for wildlife, habitat, human recreation, and hydrology features, thorough inventory, modeling and analysis will be necessary to identify additional restoration and land protection areas. In each of the priority locations stewardship plans will be prepared to:

- Restore and enhance the existing upland buffers such as by removal of invasive buckthorn and by restoration of oak savanna systems present.
- Restore and enhance existing wetlands through invasive plant management, restoration of water levels and hydrological linkages (such as at Almond Marsh where tile failures are increasing the flood levels in the North Almond Marsh basin, and at Arbor Vista, to reconnect tiles that are failing at Route 45).
- Restore areas of hydric soils that are now dewatered by tiles and/or ditches.

In the **Almond Marsh** area, nearly all properties are already under land protection programs; with the exception of several parcels along Route 120 where protection is still needed. The primary focus will be in recreating the failed hydraulic links, restoration, enhancement, perpetual management and conditions monitoring. A trail corridor as a pedestrian underpass under the new road at Almond Road is envisioned to connect conservation lands north of Route 120 and south of Route 120 along or abutting the Almond Road corridor.

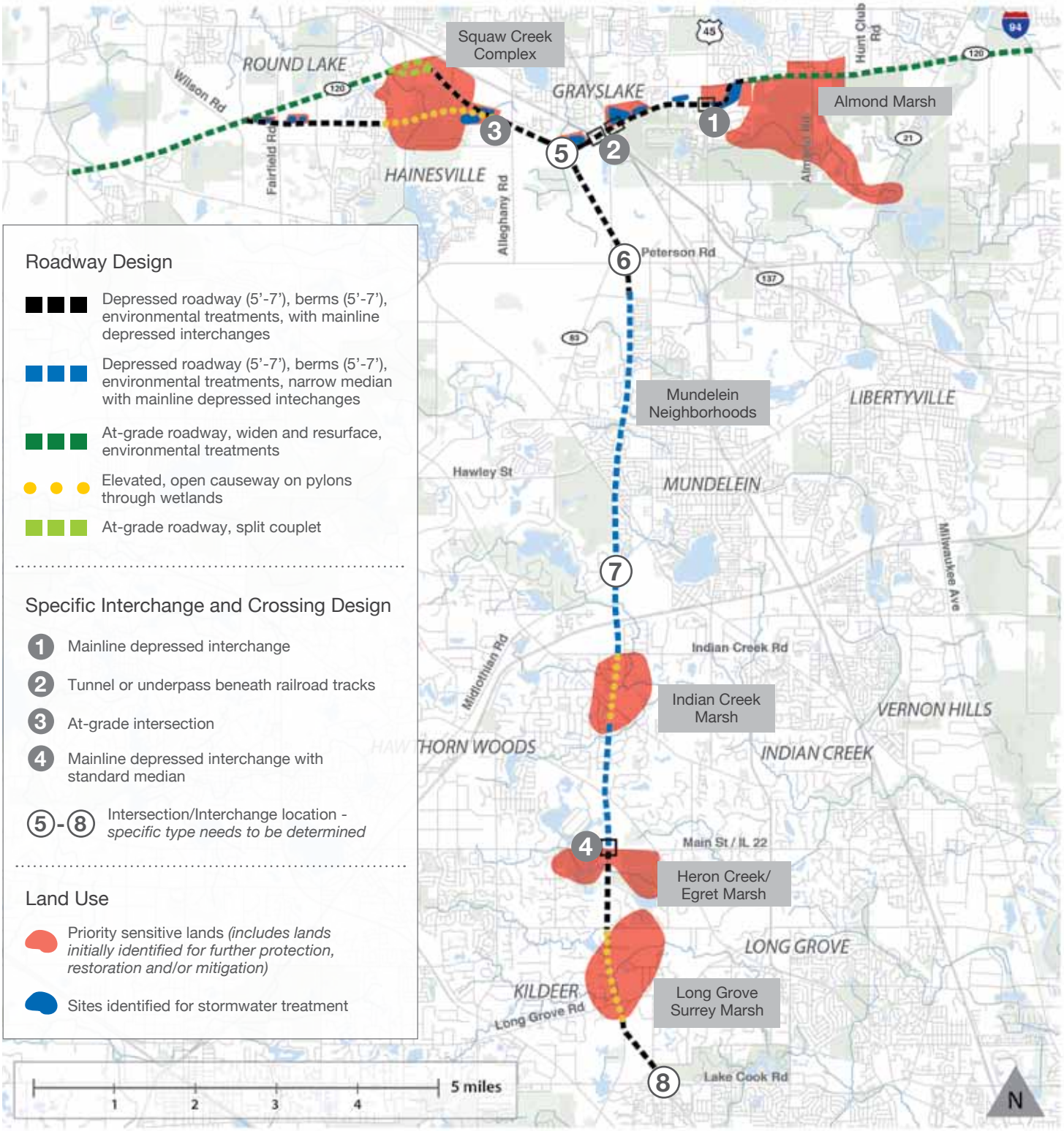
In the **Squaw Creek Wetlands Complex**, this could include the purchase of the remaining existing Sag wetland bank and the credits yielded by the bank, as well as other land protection and restoration opportunities. This program will restore large remaining drained hydric soil units, protect and restore the oak savanna along Route 120, and provide perpetual stewardship, land management and monitoring.

The **Indian Creek Marsh** is proposed to be bridged by an elevated causeway road treatment. The treatment includes the restoration and maintenance and perpetual stewardship and monitoring of the marsh, upland buffers to the marsh and stormwater treatment management areas that would be established on both ends of the elevated causeway.

The **Surrey Marsh** area is proposed to be bridged by an elevated causeway road treatment. These wetlands are in serious state of ecological decline. Some areas would be restored, some existing moderate quality marsh area would be enhanced, and a perpetual stewardship and monitoring program would be established and deployed to ensure restoration success.

The **Heron Creek/Egret Marsh** area is a priority environmental sensitive area given the close proximity of two Forest Preserves being immediately adjacent to the road right of way. The proposed interchange for Route 22 and/or McHenry Road must be designed to avoid impact to these sensitive wetland complexes protected by the Forest Preserve District.

Figure 6: Priority Sites for Restoration and Enhancement



Additional Goals for the Priority Sites

Where stated, “minimize” and “reduce” assume to the greatest possible extent.

Grayslake Bypass: Route 53 to Routes 45 and 120

- Alignment to rejoin Route 120 is in accordance with Alternative 3E or 6E of the Route 120/Central Lake Thruway Unified Vision.
- Minimize aerosol, ground and surface water contamination through a) reduced road footprint and meandering the roadway, b) depressing road surface into the shallow ground water table and c) asymmetric berming above grade areas along the road to reduce aerosol dispersal of salt and other contaminants.
- Reduce, capture, and cleanse contaminated stormwater so they do not impact agricultural lands.
- Move the road within the right of way farthest away from sensitive lands and legally protected nature preserves to avoid direct and indirect impacts.
- Minimize direct surface runoff and subsurface flows toward farmland, protected areas, and nature preserves.
- Reduce noise impacts with depression of the road and berming.
- Minimize visual intrusion of the road.
- Minimize to the greatest extent possible cut-through traffic in the Liberty Prairie Reserve by closing any connection or providing only a right-in right-out on the Almond Road south.

Long Grove, Surrey Marsh to Route 22

- Minimize impacts to slopes, oaks, and slope stability.
- Minimize impacts to wetlands.
- Minimize direct and indirect impacts to preserves, rare species, hydrology, light, noise and stream channel instability.
- Minimize contaminant effects that will encourage invasive species and further deterioration of the natural resources in these areas.
- Restore and enhance the existing upland buffers, including removal of invasive buckthorn and restoration of oak savanna systems.
- Restore and enhance existing wetlands through invasive plant management, restoration of water levels and hydrological linkages.
- Restore areas of hydric soils that are now dewatered by constructed ponds, tiles and/or ditches.
- Reduce noise and visual impacts.
- Develop an innovative interchange in the vicinity of Route 22.

Indian Creek and Squaw Creek Wetland Complex

- Minimize impacts to slopes, oaks, and slope stability.
- Minimize impacts to wetlands.
- Minimize to the greatest possible extent direct and indirect impacts to preserves, rare species, hydrology, light, noise and stream channel instability.
- Minimize contaminant effects that will encourage invasive species and further deterioration of the natural resources in these areas.
- Reduce noise and visual impacts.
- Restore and enhance the existing upland buffers such as by removal of invasive buckthorn and by restoration of oak savanna systems present.
- Restore and enhance existing wetlands through invasive plant management, restoration of water levels and hydrological linkages.
- Restore areas of hydric soils that are now dewatered by tiles and/or ditches.

Residential Area Treatments for Optimizing Environmental Sensitivity in All Remaining Locations

- Avoid and minimize impacts to existing natural resources and hydrological features including recharge locations.
- Slow vehicle average speeds down to reduce aerosol contaminant mobility, wildlife mortality impacts from vehicle collisions, and to reduce congestion.
- Provide connections of forest, savanna, and wetlands through restoration to provide for increased, improved, and extensions of existing habitat and ecosystems.
- Identify stormwater runoff management and polishing areas throughout the right of way and future median area.
- Minimize and contain surface, ground and aerosol waters within the right of way.
- Direct all stormwater and intercepted ground water in all reaches of the highway and direct them to a natural appearing depressed stormwater treatment train.
- Create wildlife crossings over the roadway and beneath the roadway and coordinate their placement where additional conservation and recreational connections can be made across the landscape.
- Minimize noise impacts.
- Protect agricultural lands and consider options for growing crops for water cleansing and energy production.
- Protect watersheds areas that support base flow.
- Use wildlife hazard fencing.
- Be the first climate friendly roadway on earth that has offset its total embedded greenhouse gas (GHG) emissions.

4. An Innovative Funding Plan for an Innovative Road

A New Approach to Financing

Just as the Council's recommended design, environmental preservation, and context sensitive features for the Route 53/120 corridor will be breaking new ground, we are proposing a funding concept that is also groundbreaking for an Illinois toll road. That is, instead of relying only on toll revenues from the extension and the core system, it combines the use of tolls along with contributed capital from promising local, state and federal sources. In addition, we recommend that the schedule for completion be accelerated by two years, thus reducing the assumed cost inflation and accelerating collection of tolls to help pay for the improvements.

It must be emphasized that these funding recommendations are predicated on the implementation of all of the design elements, performance standards and environmental safeguards listed elsewhere in this resolution.

The Council will be responsible for developing regional consensus on whether the Tollway should move forward, the scope and configuration, the design and elements, and how to finance the project.

This recommendation addresses the following Guiding Principles:

- Analyze potential funding options and pursue corridor concepts to the extent that they are financially viable, fiscally sustainable and equitable.
- Cooperate with agencies and municipalities to deliver the Council's work in a transparent and accountable manner.

The Council struggled to develop a reasonable plan for funding this project. Some wanted the new road to completely pay for itself with toll revenues, but at least initially that is not possible. It should be noted, however, that none of the extensions the Tollway has built could have been done without using revenue from the rest of the tollroad system. The Tollway operates as a system of roads that work collectively to move interstate travel (trips passing through Illinois) and most notably serves daily commuters across and throughout northern Illinois. Given the importance of regional, statewide and national travel, the Tollway and State do not consider the viability of a single road financing itself as the sole determinant for building extensions or rehabilitating existing roads. It takes a few years for revenues from new tollroads to begin to cover the debt required for that new road.

The difficulty with funding costly projects is nothing new. While we are proposing a funding framework that we believe is practical and attainable, we recommend that the Tollway and its partners continue to discuss options to find the appropriate funding mix necessary to complete the project in a timely manner. The Route 53 extension as recommended by the Council will yield significant benefits not only in Lake County, but for the region. We are pleased with the progress achieved by the Council and look forward to working with the Tollway to build a project of which we can all be proud. Along with the environmental protections integrated as part of the road design, we now have a reasonable funding concept and the consensus to move forward.

Estimated Project Costs and Revenues

This document includes planning-level cost estimates based on 2020 dollars. Costs include 5% annual escalation from 2012 to 2020. The tolled portion for each scenario includes an assumed $200-$350M for right of way. Cost estimates include environmental design features, such as tunnels, depressed roadway sections, berms, and storm water treatment which are captured in the “Roadway Construction” list item. In keeping with the project’s commitment to 21st century road, the cost estimates include significant community, aesthetic and environmental design features, such as tunnels, depressed roadway sections, berms, and stormwater treatment, which are captured in the “Roadway Construction” list item. An additional 4% of construction costs is included for environmental and noise mitigation.

Cost Estimation Methodology

The methodology used to estimate costs for the Route 53/120 project combines this experience with a number of additional factors, including;

- **A Look Back** – considering bid tabulations (actual costs) associated with 2011 construction completed by the Illinois Department of Transportation for comparable facilities.
- **A Look Forward** – using cost estimates produced for the Elgin O’Hare West Access – a future project that includes items that are similar to Route 53/120.
- **Industry Expertise** – employing professional engineers who use tested and accepted industry assumptions in building realistic cost estimates.

Long-Term Funding Plan for Stewardship and Monitoring

Cost estimates include a line item for perpetual stewardship and monitoring to provide funding for the assurances required for land protection and restoration will be put in place to successfully accomplish the vision and performance requirement of this program over the long term. The project will establish funding mechanisms and dedicate funds for meeting all obligations to achieve the ongoing environmental performance outcomes defined in this document. This must include funding for annual monitoring of operations to ensure the project continues to meet the defined performance standards.

In addition to the funds required for the environmental components included in the road construction, the Tollway and some combination of State, Lake County and/or local governments will commit to putting in place funding mechanisms for:

- Required land protection.
- Long-term stewardship, enhancement and monitoring of the newly protected landscapes addressing direct and indirect impacts.
- Unintended natural resource consequences of the road construction and/or its operations.

Over the 50 year lifespan of the road, the cost to address habitat management is initially estimated at $81M. This figure will be updated as the project design, impacts and needs are defined. Building on Tollway partnerships with forest preserve districts, the Department of Natural Resources, the Nature Conservancy, and other conservation partners, this project will establish appropriate protocols for long term maintenance and stewardship of the affected programs and restoration areas. The actual legal funding structures may include some combination of the following:

- Sureties for performance.
- Establish a conservation endowment or trust fund.
- Right of way working lands maintenance funding.

Baseline and Cost Estimates

Following is baseline and cost estimate information regarding the estimated cost ranges for the Route 53/120 project.

Figure 7: Baseline Estimates for Alignments 1 and 2

Baseline Estimates	**Alignment 1**	**Alignment 2**
Total Cost	**$2.220B - $2.513B**	**$2.388B - $2.706B**
Cost Range for TOLLED Portions	$1.969B - $2.244B	$2.293B - $2.603B
Cost Range for NON-TOLLED Portions	$251M - $269M	$95M - $103M
Revenue (2025-2040 gross annual revenue based on $0.20 per mile for passenger cars)	$40M - $65M	$60M - $95M
Bonding Capacity (25-35 year term)	$200M - $230M	$360M - $410M
Funding Needed for Total Project (from Other Sources)	**$1.990B - $2.313B**	**$1.978B - $2.346B**
Funding Need for TOLLED Portions	$1.739B - $2.044B	$1.883B - $2.243B

Figure 8: Cost Estimates for Alignments 1 and 2 (Low end of range*)

	Alignment 1	Alignment 2
Roadway Construction**	$1,171,450,000	$1,276,270,000
Toll and ITS Infrastructure	$26,550,000	$40,720,000
Maintenance of Traffic	$28,260,000	$27,330,000
Environmental and Noise Mitigation	$78,360,000	$88,120,000
Engineering	$412,240,000	$447,920,000
Construction Contingencies	$222,500,000	$226,920,000
Restoration and Stewardship Fund	$81,000,000	$81,000,000
Right-of-Way	$200,000,000	$200,000,000
Total	**$2,220,360,000**	**$2,388,280,000**

* This cost breakdown shows the low end of the range of project cost estimates. For the full cost range, please see the Baseline Estimates, page 54.

** Roadway Construction includes roadway items, bridges and retaining walls, and significant community, aesthetic and environmental components including depression of the road bed, underpasses and an innovation stormwater treatment system.

Figure 9: Cost Estimate for Alignment 1

$2,220,360,000

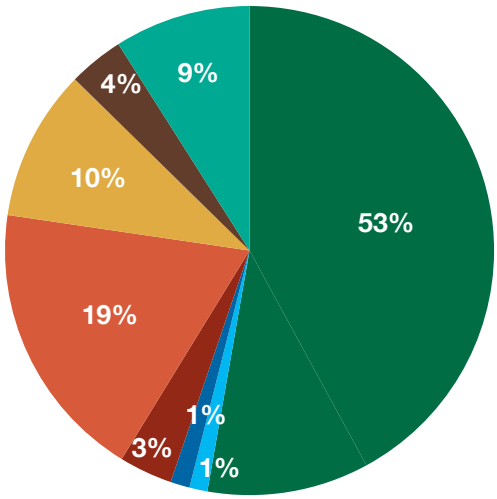
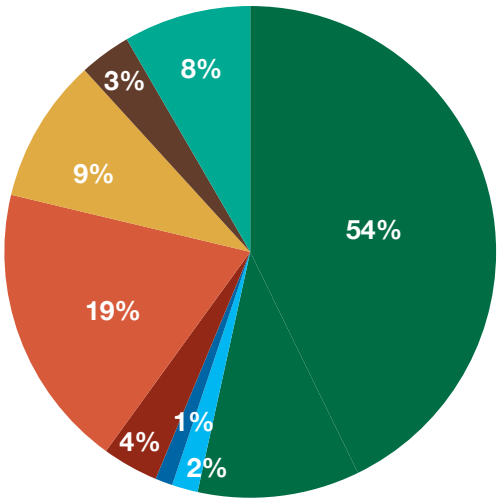


Figure 10: Cost Estimate for Alignment 2

$2,388,280,000



Menu of Funding and Financing Options

The following table represents a number of options for funding and financing the Route 53/120 project. All options shown in this menu are based on Alignment 2. Menu items 1-4 were developed by CMAP.

Figure 11: Menu of Funding and Financing Options

	Menu of Options	**Cost**	**Gross Revenue**	**Bonding Capacity** (Rate and term shown to left)
1	**Value Capture: Special Service Area (SSA)** 2020$. Assumes SSA tax rate of 0.50%. Shows original and expanded VC area. Expanded area applies a lower tax rate of 0.21% in Cook County. Ranges reflect standard bonding and TIFIA bonding. Excludes existing residential.		--	Smaller VC Area = $20M - $66M Expanded VC Area = $69M to $176M
2	**Value Capture: Tax Increment Finance (TIF) District** 2020$. Assumes 50% diversion to underlying districts. Shows original and expanded VC area. Ranges reflect standard bonding and TIFIA bonding. Excludes existing residential.		--	Smaller VC Area = $35M - $269M Expanded VC Area = $193M - $626M
3A	**0.25% Lake County Sales Tax** All bonding capacity assumes 2020$. Ranges reflect standard Lake County bonding (20 year) and TIFIA bonding.		$24M - $30M	$192M - $287M
3B	**0.50% Lake County Sales Tax** All bonding capacity assumes 2020$. Ranges reflect standard Lake County bonding (20 year) and TIFIA bonding.		$49M - $60M	$384M - $573M
4	**Lake County Motor Fuels Tax (Four-Cents)** All bonding capacity assumes 2020$. Ranges reflect standard Lake County bonding and TIFIA bonding.		--	18 MPG = $116M - $184M 35.5 MPG = $59M - $93M 54.5 MPG = $38M - $61M
5	**Congestion Pricing** Additional annual gross revenue shown. Bonding capacity assumes 6% rate and 25-35 year term.	**N/A**	$10M - $20M	$115 - $135M (1.5X Coverage)
6	**Increase Toll Revenue through Indexing** Apply 2% annual increase to passenger cars: .20 in 2025, .26 in 2040. Assumes 6% rate and 25-35 year term	**N/A**	$0M - $15+M	$58M - $93M (1.5X Coverage) $44M - $70M (2X Coverage)
6A	**Congestion Pricing Combined with Indexing** These two options are not additive. However, when combined, they produce a greater benefit than when used alone. Indexing would a apply 2% annual increase to passenger cars: .20 in 2025, .26 in 2040. Assumes 6% rate and 25-35 year term	**N/A**	$10M - $20+M	$138M - $171M (1.5X Coverage)
7	**Use Inside Shoulder as 3rd Lane on Rt. 53 During Peak** Assumes Hybrid Scenario, .20 per passenger car. Additional annual gross revenue shown. Bonding capacity assumes 6% rate and 25-35 year term.	$138M - $201M	$0M - $5M	$8M (1.5X Coverage) $6M (2X Coverage)
8	**Add Lane in each direction (for six lanes) on Rt. 53** Assumes Hybrid Scenario, .20 per passenger car. Additional annual gross revenue shown. Bonding capacity assumes 6% rate and 25-35 year term. Revenue is higher than menu option 7, but appears to be the same due to rounding.	$172M - $266M	$0M - $5M	$17M - $21M (1.5X Coverage) $12M -$16M (2X Coverage)
9A	**Toll Existing 53 – widen and reconstruct** Cost assumes new eight-lane from I-90 to Lake Cook Rd. Additional annual gross revenue shown. Bonding capacity assumes 6% rate and 25-35 year term.	$380M - $418M	$75M - $100M	$483M - $556M (1.5X Coverage) $363M – $417M (2X Coverage)
9B	**Toll Existing 53 – reconstruct only** Cost assumes reconstructed six-lane from I-90 to Lake Cook Rd. Additional annual gross revenue shown. Bonding capacity assumes 6% rate and 25-35 year term.	$280M - $308M	$70M - $95M	$471M - $544M (1.5X Coverage) $353M – $408M (2X Coverage)
9C	**Toll Existing 53 – reconstruct only and improve 53/290/90 interchange** Cost assumes reconstructed six-lane from I-90 to Lake Cook Rd., including improvements to the interchange (approx $1.310B) . Additional annual gross revenue shown. Bonding capacity assumes 6% rate and 25-35 year term.	$1,590M - $1,618M	$70M - $95M	$471M - $544M (1.5X Coverage) $353M – $408M (2X Coverage)

Menu of Options		Cost Range	Gross Revenue	Bonding Capacity (Rate and term shown to left)
10	**Longer Term Borrowing** Increase in bonding capacity by changing to a 35 year term rather than 25 year term. Would require legislative approval.	**N/A**		$59M (1.5X Coverage) $43M (2X Coverage)
11	**Lower Cost Borrowing** Shows impact of 1% reduction in interest rate over 25-35 year term using the Hybrid Baseline scenario	**N/A**		$58M - $79M (1.5X Coverage) $44M - $60M (2X Coverage)
12	**Add Toll at IL Route 132 to and from the south** Assumes Hybrid scenario, .95 IPASS and $1.90 rates for passenger cars beginning in 2025. 2040 gross revenue shown. Assumes 6% rate and 25-35 year term	Minimal Cost (gantry only)	$10M - $15M	$80M - $94M (1.5X Coverage) $60M - $71M (2X Coverage)
13A	**IL Route 132 Toll AND Increase Waukegan Toll** Assumes Hybrid scenario, Passenger car rates beginning in 2025: .95 IPASS and $1.90 cash at IL 132; $1.75 IPASS and $3.50 cash at Waukegan. Assumes 6% rate, 25-35 year term	Minimal Cost (gantry only)	$30M - $50M	$269M - $317M (1.5X Coverage) $202M – $238M (2X Coverage)
13B	**IL 132 & Increased Waukegan + Tolling at Border** Assumes Hybrid roadway scenario. All elements of 13A, plus extending Tollway to the state line. Assumes new ramp plazas at Russell Road (state line) and US-41, with passenger car rates: .30 IPASS and $.60 cash. Assumes 6% rate and 25-35 year term	Minimal Cost	$35M - $55M	$301M - $354M (1.5X Coverage) $226M - $265M (2X Coverage)

Proposed Financial Framework

The proposed financial framework includes tolling recommendations, other revenue sources and revised cost assumptions that together reduce the shortfall.

Council's Tolling Recommendations

- On the new Route 53
- Other Tolls in Lake County
- Congestion Pricing
- Tolls on 53, South of Lake Cook Road to I-90
- Accelerated Opening of Road

On the New Route 53

The Council recommends that the extension of Route 53 be a four-lane tolled parkway. It is assumed that passenger car tolls would be set at a minimum of 20 cents per mile, with higher tolls charged when necessary to manage demand to a prescribed operating threshold.

Other Tolls in Lake County

The second issue that should be addressed as part of the funding mix is a toll system in Lake County that is equitable and uniform. While change is never easy, we recognize that we have to be willing to address issues of fairness. We support the principle that everyone using the Tollway should pay for its use. The Tollway should address opportunities to balance tolling along I-94 in Lake County so they are equitable and uniform for the users. This could include collecting tolls on currently un-tolled movements and adjusting tolls at all access points to better balance all tolls in Lake County. These changes will be critical in funding this project and should be made as soon as practical, without waiting for the completion of Route 53.

Congestion Pricing

Congestion pricing should be implemented by the Tollway, whereby tolls are varied based on the level of congestion at various times of day to guarantee free flow travel speeds for those who pay. This can result in more efficient use of the roads and minimize the need for additional costly expansion. The Council recognizes that congestion pricing can make travel prohibitively expensive for lower income drivers. Equity is one of the core values embodied in the Council's guiding principles, and it is important to recognize the issue of equity and address it directly. The Tollway and State should consider social equity

impacts from congestion pricing and take appropriate action to mitigate them without compromising the congestion-reducing purpose of congestion pricing. There are several examples from other states that should be considered, including Minnesota's gas tax credit that was enacted when that state increased its gas tax a few years ago.

Tolls on Existing Route 53

We recommend that the section of Route 53 south of Lake Cook Road to its connection with I-90 (Jane Addams Tollway) be tolled. The reconstruction of that segment is not currently funded in the state's road program, however given the age of the existing infrastructure it reasonable to assume that improvements to this road will be needed. Over 100,000 vehicles per day now travel in the segment of existing Route 53 between Lake Cook Road and Dundee Road. This high traffic volume causes a significant amount of congestion in the peak periods at the Lake Cook Road and Route 53 interchange, wasting time, money and fuel. There are obvious benefits of the Route 53 extension to the users of Route 53 and communities in northwest Cook County, and it is reasonable that tolls from the Cook County section be implemented to not only pay for the eventual reconstruction of that section, but for the north extension as well. Additional coordination is necessary with the Federal Highway Administration and Illinois Department of Transportation regarding the use of toll revenue on the existing Route 53. Additional improvements to the existing Interstate 90 at Route 53 interchange should also be considered as the use of toll revenue from the existing roadway is prioritized.

Tolling the existing Route 53 facility will require upgrades to the roadway including reconstruction and adding tolling infrastructure. The Council's illustrative funding scenario does not include the cost of upgrading the existing I-90 interchange, although those costs are available in the funding and financing matrix. Because the high cost of the interchange upgrade, if interchange upgrades are a condition of tolling existing Route 53, it will need to be eliminated from consideration.

Accelerated Opening of Road

If, as the Council recommends, the timetable for construction is accelerated by two years, it will enable some tolls to be collected two years earlier, resulting in additional revenue to support the project.

Other Revenue Sources

New County and Local Sources

- Value capture
- Sales tax
- Motor fuel tax

State Share

- ROW contribution
- State Annual Program/ Future Capital Program

Federal Funds

- Highway and transit funds
- Other, such as wetlands conservation, and bike paths

Revenues from Tollway System

- Existing toll road resources
- Systemwide toll measures
- Indexing tolls

New County and Local Sources

Building an innovative 21st century road cannot be done without a serious commitment to the environment and the local character of Lake County. These commitments add to the cost and go above and beyond what the Tollway can fund without additional support. The Council recommends that there should be a reasonable financial contribution from the Lake County area to help pay for the additional design and environmental provisions, and also recognize the benefit from economic development that will result from the extension of Route 53.

Various forms of value capture should be explored by Lake County and area communities. Value capture utilizes a portion of the private property value created by public infrastructure investments to fund part of the cost of that infrastructure. As a part of the overall funding mix, we support some form of value capture for this project. The illustrative funding scenario (on pages 64 and 65) includes two possible value capture methods: tax increment financing (TIF) and special service area. In addition to value capture funding from communities directly adjacent to the proposed facility, countywide methods such as a 0.25% sales tax or a motor fuel tax (assuming a fleet average of 35.5 mpg) were also explored. This should not be taken as a recommendation of the Council, but merely one possible combination of these tools.

We know that western Lake County will continue to struggle to attract non-residential development without a better transportation system, but we also recognize that if the business costs are too high, we limit our economic development opportunities. Continued discussion is necessary to determine the most appropriate value capture method. State statutes do not currently allow multijurisdictional value capture options; legislation will be needed to create a vehicle for local funding of transportation improvements that cross multiple municipalities.

State Contribution

The Council recommends that the State contribute to the project costs in two ways: land acquisition for the right of way and upgrades to the non-tolled portions of Route 120. The State should provide for the costs of land acquisition for the project, some of which have already been incurred by IDOT.

In addition, the Council recommends seeking some funding through the annual state road program (composed of state and federal sources), as well as the next state capital program to support the project.

Additionally, those sections of Route 120 that are not expected to be tolled should be funded by the State. While in the past the Tollway has not received funding through the road program, there is no theoretical reason that it can't be done and there are examples from other states where it is being done. The Council requests support and assistance from area legislators to work with the Governor, IDOT and the General Assembly to maximize State assistance to complete this project.

Federal Funds

The Council recommends that appropriate sources of federal funds be sought to support this project. Federal surface transportation program sources should be thoroughly explored, especially those that encourage innovative, context sensitive highways. Federal environmental protection and clean water programs should also be examined for sources of support. Many federal funds are delivered via the State, and the Tollway and Lake County should request assistance from the State Congressional delegation in identifying the best sources of federal support.

An important caveat regarding federal involvement: the use of federal funding sources will require federal involvement in all future phases of this project, which may eliminate the possibility of expediting the process and accelerating the timeline for construction and opening.

Tollway System Funds

After all other funding sources are determined, remaining funds necessary to fully fund the project should come from the overall Tollway system. The Tollway should be considered and funded as a complete system, and the improvements proposed for this project contribute the functioning of the overall system. Similar to users of I-94 paying for improvements to other area projects, this project will be part of the Tollway system and should be supported in part by overall system revenues. Some resources may be available as part of the Tollway's previously approved capital program.

If capital program funding is insufficient, a system-wide toll increase should be considered, just as was done to fund the Elgin-O'Hare and other elements of the Tollroad capital program. The Council acknowledges that revenues from a system-wide toll increase cannot be used solely to support this project. A portion of the additional revenue from a system-wide toll rate increase scenario would need to be assigned toward addressing the Tollway's existing needs as a priority, as well as consideration of other system expansion projects and new or expanded interchange projects.

The Council recommends regular adjustments in passenger car tolls on the project consistent with changes in consumer prices and costs for road construction and maintenance. This practice, commonly referred to as indexing, is already scheduled to be applied to commercial vehicle toll rates on the Illinois Tollway system and the project. Within the menu of funding options, the estimate for increased revenues from indexing tolling rates include only those revenues generated by the proposed facility, not the entire Tollway system.

Methods to Revise Cost Assumptions

The Council proposes several potential modifications to the cost and borrowing assumptions that could reduce the total anticipated cost, thereby reducing the funding needed. We understand that for planning purposes, the project team used conservative assumptions to prepare estimates. We respect that, and suggest that these possible cost reduction strategies are still reasonably conservative.

- Detailed design may impact cost escalation and overall project cost estimates
- Accelerate construction (move midpoint to 2018)
- Explore options to lower the cost of financing
- Revise plan to rebuild Route 120 east of Almond Road
- Other

Refined Costs with Detailed Design

The original project cost estimates were based on opening the extension in 2025 and also assumed a 5% annual construction escalation from today through mid-point of construction. Given that the project is at least six years away from being constructed, we believe that the current construction bid climate offers opportunities to lower the cost of escalation. The cost estimates are based on years of construction price indices in the Chicago Metropolitan area. While some years during the mid-2000's experienced hyperinflation due to a variety of national and international variables, more recent inflation has been below 5%. Should the current market conditions remain, savings can be realized.

Accelerate Construction

Another idea worth pursuing is to fast track this project given the level of consensus we have reached and move up the mid-point of construction by two years from 2020 to 2018. This would eliminate two years of projected five percent annual cost escalation in the out years that was initially assumed, thereby significantly reducing the estimated overall costs.

Explore Lower-Cost Financing Options

The current cost estimates for debt service assume a six percent interest rate and 25 year term. The Council expects that the Tollway will seek to issue debt at the most favorable times and might be able to achieve a lower interest rate. It is also possible that the Tollway might be given the authority to issue debt for a longer term than is presently allowed. Either of these changes could result in savings for the project, but it won't be known until the debt is issued. Also, the TIFIA program (FHWA Transportation Infrastructure Finance and Innovation Act) may bring better financing terms, specifically if done in tandem with value capture, which is an emerging policy on the national level.

Revise Plan to Rebuild Route 120 East of Almond Road

The options considered by the Council included reconstructing the east section of Route 120 from Almond Road to I-94. This four lane divided highway section is currently under the jurisdiction of IDOT and was an area of concentration for the Lake County Unified Vision Study. While a variety of roadway alignment options have been considered, including eliminating the work between Almond Road and I-94, additional analysis will be required in future phases of this project to finalize the alignment and cost. Some savings may be realized through the use of the existing roadway.

Other Options

We encourage the Tollway to aggressively research and develop improved project delivery techniques that could lower the cost borne by the Tollway. At this point, cost estimates for the project show a range from low to high. There is obviously uncertainty in these estimates due to variables that are currently unknown. The Council recognizes this and expects that there will be opportunities for cost savings as new and better techniques are developed to achieve the required design, environmental and performance standards. Cost savings should be pursued in future phases of project development without compromising design and performance standards.

Draft Funding Scenario for Alignment 2

This funding scenario concept has been developed by the Council for illustrative purposes only to demonstrate how the funding might be achieved. The Council encourages the Tollway and others to scrupulously consider, critique and improve upon these ideas and estimates.

Taken together, dollar estimates can be attached to each of the recommendations outlined in the Council's proposed financial framework. The best-guess estimates presented here are offered as a concept for assembling the funds needed to complete this innovative project. The Council encourages the Tollway and others to scrupulously consider critique and improve upon these ideas and estimates. The next phases of planning and design will require significant refinement for all costs and financing options.

Figure 12: Revised Cost Assumptions for Alignment 2.

Estimated Project Cost (detailed on pages 54 and 55)	**$2.39B**
Revised Cost Assumptions	
Refine/Reduce 120 Improvements*	$59M
Accelerate Midpoint to 2018 (provides approx 10-11% savings)	$217M
Refine Cost Escalation (cost assumes no escalation for next two years)	$ Unknown
Contingency Reductions** (cost includes 9.8% contingency rather than standard 18%)	$ Included
Revised Project Cost Estimate	**$2.11B**

*There are still many variables and options along the IL 120 Corridor. It may be premature to overstate potential savings from refinements along this section.

** The current contingency in the project is 9.8% of the total project cost. This represents 22% of the construction cost. A typical project at this phase would include a 30% construction contingency.

Figure 13: Revenue Options for Alignment 2.

Revised Project Cost Estimate	**$2.11B**
Revenue Options	**Bonding Capacity (1.5X Coverage)**
Tolling New Facility (53/120)	$360M
Other Lake County Tolls (IL 132 Toll, Increased Waukegan, Tolling at Border)	$301M (minimal cost)
Tolling for Existing 53 (reconstruct and toll Route 53 from Lake Cook Road to I-90, excludes cost of upgrading 1-90 interchange)	$191M (net revenue when accounting for additional cost)
Indexing and Congestion Pricing	$138M (no additional cost)
Revenue Earlier (accelerated project assumes revenues one year earlier)	$60M
New County and Local Sources (hypothetical example includes TIF, includes TIF value capture, 0.25% sales tax, motor fuel tax @ 35.5 mpg)	$286M (no additional cost)
Revised Revenue Total	**$1.34B**
Additional Funding Needed from State, Federal and Tollway Sources	**$776M**
State Funding (in addition to transfer of existing right of way)	$???
Federal Funding	$???
Tollway System Funding	$???

5. Create a Corridor Plan and Implementation Strategy

Planning for Land Use, Transportation and Open Space

The Council recommends a coordinated corridor plan be developed that integrates land use, transportation, economic development, and open space. This corridor plan should be consistent with the Guiding Principles and all other recommendations in the Council's Resolution. **A corridor planning effort should accomplish the following:**

- Utilize a market-driven approach to assess the feasibility of future land use change, including analysis of employment trends, potential commercial and industrial development, and the housing mix that is likely to occur if the proposed Route 53/120 is built.
- Balance economic development, open space, and community character goals across municipalities to encourage development of vibrant communities in central Lake County.
- Formulate a multi-jurisdictional economic development strategy to ensure the best possible economic future for central Lake County. Address planning for development desired by targeted industries as well as business attraction strategies.
- Provide strategies for communities to encourage mixed-use, pedestrian-friendly and/or transit-supportive land uses where feasible in order to reduce congestion, air pollution, vehicle miles traveled, and GHG emissions.
- Design the land use and transportation system to facilitate walking and biking, transit, increase local connectivity, and manage the increased local road traffic that will likely follow completion of the road and associated new development.
- Develop an integrated open space system that not only includes the protection and restoration of conservation lands, but also meet residents' and workers' needs for recreation and open space in the corridor.

This recommendation addresses the following Guiding Principles:

- Enhance mobility and accessibility, and relieve congestion, in the Central Lake County Corridor.
- Minimize environmental and long term development impacts of transportation infrastructure and operations.
- Promote environmental enhancements and sustainable practices in all aspects of project development, implementation and operations, and strive to improve the overall environment.
- Promote diversity in all aspects of project development, implementation and operations.
- Develop and apply innovations in all aspects of the project to create a 21st Century modern boulevard that serves as a national and international model.
- Cooperate with agencies and municipalities to deliver the Council's work in a transparent and accountable manner.

Why Is a Coordinated Plan So Important?

In addition to making corridor improvements that facilite mobility, multi-billion dollar road infrastructure improvements will have significant secondary effects on the nearby communities of central Lake County. On the positive side, the improved access brought by the road will stimulate economic and residential development. On the adverse side, new roads can stimulate rapid and unplanned development, traffic can increase dramatically on ill-prepared existing roads, and sensitive ecological areas can be irreparably damaged. Coordinated planning efforts can ensure that adverse side affects are dramatically limited.

Planning for Market-Feasible Development

CMAP's analysis of current local plans indicates that the area is envisioned to develop into retail, office and industrial environments, and residential uses that are primarily single-family homes. However, these plans were developed independently, without coordination among jurisdictions and without the benefits of a comprehensive market study. If the anticipated capacity for commercial development, particularly retail and office development, is totaled for each plan, the sum is far greater than what could reasonably be developed within the corridor at typical densities. Analyzing the market potential across communities will allow municipalities on the corridor to better plan for future development and meet their community goals.

Managing Development Patterns

The Council intends for the facility to be a modern 21st Century parkway, encouraging multi-modal transportation, and preserving important environmental and community assets. This is in contrast to the existing and planned area development patterns, which are more typical of the late 20th century and are low-density developments of separated, single-use districts dominated by auto-centric design and form. Choices about the character of future development along the corridor can foster a more vibrant, mixed-use, and livable community for the 21st century.

Cooperative Implementation

Developing solutions to the land use challenges that a new road brings will require a cooperative corridor plan that develops an integrated solution that local governments want and are able to implement. The corridor has a complex governmental structure, with 20 municipalities and unincorporated Lake County areas within the two-mile corridor that would be affected by the new facility. Because of this, participation from local governments and central Lake County community members is critical. Local decision makers will be at the forefront of implementation, and public support gained through dialogue and public contributions will bolster successes.

Coordinated land use planning along the length of the proposed corridor is necessary to align future growth with community goals and provide a future that residents of Lake County desire. The corridor plan should include stakeholder outreach and involvement to help develop implementation concepts, focusing on cooperative implementation at the local level. The outcome of intergovernmental coordination and joint planning will result in a cooperative vision document with local community support.

Next Steps

Initiate the Corridor Plan

The Council recommends that the full scope of the corridor planning process is determined, and that as soon as possible a commitment is obtained from the Tollway, local municipalities, Lake County, and CMAP to move forward. The corridor plan should be complete 12 to 18 months after full funding is realized.

In order to make the corridor study official, a memorandum of understanding setting up the study management structure and scope should be developed among the entities including the municipalities, Lake County, the Tollway, and other key stakeholders, which should be approved within several months of the release of the Council's Resolution. Recognizing the "environment" as a significant stakeholder, representation on the Corridor Planning Committee from independent environmental organizations is required. The environmental agendas will be given sufficient resources to fully participate in a professional manner. Lake County and the corridor municipalities, with the cooperation of the Tollway, should apply for assistance through the CMAP's Local Technical Assistance program (LTA) via the upcoming round of applications, due in August 2012. The LTA will not be a sufficient source of resources but it would provide a beginning point and complement other sources of funding. The Tollway, CMAP, Lake County and other key partners will be responsible for obtaining funding for the plan.

Determine How to Finance the Project

The Council recommends that a revised cost estimate will need to be determined in conjunction with the detailed design concept to capture opportunities for cost savings through efficient design elements. The Council agrees that the project should be funded through the use of tolling, which should include congestion pricing and indexing of toll rates. The Council recommends that funding from local sources will be a necessary component to fund the project. The Council supports tolling existing Route 53 from Lake Cook Road to I-90 and a cooperative approach to develop a tolling plan that is equitable and uniform for all access points in Lake County; including adding tolls to existing un-tolled access points, adding tolls at the state border and adjusting the rates at the mainline Waukegan Plaza on the Tri-State Tollway. The Council also supports the use of Tollway system-generated revenues to enable this project which is vital to the region's mobility, economic development and quality of life.

Develop a Detailed Design Concept

The Council concludes that the project has sufficient technical merit and financial feasibility to develop a more detailed design concept. This concept will reflect all of the roadway design and key features, and all of the performance requirements, outlined in this Resolution. Therefore, the concept will be developed in sufficient detail to fully understand the environmental, community and transportation impacts of construction, and to fully understand the capital and operating costs, and appropriate funding plan, for further consideration by the Council. This design intent document will include a plan view with pavement edge, sidewalks, trails, overpasses, underpasses, vegetation, landscaping and preservation elements. A perspective sketch of each interchange and overpass should be included to illustrate placement and character of the facility and right of way.

Included in the development of the detailed design concept will be thorough analysis of existing traffic conditions and projected traffic growth. Analysis of existing traffic conditions in the study area may include traffic counts, travel time surveys, trip origin-destination surveys, and assessments of drivers' willingness to pay. A more detailed analysis of the proposed configuration and operating characteristics will also be conducted with respect to capacity, reliability and maintenance, safety and revenue considerations, and other risk factors that may be associated with a tolled facility.

Examination of non-tollway alternatives for meeting mobility needs in central Lake County should be given thorough consideration during the next planning phase. This should include the consideration of land use solutions that reduce vehicle travel demand and congestion, in addition to a standard "no build" option that considers improvements and/or widening on existing roads.

The design concept should also consider all potential trade-offs associated with modifying the project design in order to find the appropriate cost-benefit balance.

Continued Council Member Involvement

Any steps forward with the proposed Illinois Route 53/120 project will involve the local communities of central Lake County as partners. The project shall engage the public and stakeholders at each stage, and opportunities for input and involvement will be tailored to the project stage and level of activity. Members of the Blue Ribbon Advisory Council will be kept informed of all activities and encouraged to remain involved. Should the project proceed to the point of construction, the Illinois Tollway will convene a Local Advisory Committee in accordance with the Toll Highway Act, where current members of the Council would be excellent candidates for the new advisory body.

Secure Local, State, and Federal Authorizations

In order to proceed to the final stages of planning, design and construction for Route 53/120 a series of local, state and federal authorizations may need to be pursued including, but not limited to:

- Illinois General Assembly action to provide the Illinois Tollway the same level of immunity from tort liability as the Illinois Department of Transportation (IDOT). This action would be requested for only the Route 53/120 facility because it more closely aligns with a suburban, arterial roadway than a typical toll facility.
- Changes to allow extended borrowing term up to 35 years.
- Legislation to support final local funding programs such as value capture, multi-jurisdictional TIF-like districts, and special service areas.
- Additional Illinois General Assembly action as required, to affirm the design and performance standards recommended in the Council's resolution, and to define the limits of system expansion along both Route 53 and Route 120.
- Federal authorization to allow tolls to be added to existing federally funded roadways.
- Transfer of land, rights or other property held by the State of Illinois for the purpose of constructing and operating this project.
- Countywide referenda or other authority to support final funding recommendations.

Summary Report: The Council's Background Work

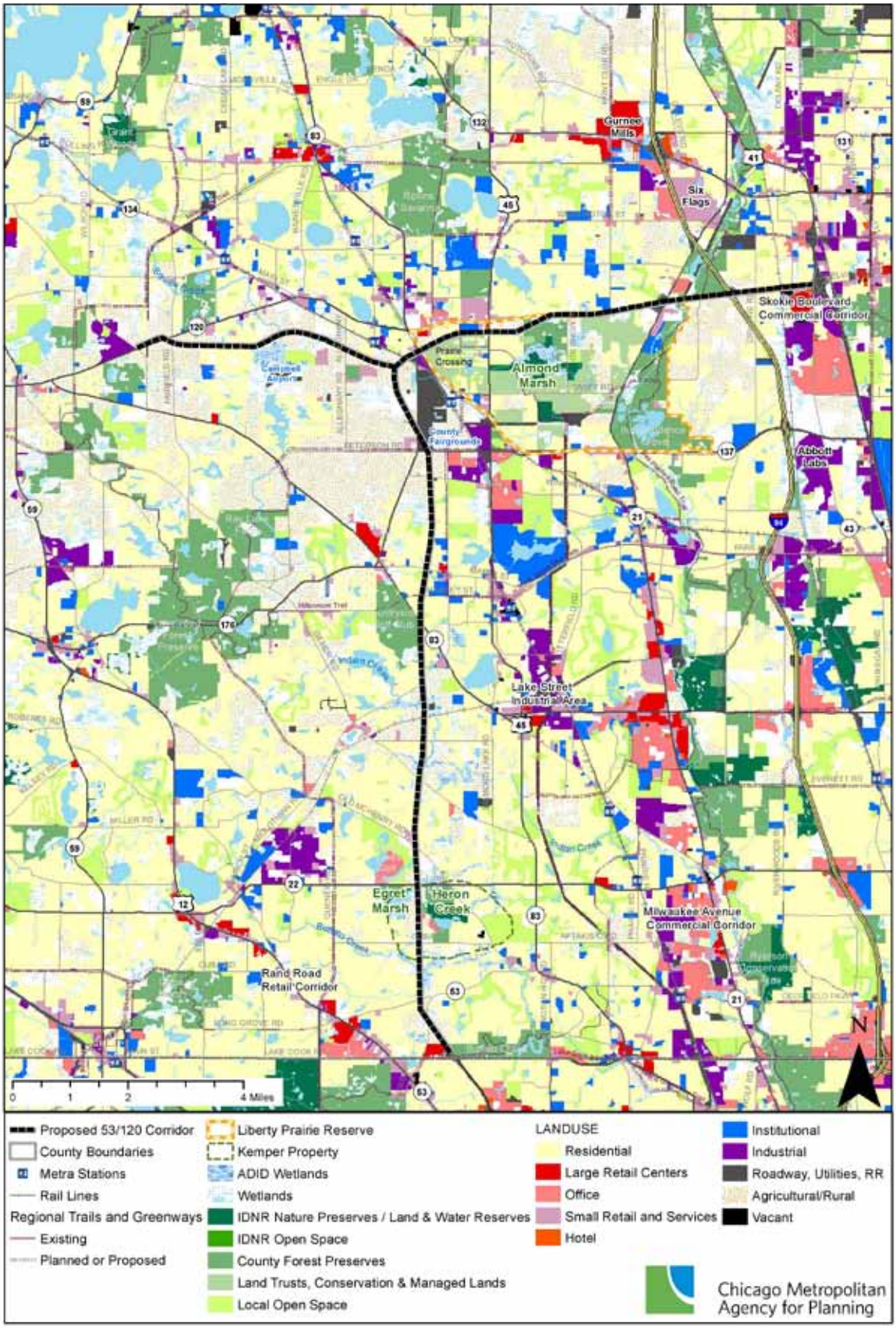
Context for a New Road in Lake County

Community Context for Lake County

Current Development Patterns

Land use in central Lake County is characterized by low-density development, both rural and suburban. Within two miles of the proposed facility, over 50 percent of the land is agricultural, open space, open water, or vacant; over 36 percent is residential, and of that nearly all is developed as single-family homes and townhomes (89 percent).

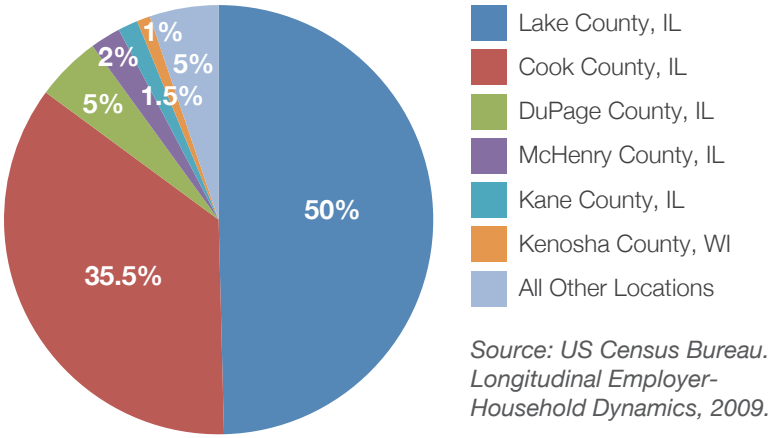
Figure 14: Existing Land Use and Environmental Features for the Proposed Lake County Corridor



Commuting Patterns

While the largest employment clusters are located in the southeast and east-central sections of the county, residential development has occurred farther west and north, especially along the Route 120 corridor. This mismatch between "home" and "work" for many residents of Lake County means more driving.

Figure 15: Where do Lake County Residents Work?



Source: US Census Bureau. Longitudinal Employer-Household Dynamics, 2009.

Nearly half of the residents of Lake County also work in the county, meaning many work trips may be entirely reliant on local roads.

Conservation Lands

Lake County is known for its conservation ethic, and with good reason. The county is home to more threatened and endangered species than any other county in Illinois.[1] Within two miles of the proposed Route 53/120 corridor, there are many species recognized as threatened or endangered. Protected lands within the corridor area total over 8,100 acres, including Illinois Nature Preserves, municipal parks and open space, township holdings, Lake County Forest Preserves, and conservation easements. Additionally, there are four Audubon Important Bird Areas, totaling over 2,200 acres, and 14 Illinois Natural Areas Inventory Sites of nearly 1,700 total acres.

[1] Lake County Forest Preserves. www.lcfpd.org/conservation.

Almond Marsh in Lake County Illinois Nature Preserve is a wetlands and wildlife bird sanctuary and Great Blue Heron Rookery.

Planning for Future Growth

The proposed Route 53/120 project has been under evaluation since the 1960s. In recent years, many municipalities within the vicinity have incorporated the facility, particularly the Route 120 improvements and proposed bypass, when updating municipal plans. Independently, these jurisdictions have planned for significant increases in commercial, retail, office and industrial development along the corridor. Taken together, the planned employment capacity far exceeds the forecast for growth in the central Lake County area.

- At typical development densities, build out of planned new retail areas within the corridor has the potential to double the existing retail square footage in all of Lake County.
- Housing units and population near the corridor would increase at a significantly lesser rate of four to five percent, in part due to the large-lot zoning in many communities near the corridor.
- More acreage has been allocated to industrial than office, but the existing industrial base in Lake County and the low average density of industrial development means that proposed industrial land uses would only increase approximately 25 percent over existing industrial square footage.
- Housing units and population near the corridor would increase at a significantly lesser rate of four to six percent, in part due to the large-lot zoning in many communities near the corridor.

Figure 16: Future Land Use Change within Two Miles of the Proposed Route 53/120 Corridor

	Future Added Acres		**Estimate Development**	
Future Land Use Change	*from***	*to***	*from***	*to***
Residential	5,200	6,510	8,220 Units	12,450 Units
Retail/Commercial	2,420	3,050	31,210,000 Sq Ft	38,300,000 Sq Ft
Open Space	1,720	1,420	1,720 Acres	1,420 Acres
Industrial	1,670	2,360	19,700,000 Sq Ft	21,920,000 Sq Ft
Office	840	1,350	14,510,000 Sq Ft	26,340,000 Sq Ft
Mixed Use *	120	120	1,190 Units 1,350,000 Sq Ft	1,190 Units 1,350,000 Sq Ft
Government & Institutional	90	130	No Data	No Data
Utility/Waste Facilities	20	20	No Data	No Data
Agricultural Land***	2,890	N/A	N/A	N/A

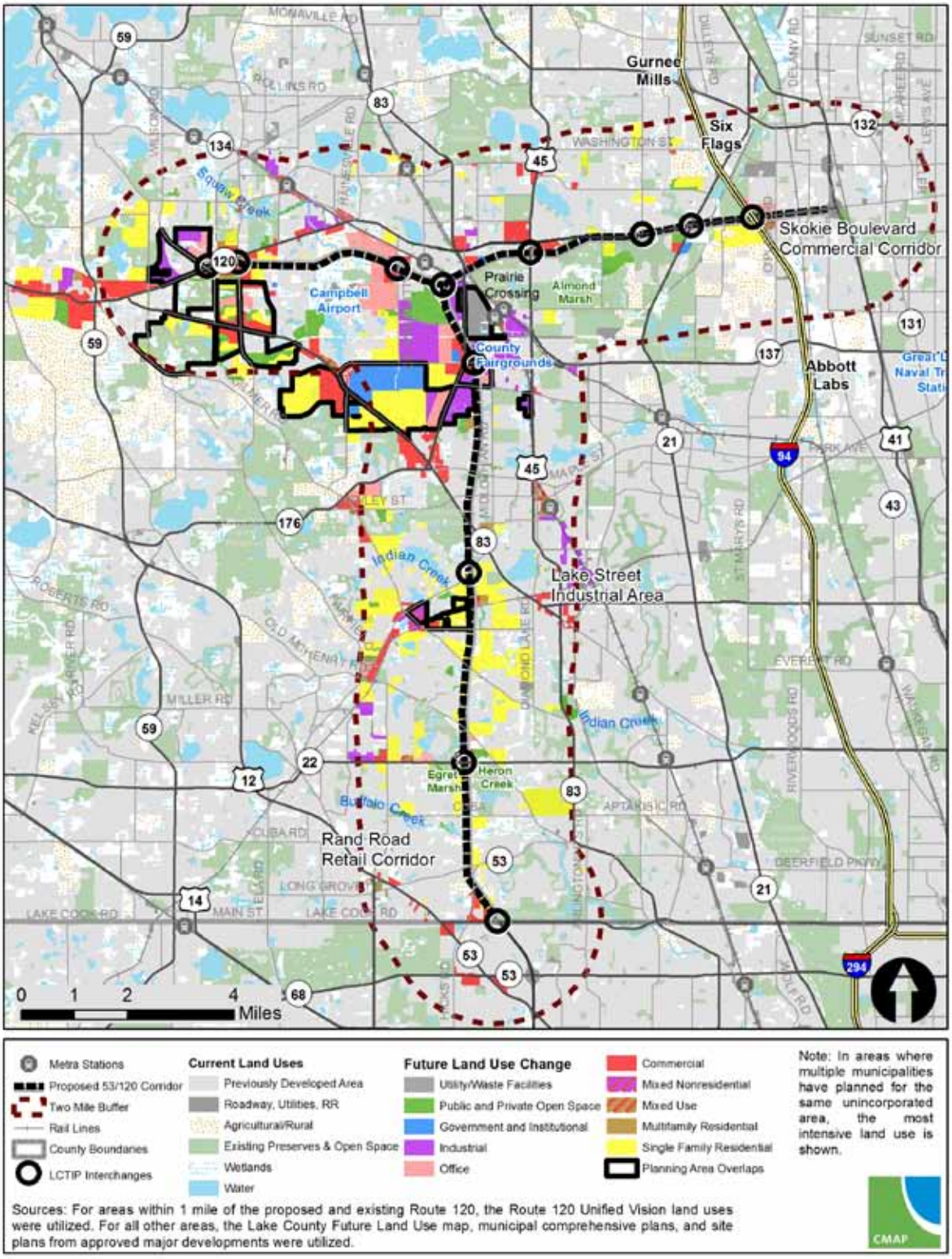
Sources: CMAP analysis of CoStar Data, municipal and county Comprehensive Plans and approved major developments.

* Mixed use refers to downtown or transit-oriented developments. Mixed Use Housing Unit and Retail/Commercial SF totals are not included in the Residential and Retail/Commercial SF totals in Figure 1. All areas proposed for future mixed use had no other proposed land uses, so there is no difference between the scenarios.

** The "From" and "To" scenarios represent the sum of acreage and estimated square footage when the least and most intensive proposed land uses are chosen for all areas. Multiple proposed land uses occurred only in unincorporated areas where the planning areas of two or more municipalities overlapped.

*** Agricultural land does not represent a new or added land use, but instead is a total of existing agricultural acres that are not converted to developed acres in the most intensive scenario.

Figure 17: Proposed Land Use Changes in the Central Lake County Corridor



Given current development patterns and constraints, it is unlikely that all of the area designated for retail in the comprehensive plans will be developed, but it is important to consider the direction planned for the corridor is quite different from existing patterns.

Planning for the 53/120 facility offers the opportunity to review land use plans across multiple municipalities and create a collaborative process where individual communities work together to direct development to some areas, preserve open space in other areas, and share potential fiscal and economic benefits. Without a coordinated approach, development will occur in a disjointed pattern across multiple communities on the corridor, presenting the potential to negatively impact the goals of preserving community character and conserving natural and agricultural areas. Additionally, this kind of scattered development can lead to increased auto trips, total vehicle miles traveled, and congestion.

Transportation Context for Lake County

Longstanding Transportation Needs

Given the project's nearly 50-year history, a mobility need in central Lake County has been identified for some time. Significant congestion currently exists on the arterials in the study corridor, especially in the eastbound and southbound directions in the morning peak and in the westbound and northbound directions in the evening peak. Recent population and employment growth trends have added to the travel demands, with the greatest population growth occurring at the northern part of the project area and the greatest employment growth occurring on the southern part. One focus point of the council's discussions is a large bottleneck that occurs at the current terminus of Route 53 at Lake Cook Road at the southern edge of Lake County. Illinois Department of Transportation traffic data show a total of around 100,000 vehicles a day either enter onto Lake Cook Road from northbound Route 53 or enter onto southbound Route 53 from Lake Cook Road at this location. This is one example of many locations that would be expected to experience significant travel improvement with the addition of the new facility.

Travel demand modeling was performed by project staff to estimate the current and predict the future vehicular transportation conditions in Lake County. The modeling for future years was done within the context of GO TO 2040, the Chicago region's long-range transportation plan. The model predicted over a 30 percent increase in the number of miles traveled and over a 40 percent increase in the time spent traveling in Lake County between 2010 and 2040. Time spent traveling in congested conditions in Lake County was predicted to double by 2040 to total over 130,000 hours a day without the Route 53/120 project. With the project, the 2040 conditions improved significantly with the model estimating countywide time in congestion reduced about 23 percent compared to base 2040 conditions.

Environmental Context for Lake County

There is perhaps no location that presents a greater challenge for the construction of an environmentally sensitive roadway than the proposed corridor for Route 53/120. Lake County has the greatest diversity of unique habitat and species of concern, more than any other county in the State of Illinois.

Lakes and Wetlands

Lake County has extensive wetlands and hydric soils. The corridor intersects six EPA-identified wetlands with "exceptionally high functional value," meaning that they provide stormwater storage, harbor rare species, or meet other criteria. In many cases, however, the wetlands in and around the right of way have been degraded and are also in poor ecological condition. At the same time a number of wetland complexes along the right of way, such as the marsh by Surrey Lane along Buffalo Creek and the marsh associated with Indian Creek, appear to be seriously degraded and good candidates for ecological restoration.

Central Lake County has nearly 20 lakes that would receive stormwater runoff from the proposed Route 53/120 project. Runoff from a new facility can cause a number of significant impacts to these lakes, causing water quality degradation and changes in the amount and frequency of water entering the lakes, which can have significant impacts on shoreline stability, aquatic nuisance plant growths, fisheries, and the values of lake-front real estate.

Protected Lands and Fragmentation

Within Lake County, and specifically within two miles of the right of way, are many publically protected conservation lands and state dedicated nature preserves. These areas contain the best remaining important examples of the healthiest ecosystems in Lake County and provide critical habitat. Lake County is home to the largest number of state and federal threatened, endangered and special concern species of any county in Illinois. According to the Illinois Department of Natural Resources (IDNR) natural

Figure 18: Natural Lands within Two Miles of the Project Corridor

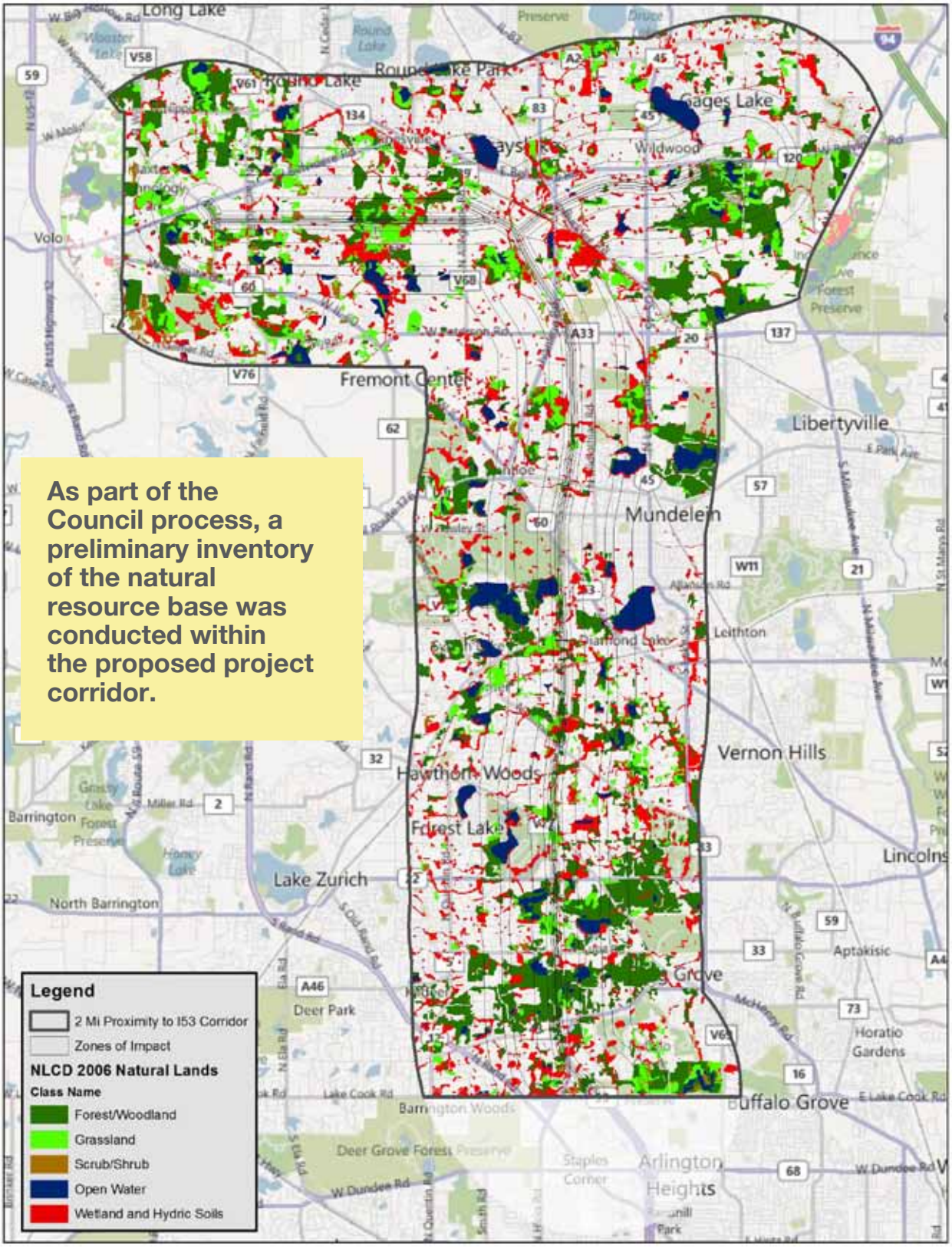
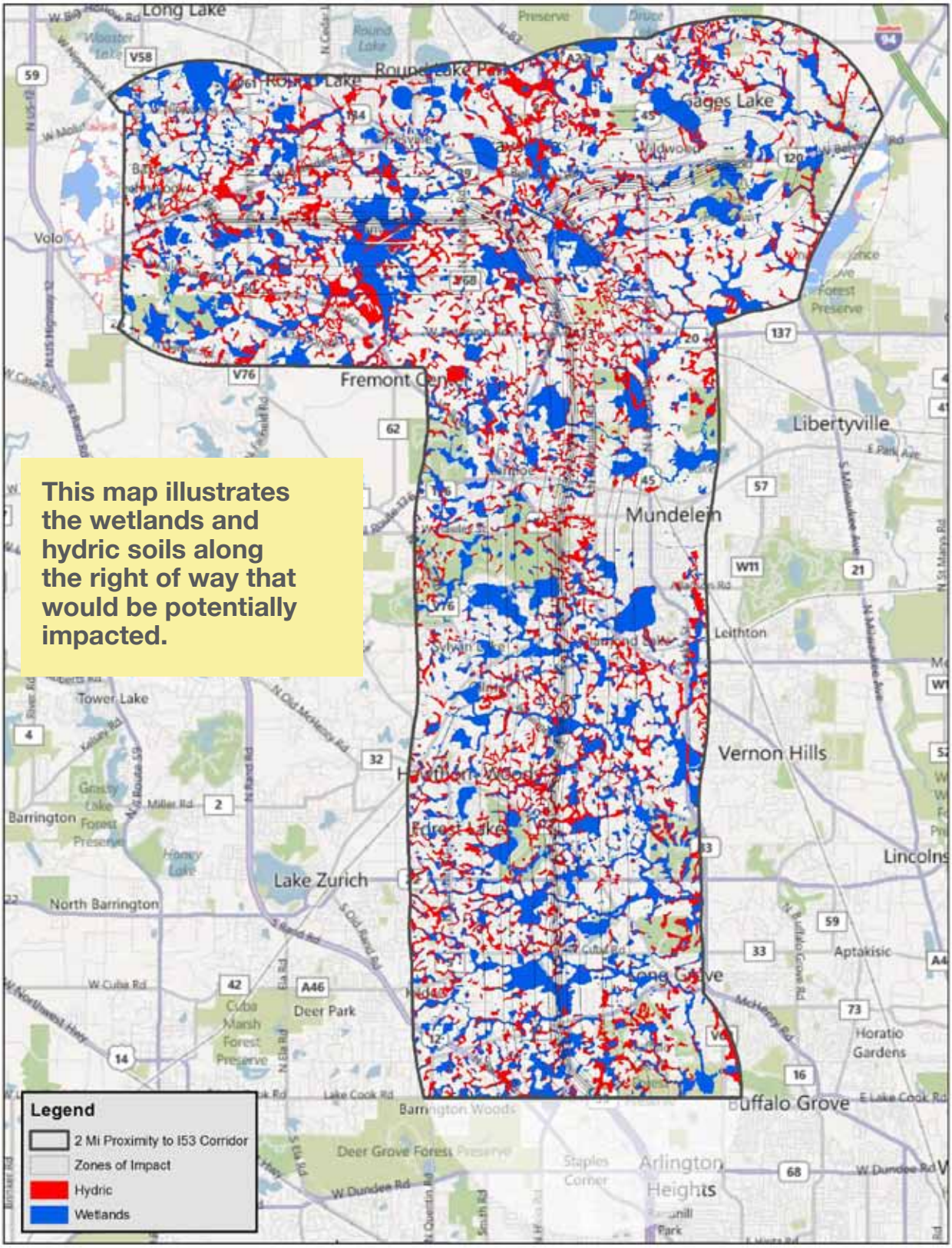


Figure 19: Wetlands and Hydric Soils within Two Miles of the Project Corridor



heritage database, over 54 populations of these "status" species and their critical habitats are found within the zone of impact of the proposed roadway, and many are found within or immediately adjacent to the right of way. The only IDNR site for the recovery of five state threatened and endangered fish species sits less than 200 yards south of the right of way.

The long-term survival of many of these species and ecosystems is dependent on maintaining minimally fragmented blocks of habitat. Rare grassland, wetland and forest breeding birds use many of these habitats. A new roadway poses a huge challenge to mitigating existing fragmentation and preventing future habitat fragmentation within the project corridor.

Lake County Forest Preserve District

The Route 53/120 corridor traverses through the center of Lake County and along the borders of several parcels (including Almond Marsh, Heron Creek, and Egret Marsh) owned and managed by the Lakek County Forest Preserve District. Through the generous support of county tax payers, the District has spent millions of dollars protecting and restoring land and ecosystems for the benefit of Lake County. Lake County Forest Preserves house endangered species, high-quality wetlands and other sensitive habitats. Land preservation has been a priority for Lake County residents and land acquisitions have mirrored these values. The preserves also provide numerous recreational opportunities including recreational trails, bird watching, fishing, playgrounds, and golf.

The Liberty Prairie Reserve

The eastern portion of the Route 120 bypass lies immediately north of an important national model for land stewardship and conservation, the Liberty Prairie Reserve. This 3,300-acre complex of protected state, county, township, and private lands is within a 5,800-acre planning area with more opportunities for land protection. The Liberty Prairie Reserve is a unique private-public partnership that protects a working landscape including several high quality Illinois Nature Preserves, productive farmland and small communities. Over the past 25 years, there have been more than $100 million in public and private investments made in the Liberty Prairie Reserve.

Prairie Crossing

Prairie Crossing, a well-known and highly regarded conservation subdivision, is on the western edge of the Liberty Prairie Reserve. The Prairie Crossing farm is the largest certified organic farm in Lake County (over 100 acres) and sits immediately adjacent to the right of way.

The uniqueness of the Lake County environment and the private-public investment to date in its protection and stewardship require that any future road project be designed, constructed and operated to the highest possible environmental standards.

Financing Context for Lake County

Many financing and funding options for the proposed Route 53/120 corridor were discussed in various levels of detail by the committee, including traditional funding sources, tolls and pricing, innovative financing tools, stakeholder support and participation, and private financing.

Traditional Federal and State Funding

There currently appear to be few opportunities for using traditional funding sources to pay for the Route 53/120 project. At the national level, the potential for a new federal transportation bill has been hotly debated in Congress, and its scale and structure remain uncertain. The backdrop of a growing imbalance between infrastructure needs and financial resources will likely make funding new projects more difficult, and federal transportation funding cannot be relied upon as a funding source. In Illinois, the current fiscal year 2012-2017 Proposed Highway Improvement Program puts the focus on preservation and maintenance of the existing Illinois Department of Transportation system. Funding for the Route 53/120 project is not included in the program. State priorities and funding availability would have to change significantly to allow for funds to be directed to this project.

Using Tolling as a Funding Source

Tolling was assumed to be a funding source for the project. Many different tolling scenarios were discussed and analyzed, including the following:

- Standard tolling at rates comparable to other start-up projects around the country
- Indexing the toll rates to inflation
- Congestion pricing
- Tolling the existing segment of Route 53 between I-90 and Lake Cook Road

All tolling scenarios assumed electronic tolling with no cash collection. Compared to standard tolling, congestion pricing was viewed favorably by the Council as a way to reduce congestion on the facility during peak periods and generate additional revenue. A scenario for tolling of existing Route 53 using rates consistent with the extension of Route 53 at $0.20/mile and restructuring the roadway for tolling generates additional funding.

One of the other options discussed was the TIFIA program which offers federal credit assistance for eligible projects of national and regional significance. The assistance can take the form of a loan, loan guarantee, or line of credit for up to 33 percent of project costs, all of which can boost cash flow to cover project debt. However this program is highly competitive and has seen overwhelming demand, especially in recent years.

Stakeholder support and participation in the form of value capture, sales tax, and motor fuel tax were also discussed by the Council. The analysis found that all three sources have varying levels of revenue potential but there would be significant legislative, policy, and equity issues with each.

Scenario Planning for the Facility

What is Scenario Planning?

Scenario planning is a powerful tool for better understanding the likely costs and benefits of new policy and investment decisions, as well as discovering the long-term impacts of existing plans and trends. Scenario planning works through a process of identifying specific planning issues and then modeling potential solutions into “scenarios” which represent these possible future alternatives. The range of potential solutions can include proposed policy and investment decisions as well as ideas generated from the public, other planning efforts or elsewhere. The scenario planning process uses community goals and guiding principles to help determine a set of evaluation criteria or indicators that measure a scenario’s performance. This can include a community’s desired outcomes, financial feasibility, or environmental impacts among many other things. By evaluating and comparing scenarios and their outcomes, scenario planning can aid decision-making and help to determine a preferred course of action when there are many possible ways forward.

Scenarios for Route 53 and Route 120

Five scenarios were created during the Route 53/120 project. These scenarios explore options for access, roadway and intersection design, environmental enhancements, and land use policies for adjacent development. The Council used these scenarios and their performance outcomes to better understand the range of solutions for the design of the proposed Route 53/120 facility. The following pages include summaries of each scenario.

Figure 20: Example Scenario Map

Scenarios are often illustrated using maps that highlight land use and transportation. Supplemental graphics are also useful in order to visualize a scenario’s on-the-ground appearance.

Scenario A

In **Scenario A** Route 53 is a four-lane untolled arterial roadway. Travel speeds are kept low at 35 miles per hour, and travelers may access adjacent roadways at signalized intersections. This option includes a proposed bypass of Grayslake and joins with existing Route 120 to the east of Grayslake and to the west of Hainesville. This option is the most integrated with the existing land uses, is the lowest cost to construct, but provides the lowest amount of congestion relief and no potential for generating toll revenue.

Scenario A: Route 53 Cross-Section

Scenario A: Route 53 Plan View

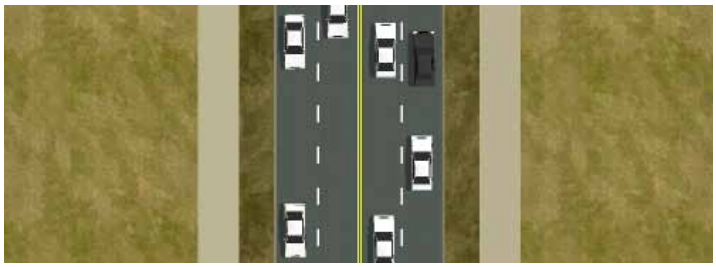
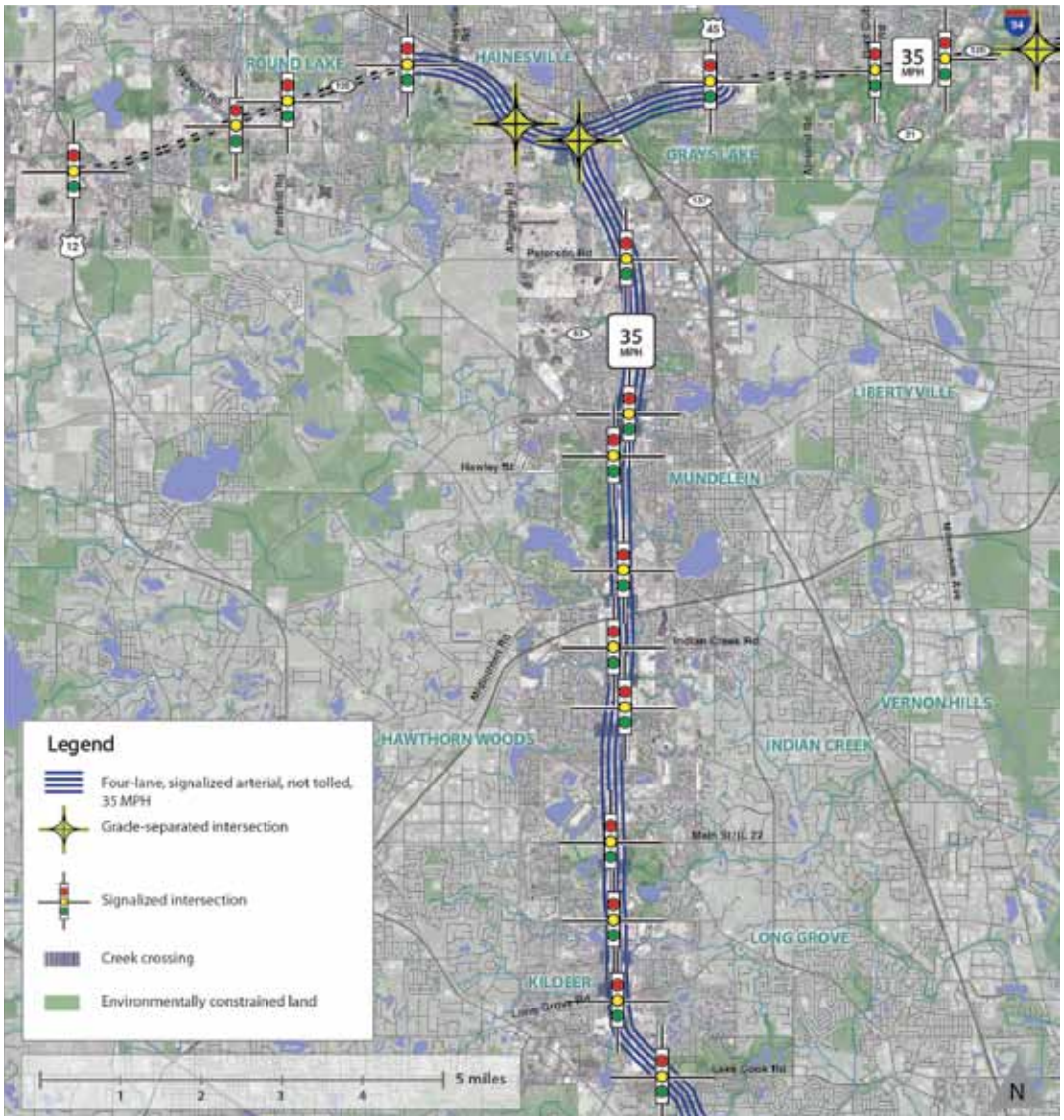


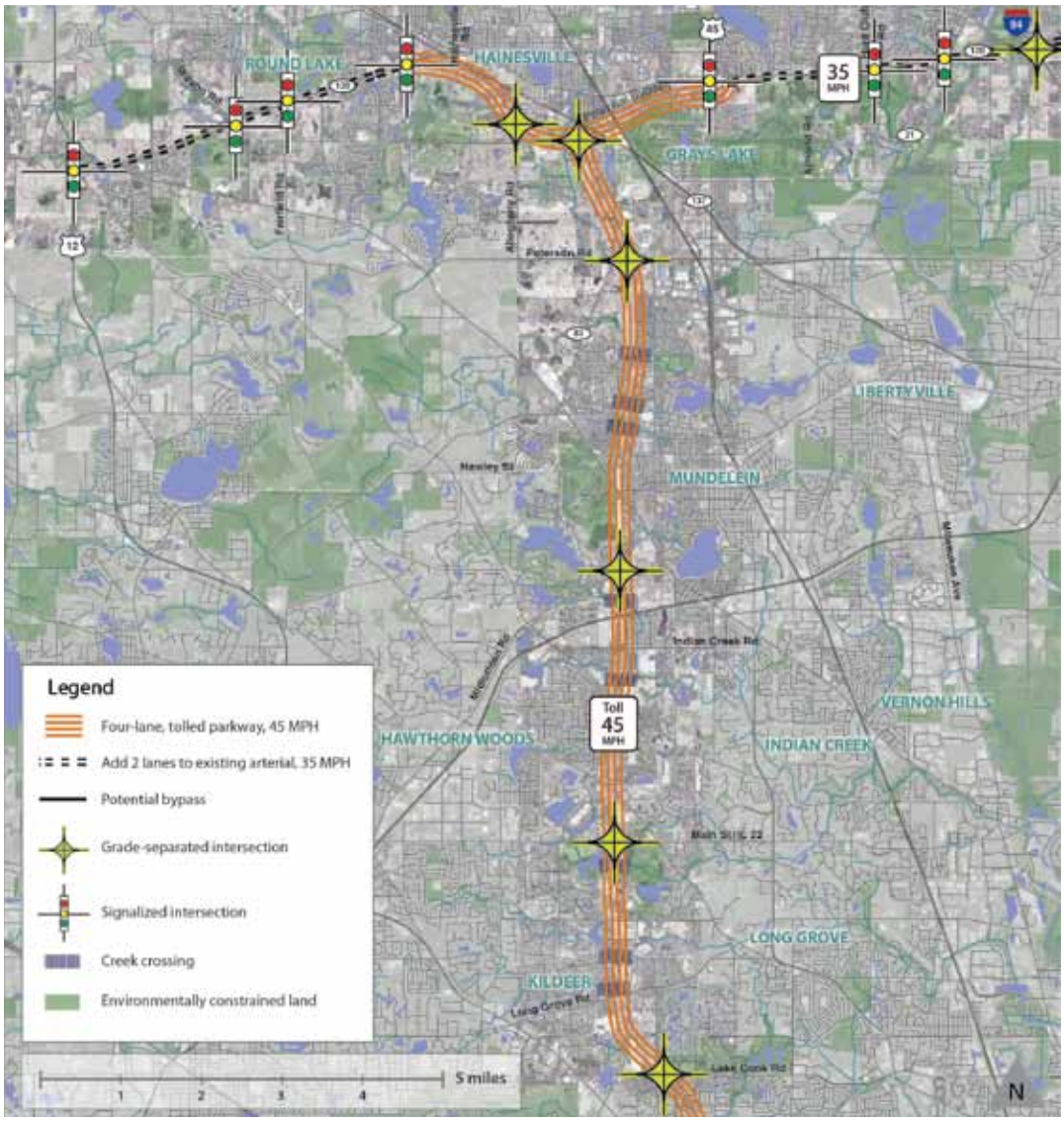
Figure 21: Scenario A Map



Scenario A Highlights:

- Lowest environmental disturbance
- Lowest cost to construct
- Lowest amount of new paved roadway surface
- Lowest travel speed
- Lowest reduction in travel congestion
- Most roadway intersections
- Bypass of Grayslake

Figure 22: Scenario B Map



Scenario B Highlights:

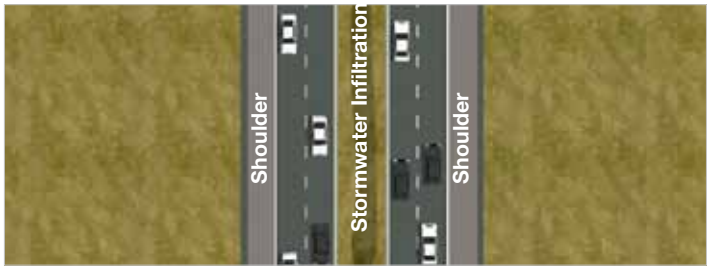
- Low potential environmental impacts
- Moderate amount of new paved roadway surface
- Travel speed of 45 MPH and 35 MPH
- Moderate reduction in travel congestion
- Grade-separated intersections along Route 53 and part of 120
- Bypass of Grayslake
- Widens existing Route 120 east of Grayslake and west of Hainesville

Scenario B

In **Scenario B**, Route 53 is a four lane tolled parkway. Grade-separated intersections allow for controlled access to adjacent roadways. Travel speeds are 45 MPH along all tolled segments of Routes 53 and 120. Un-tolled segments of Route 120 are expanded by two lanes, with signalized intersections and travel speeds of 35 MPH. This option includes a proposed bypass of Grayslake, which joins with existing Route 120 to the east of Grayslake and to the west of Hainesville.

Scenario B: Route 53 Cross-Section

Scenario B: Route 53 Plan View



Scenario C

In **Scenario C**, Route 53 and Route 120 are four lane tolled parkways. Grade-separated intersections allow for controlled access to adjacent roadways. Travel speeds are 45 MPH along Routes 53 and 120. The scenario footprint and paved areas created are both slightly lower, compared to scenarios D and E. Potential environmental impacts and congestion relief are moderate.

Scenario C: Route 53 Cross-Section

Scenario C: Route 53 Plan View

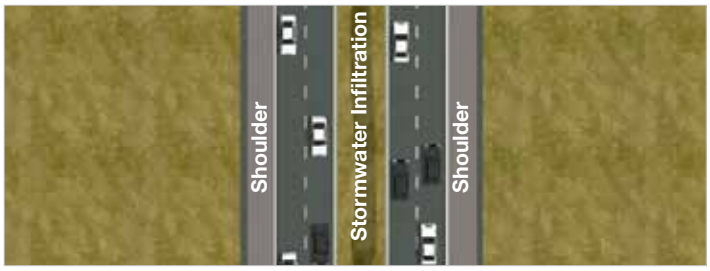
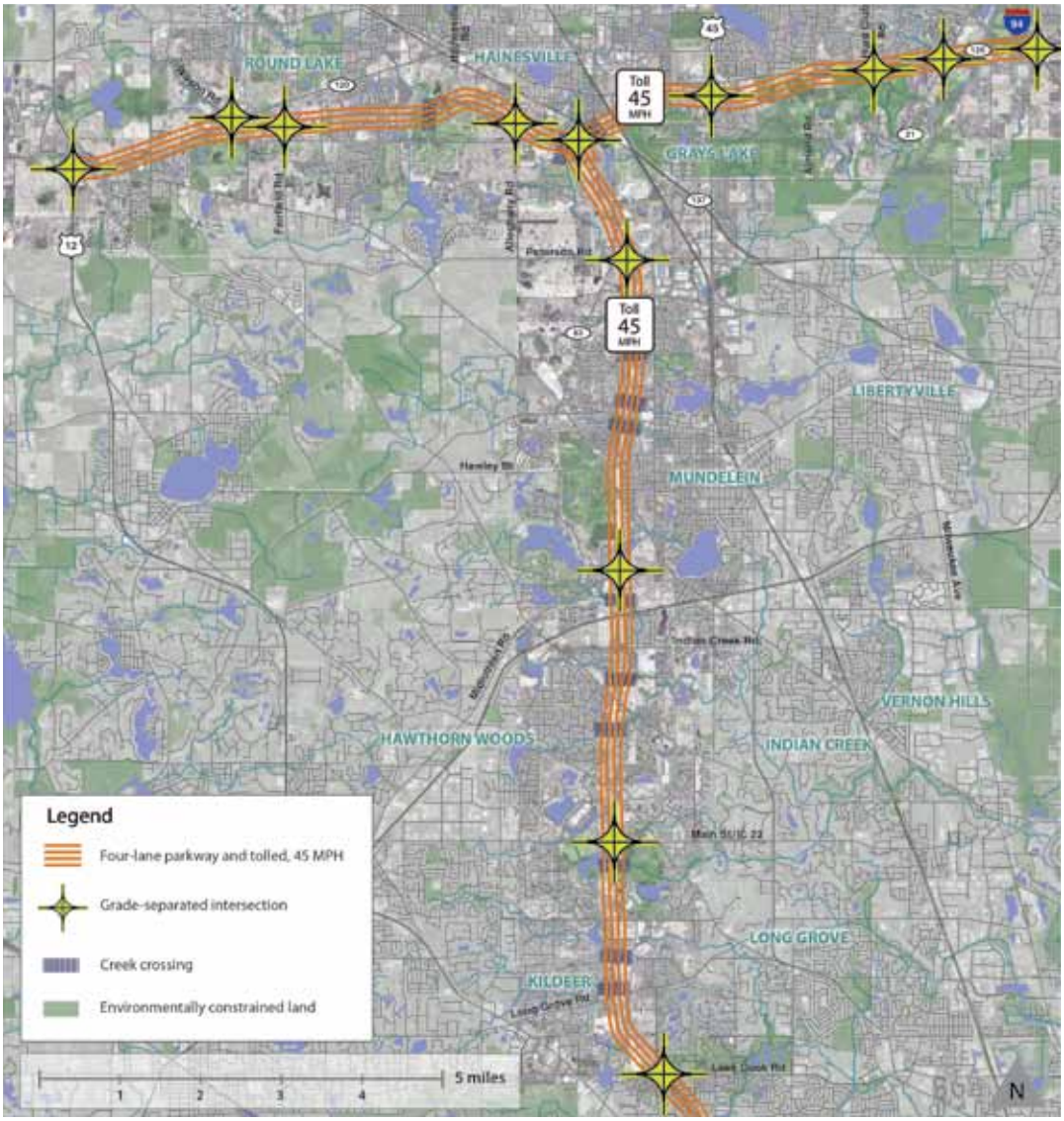


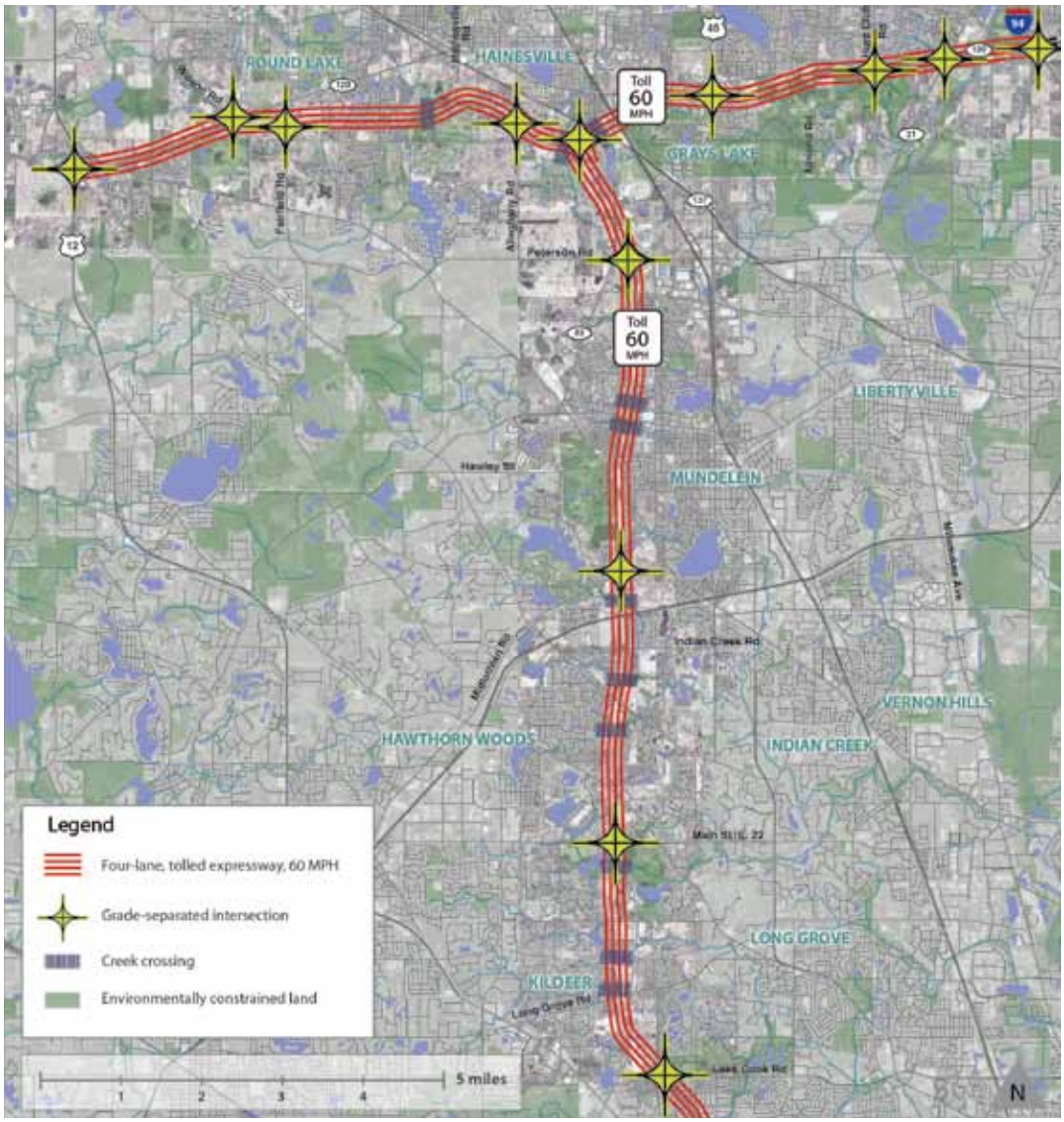
Figure 23: Scenario C Map



Scenario C Highlights:

- Moderate potential environmental impacts
- Moderate-to-high new paved roadway surface
- Travel speed of 45 MPH
- Moderate reduction in travel congestion
- Grade separated intersections along the length of Routes 53 and 120
- Tolls collected on Routes 53 and 120

Figure 24: Scenario D Map



Scenario D Highlights:

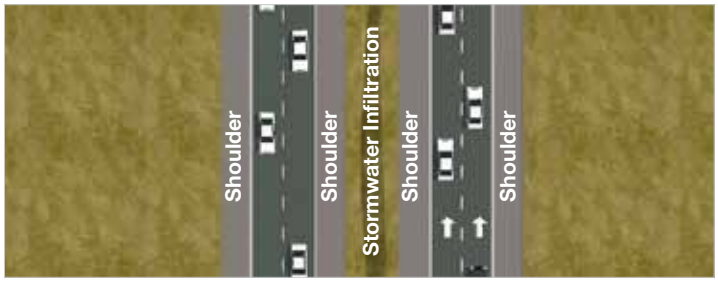
- High potential environmental impacts, similar to scenario E
- Moderate-to-high new paved roadway surfaces
- Travel speed of 60 MPH
- Moderate-to-high reduction in travel congestion
- Grade separated intersections along the length of Routes 53 and 120
- Tolls collected on Routes 53 and 120

Scenario D

In **Scenario D**, Route 53 and Route 120 are four lane tolled expressways. Travel speeds are 60 MPH along Routes 53 and 120. Grade-separated intersections allow for controlled access to adjacent roadways. The scenario footprint, potential environmental impacts, and new paved area are virtually equivalent to Scenario E.

Scenario D: Route 53 Cross-Section

Scenario D: Route 53 Plan View



Scenario E

In **Scenario E** both roads are tolled expressways. Route 53 is six lanes - four general travel lanes and two managed transit lanes - which can be used for bus rapid transit during peak times. Travel speeds are 60 MPH on both roads and all intersections are grade separated. This scenario is the most expensive to construct, it provides the greatest congestion relief, and is the only option with managed transit lanes. The scenario footprint, potential environmental impacts, and new paved area are virtually equivalent to Scenario D.

Scenario E: Route 53 Cross-Section

Scenario E: Route 53 Plan View

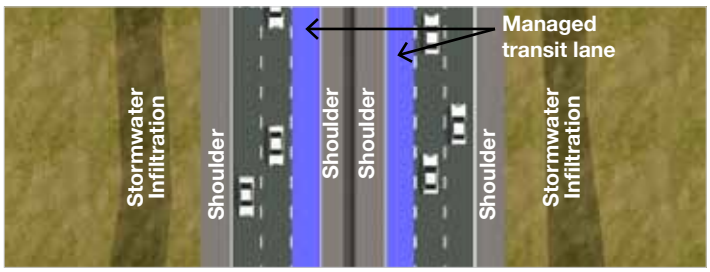
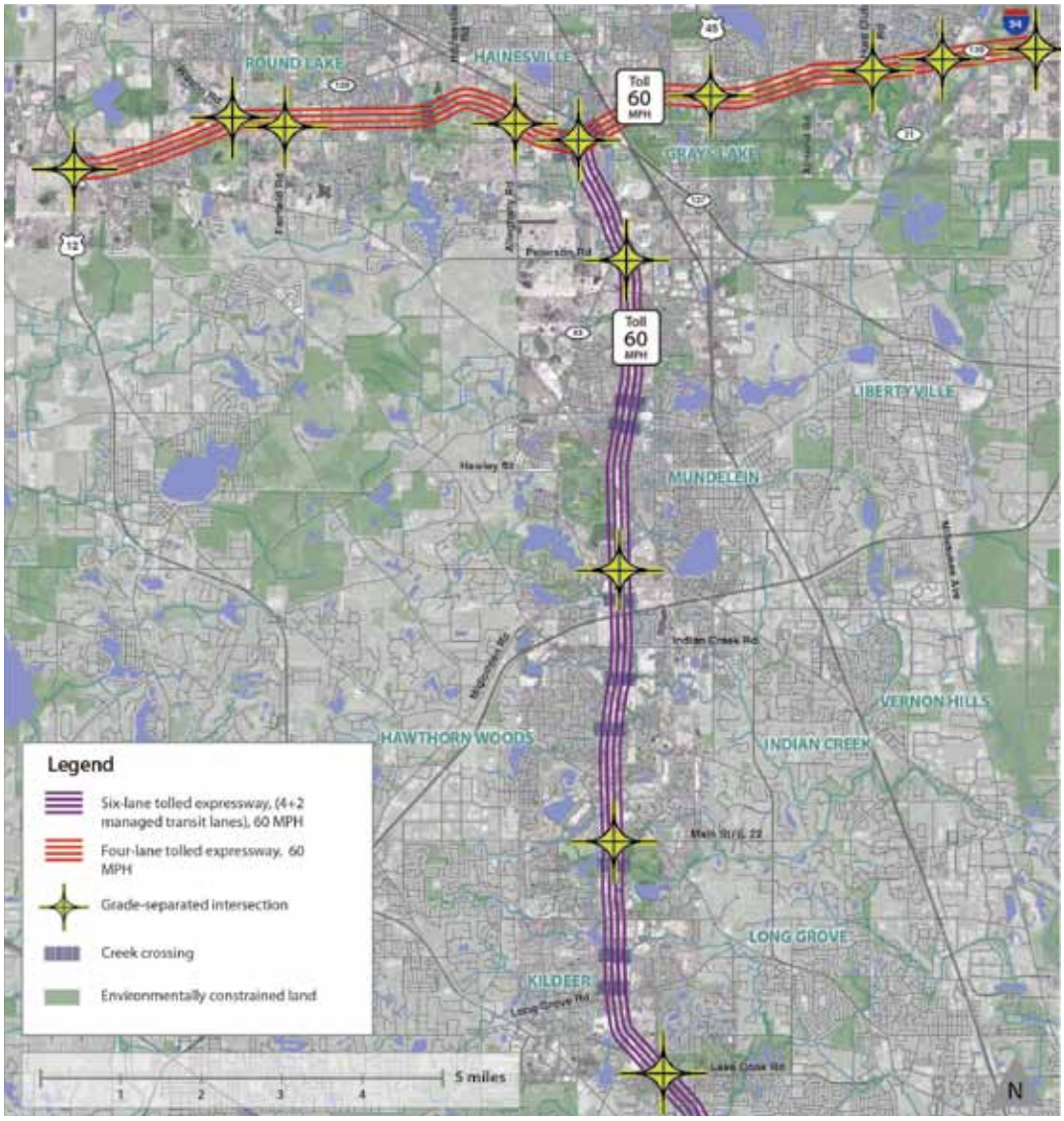


Figure 25: Scenario E Map



Scenario E Highlights:

- High potential environmental impacts, similar to scenario D
- Maximum new paved roadway surfaces
- Travel speed of 60 MPH
- Highest reduction in travel congestion
- Grade separated intersections along length of Routes 53 and 120
- Tolls collected on Routes 53 and 120

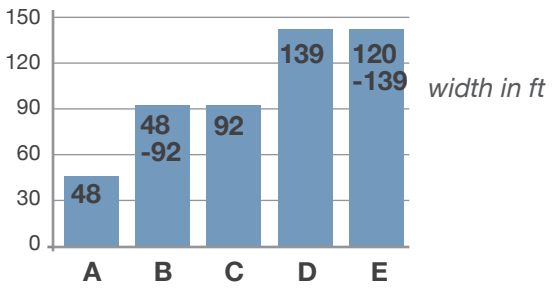
Comparing Scenario Performance

Indicator Evaluation

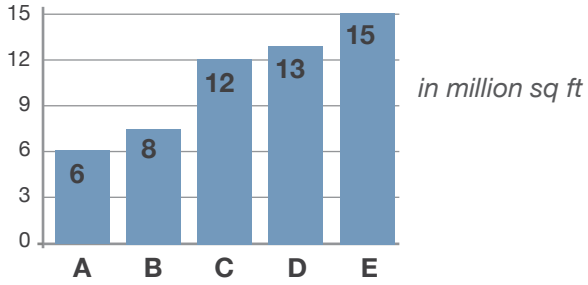
To evaluate the performance of the five initial test scenarios created for the facility, a set of indicators (or criteria) were used for comparison. The guiding principles, created earlier in the process, were integral to the scenario analysis and informed the selection of indicators and questions that were evaluated. Using indicators allows comparison in "like" terms and shows the relative benefits and costs of one solution compared to another.

How Much Development?

1. How large is the scenario footprint?

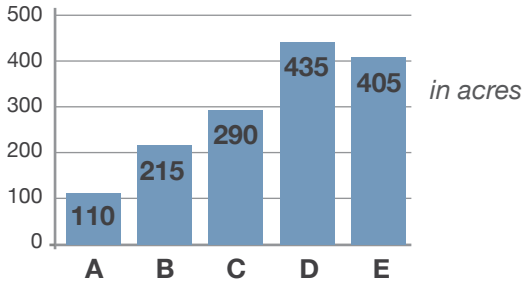


2. How much paved area is created, including travel lanes and shoulders?

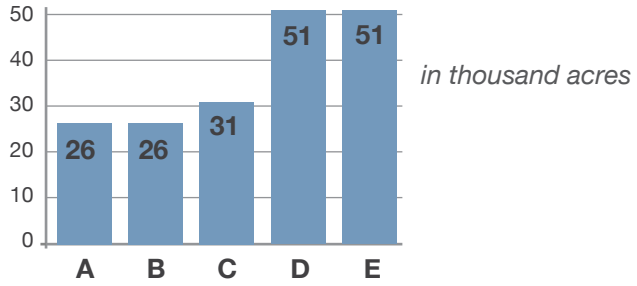


Impact on the Environment?

3. How much environmentally sensitive land potentially could be DIRECTLY impacted?



4. How much environmentally sensitive land potentially could be INDIRECTLY impacted?

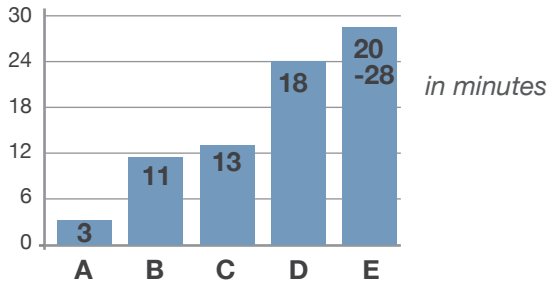


Notes:

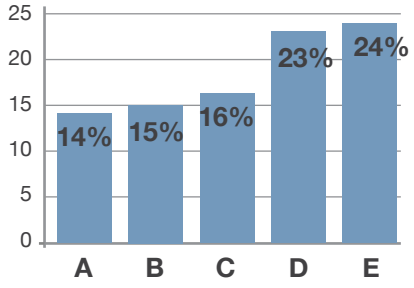
1. Approximate width of the scenario in feet (ranges are shown for scenarios that have different footprints for 53 and 120).
2. Approximate amount of pavement included in the scenario, including travel lanes and shoulders.
3. Projected acres of environmentally sensitive land that potentially could be impacted within the right of way.
4. Projected acres of environmentally sensitive land that potentially could be impacted within two miles of the right of way.

Reduced Congestion?

5. How much time could be saved on a typical trip from Waukegan to Schaumburg?

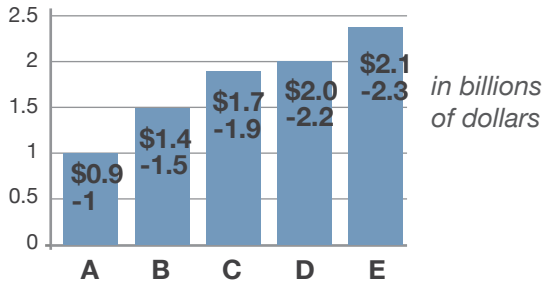


6. What percentage of congestion reduction compared to the 2040 no-build option?



Cost and Revenue?

7. How much will new construction cost?



8. What is the potential toll revenue?

Notes:

5. Time saved on a typical trip from Waukegan to Schaumburg. Current travel time (2010) is approximately 74 min. Future travel time (2040) under the no-build option is approximately 99 min.
6. Percent drop in congested vehicle hours traveled in Lake County, compared to the 2040 no-build option.
7. Estimated construction cost in 2020 dollars.
8. Estimated gross total annual revenue in 2025 (construction dollars are invested (2020) before revenue is realized (2025)).

Design Considerations for the Environment, Community and Transportation

Why Is Design So Important?

In a growing region like Lake County, a new road can provide increased access to new markets and alleviate congestion. The potential benefits however, will be realized by communities' coordinated planning efforts and the application of the best practices in roadway design and community integration.

New roads can have many implications – not simply transportation solutions or issues, they affect communities, local streets, and the environment around them. In addition, a new roadway presents an opportunity to influence economic development in central Lake County. There are different ways that the road design can help or hinder to attract the types of growth that local communities want. Residential growth and economic development occur in response to improved access that the road brings, particularly around interchanges. However, new roads can also stimulate rapid and unplanned development, cause increased traffic on existing roads that are not prepared, and sensitive ecological areas can be irreparably damaged. A combination of careful roadway design and coordinated planning for desired land use around new interchanges can reduce unintended consequences for nearby neighborhoods and the environment.

Environmental Considerations

Roads have a strong impact on the land, not only directly adjacent to a new roadway, but beyond the construction zone.

Types of Environmental Impacts

Direct – within the right of way

- Wetlands filled
- Upland forest habitat lost
- Agricultural land and grasslands lost

Indirect – beyond the construction zone, salt and hydrology impacts

- Wetlands impaired by runoff, salt, and watershed modifications
- Tree mortality and soil quality changes from wind-borne de-icing salt
- Erosion of downstream channels and streams

Intrinsic – impacts to environmental services performed by a healthy, natural landscape, provided to us at no cost by nature

- Water cleansing
- Air purification
- Pollination of crops

Measured Potential Impacts of a New Roadway

- Wetland impacts
- Water resources impacts
- Upland habitat impacts
- Wildlife species and biodiversity impacts
- Threatened and endangered species impacts
- Conservation land impacts
- Noise and light impacts
- Contaminant impacts
- Agricultural land impacts

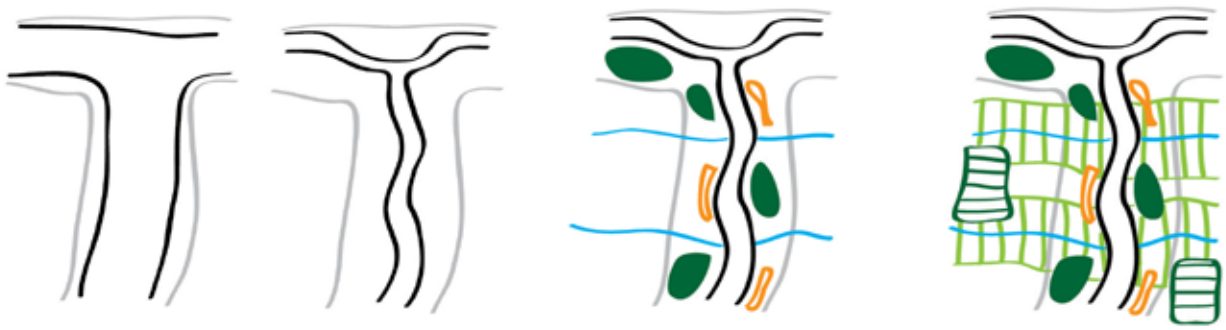
Reducing Environmental Impacts

Several road design concepts can reduce the potential environmental impacts of a new road.

- **Steady traffic flow:** Stop and go traffic contributes disproportionately higher emissions whenever drivers are quickly accelerating or braking. Steady-flowing traffic will have reduced potential impacts.
- **Lower speed:** High speeds create more noise, spread contaminants farther (including salt and combustion byproducts), and require more paved area for the safety of drivers.
- **Smaller road:** Reducing the length and width of the new roadway will reduce the potential impacts to wetlands, nature preserves, and agricultural lands.
- **Stormwater treatment:** Capturing and treating stormwater runoff along the roadway ensures better water quality by the time the water reaches nearby wetlands, lakes and streams. This can be done by directing stormwater runoff to the median and roadside swales for capture, holding and pre-treatment, then releasing the water to nearby grasslands or wetlands for polishing.

New road construction should follow a thoughtful process from beginning to implementation, one which seeks to protect and incorporate natural features using best practices to "avoid, minimize, mitigate and compensate."

ROAD SCENARIO | **ROAD DESIGN** | **MITIGATE AND COMPENSATE**



Worst Case: 300' Impacts | *Best Case: Min. Impacts* | *Avoid Forests and Wetlalnds, Minimize Noise with Barriers* | *Create Stream Buffers, Connect Stewardship Lands*

Community Considerations

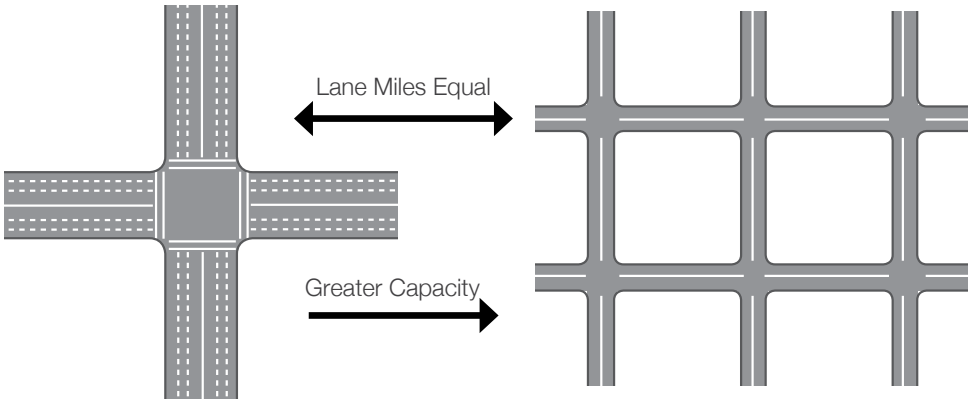
Roads Have a Strong Impact on Growth and Development

- Transportation and land use affect each other.
- Integrated land use and transportation planning can reduce some of the potential negative effects of increased highway capacity.
- Development character determines which transportation options are realistic.

Roads Bring Change

New roads can have a wide range of effects on the surrounding neighborhoods and commercial areas.

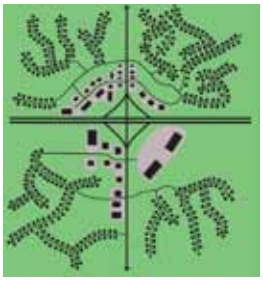
- A new road can **link people to the larger area** – people may relocate near the new highway because they can use the highway to get to work and to places to shop.
- A new road can **spur growth and development** – new businesses may open near the highway because they can access new markets.
- A new road can **refocus areas of community growth** – existing off-highway businesses may experience new challenges competing for customers.
- A new road can **introduce new traffic challenges** – traffic may concentrate around highway intersections. Without additional connections, local trips increase congestion on the highway.
- A new road can **interrupt access** – the highway may act as a barrier. Like railroad tracks or a river, it can decrease access that might have existed previously.



A connected street network reduces traffic congestion by providing multiple routes to get places. Conversely, a disconnected street network increases traffic congestion by funneling traffic onto only a few access points and streets.

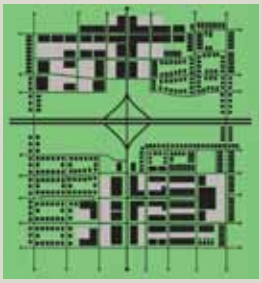
Urban Center Land Use Patterns

Traditional



- Commercial uses radiate from the interchange
- Residential uses are separated and have few access points

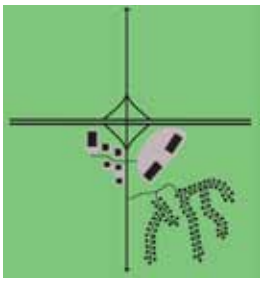
Best Practices



- Street connectivity
- Residential neighborhoods connected to commercial centers
- Mix of housing types
- Multiple road options for crossing the highway
- Parking designed behind or next to buildings in shared lots, in a park once configuration
- Buildings face street
- Space provided for future transit

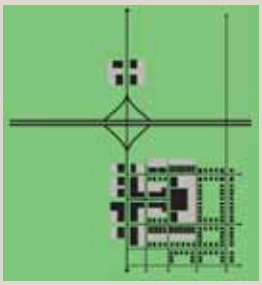
Typical Town Center Land Use Patterns

Traditional



- Oriented to the interchange
- Residential is separated via one access point connecting to the main arterial

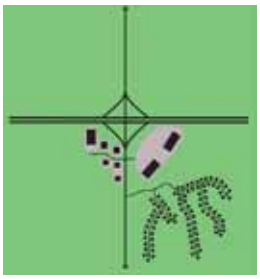
Best Practices



- Street connectivity
- Identifiable center to the community
- Residential access to commercial uses
- Mix of housing types
- Multiple road options for crossing the highway
- Buildings face street
- Space provided for future transit

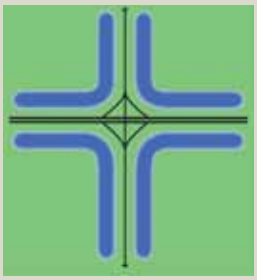
Sensitive Natural Area Land Use Patterns

Traditional



- Development occurs without sensitivity to natural areas
- Growth may take the form of strip development along the access roads and slowly encroach on natural areas

Best Practices



- Sensitive natural areas are protected and remain undeveloped
- Other adjacent, less sensitive areas may accommodate additional development as needed

Transportation Considerations

An Evolving Approach to Transportation: from "Moving Cars" to "Moving People"

Transportation planning is evolving. Traditional principles of transportation planning aim to move cars, and when roads become choked with traffic, the traditional approach is either more pavement or more efficiency. But a range of alternate "lateral" approaches to improving the transportation system are emerging.

First is the consideration of moving people instead of moving cars. This shift in perspective opens up the wide range of multi-modal solutions that can get people to where they need to go. Second is to improve the quality of travel, to see a road not just as a connection but as a place in itself, and one that exerts great influence over nearby places (neighborhoods, vacant land, centers of employment and activity). Third, we can view traffic and congestion in a holistic way as a land use issue. The goal might change to moving fewer people fewer miles – locating housing nearer to employment centers, retail and services, grocery stores, and recreational opportunities to reduce the need for driving long distances. And finally, transportation planning is evolving to see its mission not to eliminate traffic congestion, but to manage it. Tollways are one example of the management approach. By charging a premium for greater mobility, toll roads offer drivers the option to choose whether to pay for access to roads that are typically less congested or more direct.

Shifting Priorities: The Access and Mobility Spectrum

Traditional transportation planning adheres to a belief that improving the flow of traffic, known as a road's level of service, is the central goal of the transportation system. This thinking is being revised with holistic planning that accounts for behavioral change.

The level of service does not tell the complete story of a roadway's capacity. Actual capacity increases beyond predicted capacity when people's behaviors change. And people change their behavior when they have viable options. Behavior change is the missing ingredient that is not traditionally included in transportation planning or analysis. Compared to the level-of-service mentality, where roadways "fail" when they reach the point of congestion, many other factors can greatly expand the system's capacity to connect people to where they need to go.

Conventional Approach

An approach based on automobile capacity.

MOVE CARS

More Lanes
More Roads
More Cars
System Management

Quality Growth Approach

An approach based on human and environmental quality standards and changing patterns of use.

IMPROVE QUALITY OF TRAVEL

Streets as Centerpieces
Business Friendly
Traffic Calming & Ecological Restoration
Access, Not Mobility
Driver-Eye View

MOVE PEOPLE, NOT CARS

Walking
Transit
Biking

MOVE LESS PEOPLE, FEWER MILES

Land Use
Road Network
Congestion Pricing
Telecommuting
Sizing of Destinations
In-Town Living

MANAGE, NOT "SOLVE"

Lane Limits
Change Standards

The Council Design Workshop

At the Workshop

After the scenarios were created, a design workshop was conducted in February for the Council members in order to discuss potential solutions and alternatives for the Route 53/120 facility and prioritize the guiding principles. At the workshop, each of the five scenarios and their indicator results were presented, along with the design considerations. Council members were asked to grapple with the issues and trade-offs related to the options available, and were encouraged to think creatively and combine elements to create "hybrid" scenarios. In the end, three hybrid scenarios were created and instant polling revealed the Council's top three guiding principles: **innovative design solutions**, **minimize environmental impacts**, and **promote environmental enhancements and sustainable practices**.

When asked which scenario best promotes the top three principles (*innovative design solutions, minimize environmental impacts, and promote environmental enhancements and sustainable practices*), Scenario B was the most common choice.

Hybrid Scenario #1 Outcomes:

- 45 MPH, 4 lanes
- Limited Route 120 bypass
- Environmental congestion pricing
- Innovative model that conveys the character of Lake County
- Stormwater infiltration
- Consider no interchange at Long Grove due to nearby wetlands

Hybrid Scenario #2 Outcomes:

- "Lake County Greenway"
- 45 MPH, 4 or 6 lanes
- Consider economic development at interchanges
- Underground at Route 53/120 intersection
- Possible transit lane

Hybrid Scenario #3 Outcomes:

- 4 lanes
- 55 MPH at the south end, reduced to 45 MPH north of Midlothian Road
- Incorporate "wiggles"to avoid most priority sensitive areas
- Route 120 tolled for new areas only
- Aim for least environmental impact
- Include pedestrian crossings
- Noise abatement

Workshop Outcomes

A Consensus (Conceptual) Scenario

From the three hybrid scenarios created by the Council members, a consensus (conceptual) scenario emerged. A consensus scenario is not a detailed design for the facility, but will assist Council members in crafting a common vision for the future of the corridor. The consensus scenario includes common themes from the three hybrid scenarios which favored a roadway with a smaller footprint, innovative environmental mitigation and enhancements, and slower speeds.

- All three workshop scenarios opted for lower speed and smaller footprint facilities than the most extensive test scenario (scenario E).
- The Long Grove wetlands are of particular interest and concern to Council members.
- An innovative roadway design could enhance Lake County's identity as a leader in conservation. There seemed to be strong cohesion on this point during the presentation and discussion of workshop scenario results.
- Lane management and congestion pricing (in a variety of possible forms) were very popular options. One workshop group proposed "environmental congestion pricing."
- Any potential roadway must seriously consider and address the environmental impacts, both direct and indirect.

Appendix

Suggested content for Appendix

- Tailored Design Solutions for Land and Community Sensitive Areas
- Noise Standard Table
- February 9th Environmental Enhancements Matrix
- CMAP Future Land Use Change Memo
- IL-53/120 Analysis Following the March 12th Mobility Finance Meeting
- CMAP Value Capture Memo
- CMAP Sales Tax Revenue Estimates Memo
- Work Plan for Creating a Corridor Plan
- Grayslake Vision Document
- Central Lake Thruway Unified Vision