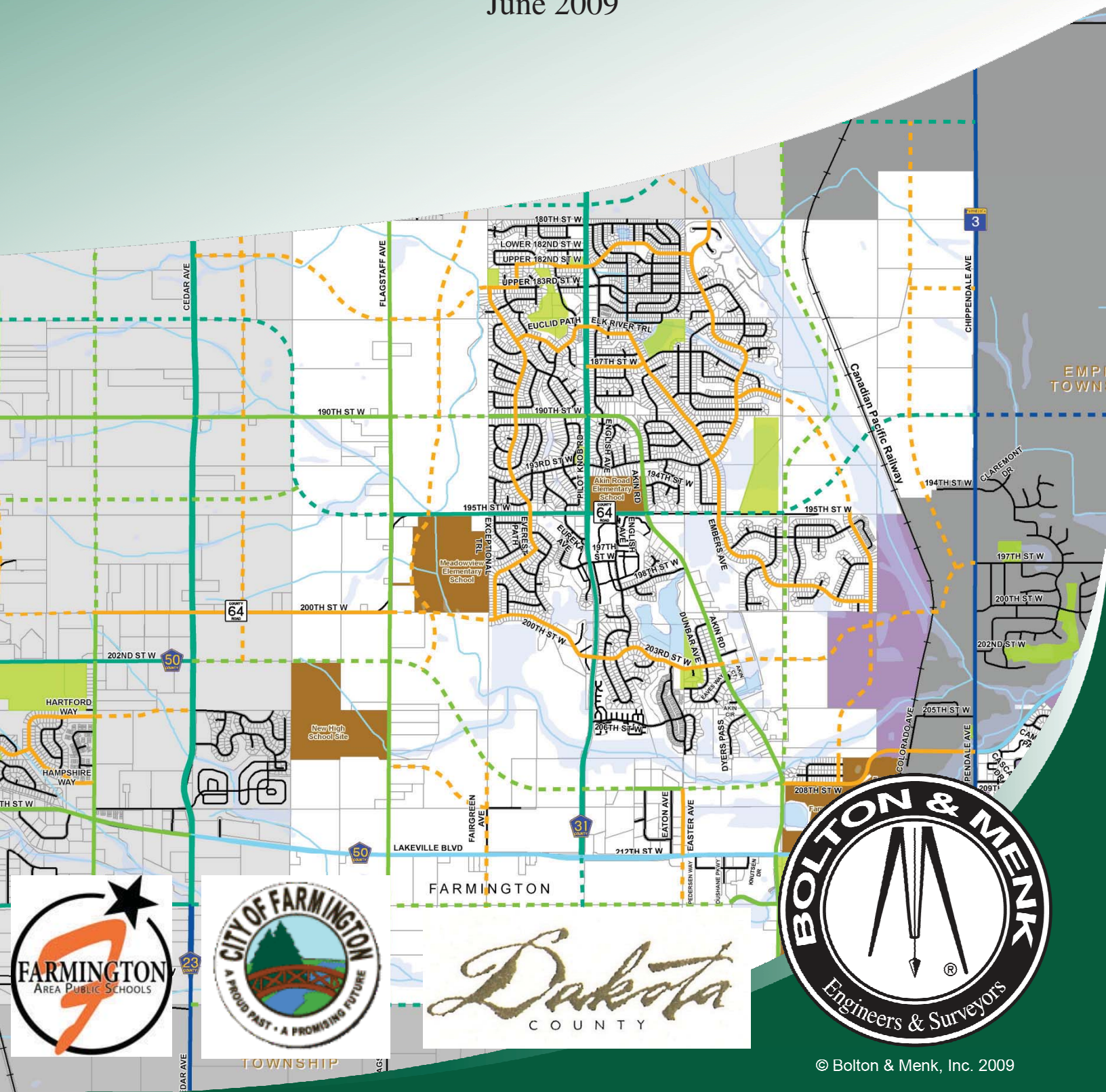
Farmington Area Transportation Study

June 2009



ACKNOWLEDGEMENTS

PROJECT ADVISORY COMMITTEE MEMBERS

Representative	Agency	Title
John Sass	Dakota County	Project Manager
Brian Sorenson, P.E.	Dakota County	Program Engineer
Kristi Sebastian, P.E., P.T.O.E.	Dakota County	Traffic Engineer
Suzanne Hanrahan, P.E.	Dakota County	Assistant Traffic Engineer
Kevin Schorzman, P.E.	City of Farmington	City Engineer
Lee Smick, AICP	City of Farmington	City Planner
Tony Wippler	City of Farmington	Assistant City Planner
Brad Meeks	Farmington School District	Superintendent
Jeff Priess	Farmington School District	Finance Director
Rosalyn Pautzke	Farmington School District	Director of Administrative Services
Bryan Nemeth, P.E., P.T.O.E.	Bolton & Menk, Inc.	Consultant Project Manager
Gina Mitchell, AICP	Bolton & Menk, Inc.	Transportation Planner

EXECUTIVE SUMMARY

Dakota County and the City of Farmington have studied the roadway system needs associated with future residential and commercial growth anticipated in the Farmington area and the opening of the new Farmington High School for the 2009-2010 school year. This study focused on identifying and understanding

- Existing traffic conditions and operations along County State Aid Highway (CSAH) 31 (Pilot Knob Road), CSAH 50 (212th Street), County Road (CR) 64 (195th Street), and Flagstaff Avenue
- Anticipated traffic conditions when the new Farmington High School opens in the fall of 2009 and potential improvement strategies
- Arterial and collector roadway corridor network required to accommodate long-term needs
- Forecasted 2030 traffic volumes
- Safe and efficient access vision and implementation plan to accommodate forecasted 2030 traffic conditions along CSAH 31 (Pilot Knob Road)

Following are the findings of the Farmington Area Transportation Study.

Existing Conditions. During the peak travel periods of the day, the study corridors operate under capacity. Overall, traffic is able to move in a safe and efficient manner with existing traffic control and lane geometry. Most intersections have crash rates lower than the state average. The intersection of CR 64 and CSAH 31 is just over the statewide average crash rate which may be of concern as traffic increases.

Long Term Roadway Network Vision. A roadway network vision accommodating the long-term growth needs in the Farmington Area has been developed. This vision represents the future functional classification of existing roadways and identifies the future corridors necessary to accommodate existing and future growth in the Farmington area and region.

2009-2010 School Opening. Several changes are occurring in northwest Farmington that will alter traffic patterns during the 2009-2010 school year. These changes include the extension of CR 64 to Trunk Highway (TH) 3, the paving of Flagstaff Avenue and 200th Street, opening of the new Farmington High School and shifts in school building use, and some residential growth. This study evaluated these changes to anticipate the traffic implications on the study corridors and at intersections along the corridors. Mitigation options were agreed to by Dakota County, City of Farmington Council, and Farmington School Board for the short, mid, long, and extended term. The short-term (within next year) improvements are based on the assessment of existing traffic and conditions after the High School opens as identified below.

CR 64 (195th Street) Corridor

Include preliminary design efforts in the County and City Capital Improvement Programs for 2010.

CR 64 (195th Street) at Akin Road

Maintain existing multi-way stop control. Monitor and determine the timing and need for left and right turn lane improvements.

CR 64 (195th Street) at CSAH 31 (Pilot Knob Road)

Maintain existing multi-way stop control.

CR 64 (195th Street) at Flagstaff Avenue

Maintain current two-way stop control and install multi-way stop control in August 2009 before fall sports begin and the new high school opens. City to install intersection lighting.

CSAH 50 (212th Street) at Flagstaff Avenue

Maintain existing two-way stop control. City to install intersection lighting. When the high school is adjourned for the day, non-bus traffic leaving the campus will be sent north on Flagstaff Avenue.

All four of the intersections above may function acceptably for a few years under the existing intersection configuration and traffic control even though there may be unacceptable delay for one or more movements in 2009/2010.

2030 Forecasted Traffic Volumes. Traffic forecasts were developed for the year 2030 based on the City's 2030 Draft Land Use Plan. Also considered in the 2030 forecasts were the 2009-2010 pending improvements and long-term corridor vision established in this study. While most of the roadway corridors do not need capacity improvements to maintain acceptable traffic operations, a few sections of the roadway may require improvements by 2030.

2030 Pilot Knob Road Corridor Vision. As a minor arterial roadway, Pilot Knob Road's role in the network is to provide mobility and limited access. Currently, there are several accesses along the corridor. The more access that is allowed to a roadway, the less the roadway can provide mobility. More access along arterial roadways also results in decreased safety with higher crash incidents.

The study establishes a vision for the Pilot Knob corridor that can be achieved over time. This vision considers preserving the mobility of the corridor, while not compromising safety. It also prioritizes providing adequate accessibility to adjacent neighborhoods, commercial properties, and public land uses. In addition to assessing the current access configuration, four corridor access alternatives were developed north of CR 64, and three access alternatives south of CR 64.

The preferred corridor alternatives approved by the Project Advisory Committee and elected officials from the City of Farmington, Dakota County, and Farmington School District were

North B and South X. These alternatives were selected based on an evaluation of several key considerations including delay, travel time and speed, access delay onto Pilot Knob Road, safety, system planning, and cost. The preferred corridor alternatives would place primary access intersections at the future 179th Street, Upper 182nd Street, 187th Street, 190th Street, CR 64 (195th Street), 197th Street, 200th/203rd Street, the future 208th Street, and CSAH 50 (212th Street).

Implementation. It is envisioned that the Pilot Knob Road corridor and the other intersections analyzed will remain as they are today for a number of years. As the volume of traffic increases, there may be an opportunity for a change in traffic control. The Minnesota Manual on Uniform Traffic Control Devices (MMUTCD) provides the requirement for justifying a change in traffic control. Corridor and intersection changes are anticipated to be reviewed, determined, and programmed as the volume of traffic through the intersections increase, as correctable crashes increase, and as funding dictates.

Dakota County has a process to evaluate the needs and determine when a traffic control change is an appropriate program project. For County roadways, Dakota County Transportation Department staff will install or permit a change in traffic control based on a County engineering study that indicates that a change is appropriate. The installation of signals is based on priority in a signal ranking analysis and availability of funds. The signal ranking analysis considers safety, delay, access spacing, traffic volumes and other factors. It is noted that a change in traffic control may not necessarily improve the safety of an intersection (according to the State of Minnesota Traffic Safety Fundamentals Handbook). Further explanation of this is described in Technical Memorandum B. Installation of a traffic signal or all-way stop on a county roadway requires County Board approval.

Overall, this study evaluated the short-term traffic needs of the intersections impacted by the new Farmington High School, developed a long-term roadway vision for the northwest Farmington area, and established a long-term vision for CSAH 31 (Pilot Knob Road) through Farmington. This plan allows for appropriate short-term improvements and a long-term vision to serve the traveling public in a safe and efficient manner in the northwest Farmington area now and into the future.

TABLE OF CONTENTS

I. STUDY PURPOSE 1
II. AGENCY COORDINATION AND PUBLIC INVOLVEMENT PROCESS 2
III. EXISTING CONDITIONS 4
IV. LONG TERM ROADWAY NETWORK VISION 5
V. 2009-2010 SCHOOL YEAR TRAFFIC IMPACT ANALYSIS 6
A. CR 64 (195TH STREET) CORRIDOR 6
B. CR 64 (195TH STREET) AT AKIN ROAD 7
C. CR 64 (195TH STREET) AT CSAH 31 (PILOT KNOB ROAD) 7
D. CR 64 (195TH STREET) AT FLAGSTAFF AVENUE 8
E. CSAH 50 (212TH STREET) AT FLAGSTAFF AVENUE 8
F. CAPACITY SENSITIVITY ANALYSIS 8
G. IMPLEMENTATION 10
VI. 2030 FORECASTED TRAFFIC VOLUMES 11
VII. 2030 CSAH 31 (PILOT KNOB ROAD) CORRIDOR VISION 12
A. PREFERRED CORRIDOR ALTERNATIVES 14
B. IMPLEMENTATION 15

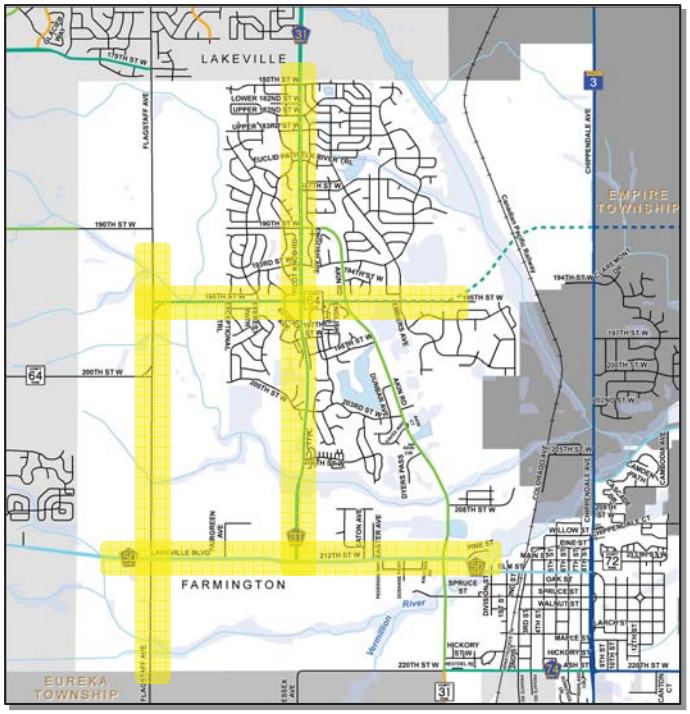
TECHNICAL MEMORANDUMS

Part A – Existing Conditions
Part B – 2009-2010 School Year Traffic Impact Analysis
Part C – Dakota County CSAH 31 (Pilot Knob Road) Corridor Analysis

I. STUDY PURPOSE

Dakota County and the City of Farmington have studied the roadway system needs associated with future residential and commercial growth anticipated in the Farmington area and the opening of the new Farmington High School for the 2009-2010 school year. This study focused on identifying and understanding

- Existing traffic conditions and operations along County State Aid Highway (CSAH) 31 (Pilot Knob Road), CSAH 50 (212th Street), County Road (CR) 64 (195th Street), and Flagstaff Avenue
- Anticipated traffic conditions when the new Farmington High School opens in the fall of 2009 and potential improvement strategies
- Arterial and collector roadway corridor network required to accommodate long-term needs
- Forecasted 2030 traffic volumes
- Safe and efficient access vision and implementation plan to accommodate forecasted 2030 traffic conditions along CSAH 31 (Pilot Knob Road)



Study Corridors

- CSAH 31 (Pilot Knob Road)
- CSAH 50 (212th Street)
- CR 64 (195th Street)
- Flagstaff Avenue

II. AGENCY COORDINATION AND PUBLIC INVOLVEMENT PROCESS

Coordination and public involvement were identified as key components to the success of this study. These efforts provided staff and elected officials from the City of Farmington, Dakota County, and Farmington School District, as well as the public with continuing opportunities to be involved in the study, understand findings, and develop implementation strategies.

A **Project Advisory Committee** (PAC) was organized consisting of representatives from the City of Farmington, Dakota County, and Farmington School District. Members of the PAC were responsible for representing their agency's interests and reporting back information to their agency. Six PAC Meetings were held over the course of the study. The responsibilities of the PAC were to

- Establish study goal, objectives, and evaluation criteria
- Identify, review, and evaluate alternatives
- Review and discuss public input
- Identify preferred alternatives
- Develop consensus on implementation strategies and responsibilities

Elected Official Meetings were held to provide a forum for officials from the City, County, and School District to review the study progress and issues, build understanding for the factors influencing recommendations, listen to and consider comments and concerns, and reach consensus on preferred alternatives and implementation strategies. Meetings were held on November 10, 2008, December 10, 2008, and April 8, 2009.

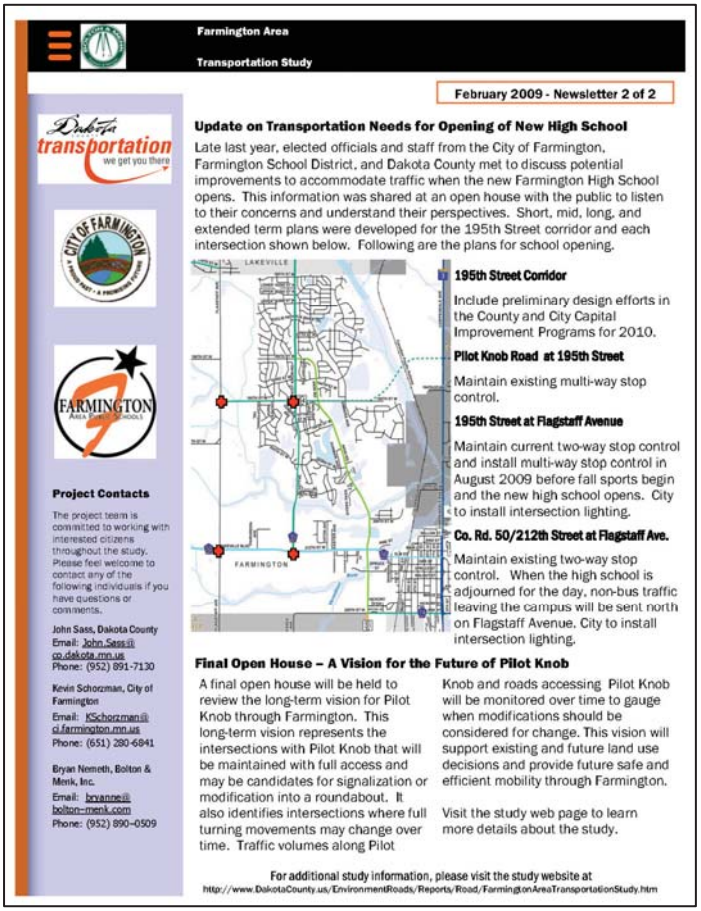
Open House Meetings were held to provide a forum for the public to review study findings and share experience and comment on the alternatives and findings. Notice for the meetings was provided to residents and businesses by means of press releases, the Dakota County website, and direct mailings of over 3,600 newsletters. Newsletter #2 is shown on the next page. The first meeting was held on November 19, 2008. The objective of the meeting was to:

- explain the study objectives
- present existing and 2009-2010 traffic conditions and alternatives
- review the draft long-term roadway network vision
- review draft concepts for access along Pilot Knob Road
- receive public input on the study's progress.

A second meeting was held on March 18, 2009. The purpose of the second meeting was to present and receive public input on the long-term vision for Pilot Knob Road through Farmington. This included sharing the recommended alternative for Pilot Knob including plans for each intersection along the corridor. Exhibits showed the intersections to be maintained as full access that may be candidates for signalization or modification into a roundabout and intersections where full turning movements may change over time.

County Website. The Dakota County website was utilized as a means to advertise public involvement opportunities and display information presented at open house meetings. This provided the opportunity for the public to keep abreast of the study's progress.

Newsletter #2



Farmington Area
Transportation Study

February 2009 - Newsletter 2 of 2

Update on Transportation Needs for Opening of New High School

Late last year, elected officials and staff from the City of Farmington, Farmington School District, and Dakota County met to discuss potential improvements to accommodate traffic when the new Farmington High School opens. This information was shared at an open house with the public to listen to their concerns and understand their perspectives. Short, mid, long, and extended term plans were developed for the 195th Street corridor and each intersection shown below. Following are the plans for school opening.

195th Street Corridor

Include preliminary design efforts in the County and City Capital Improvement Programs for 2010.

Pilot Knob Road at 195th Street

Maintain existing multi-way stop control.

195th Street at Flagstaff Avenue

Maintain current two-way stop control and install multi-way stop control in August 2009 before fall sports begin and the new high school opens. City to install intersection lighting.

Co. Rd. 50/212th Street at Flagstaff Ave.

Maintain existing two-way stop control. When the high school is adjourned for the day, non-bus traffic leaving the campus will be sent north on Flagstaff Avenue. City to install intersection lighting.

Final Open House – A Vision for the Future of Pilot Knob

A final open house will be held to review the long-term vision for Pilot Knob through Farmington. This long-term vision represents the intersections with Pilot Knob that will be maintained with full access and may be candidates for signalization or modification into a roundabout. It also identifies intersections where full turning movements may change over time. Traffic volumes along Pilot Knob and roads accessing Pilot Knob will be monitored over time to gauge when modifications should be considered for change. This vision will support existing and future land use decisions and provide future safe and efficient mobility through Farmington.

Visit the study web page to learn more details about the study.

For additional study information, please visit the study website at
http://www.DakotaCounty.us/EnvironmentRoads/Reports/Road/FarmingtonAreaTransportationStudy.htm

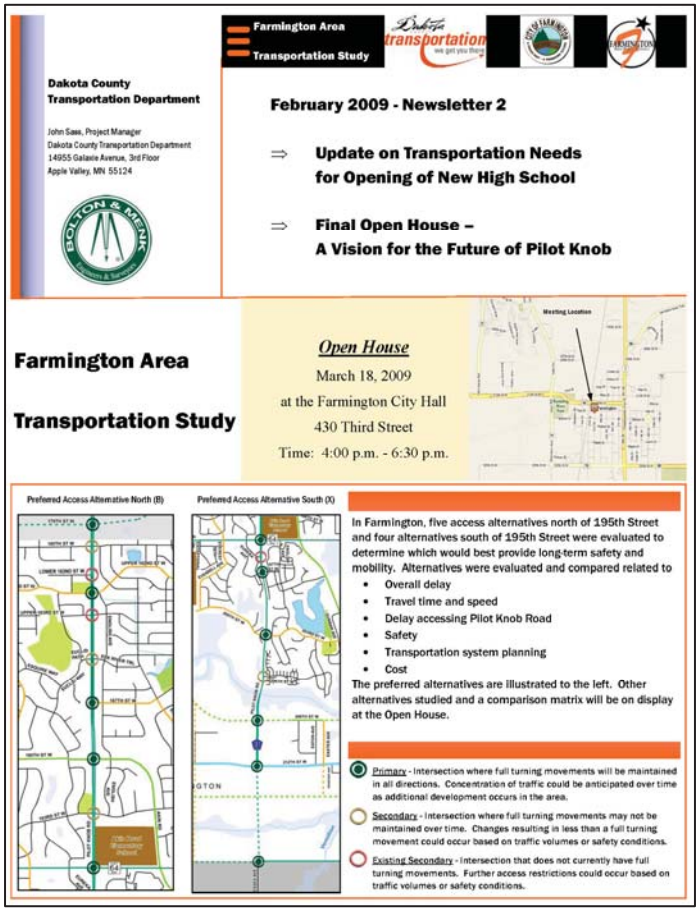
Project Contacts

The project team is committed to working with interested citizens throughout the study. Please feel welcome to contact any of the following individuals if you have questions or comments.

John Sass, Dakota County
Email: John.Sass@co.dakota.mn.us
Phone: (952) 891-7130

Kevin Schorzman, City of Farmington
Email: KSchorzman@ci.farmington.mn.us
Phone: (651) 280-6841

Bryan Nemeth, Bolton & Menk, Inc.
Email: bryanne@bolton-menk.com
Phone: (952) 890-0509



Farmington Area
Transportation Study

Dakota County
Transportation Department

John Sass, Project Manager
Dakota County Transportation Department
14955 Galaxie Avenue, 3rd Floor
Apple Valley, MN 55124

February 2009 - Newsletter 2

⇒ **Update on Transportation Needs for Opening of New High School**

⇒ **Final Open House – A Vision for the Future of Pilot Knob**

Farmington Area

Transportation Study

Open House

March 18, 2009
at the Farmington City Hall
430 Third Street
Time: 4:00 p.m. - 6:30 p.m.

Meeting Location

Preferred Access Alternative North (B)

Preferred Access Alternative South (X)

In Farmington, five access alternatives north of 195th Street and four alternatives south of 195th Street were evaluated to determine which would best provide long-term safety and mobility. Alternatives were evaluated and compared related to

- Overall delay
- Travel time and speed
- Delay accessing Pilot Knob Road
- Safety
- Transportation system planning
- Cost

The preferred alternatives are illustrated to the left. Other alternatives studied and a comparison matrix will be on display at the Open House.

Primary - Intersection where full turning movements will be maintained in all directions. Concentration of traffic could be anticipated over time as additional development occurs in the area.

Secondary - Intersection where full turning movements may not be maintained over time. Changes resulting in less than a full turning movement could occur based on traffic volumes or safety conditions.

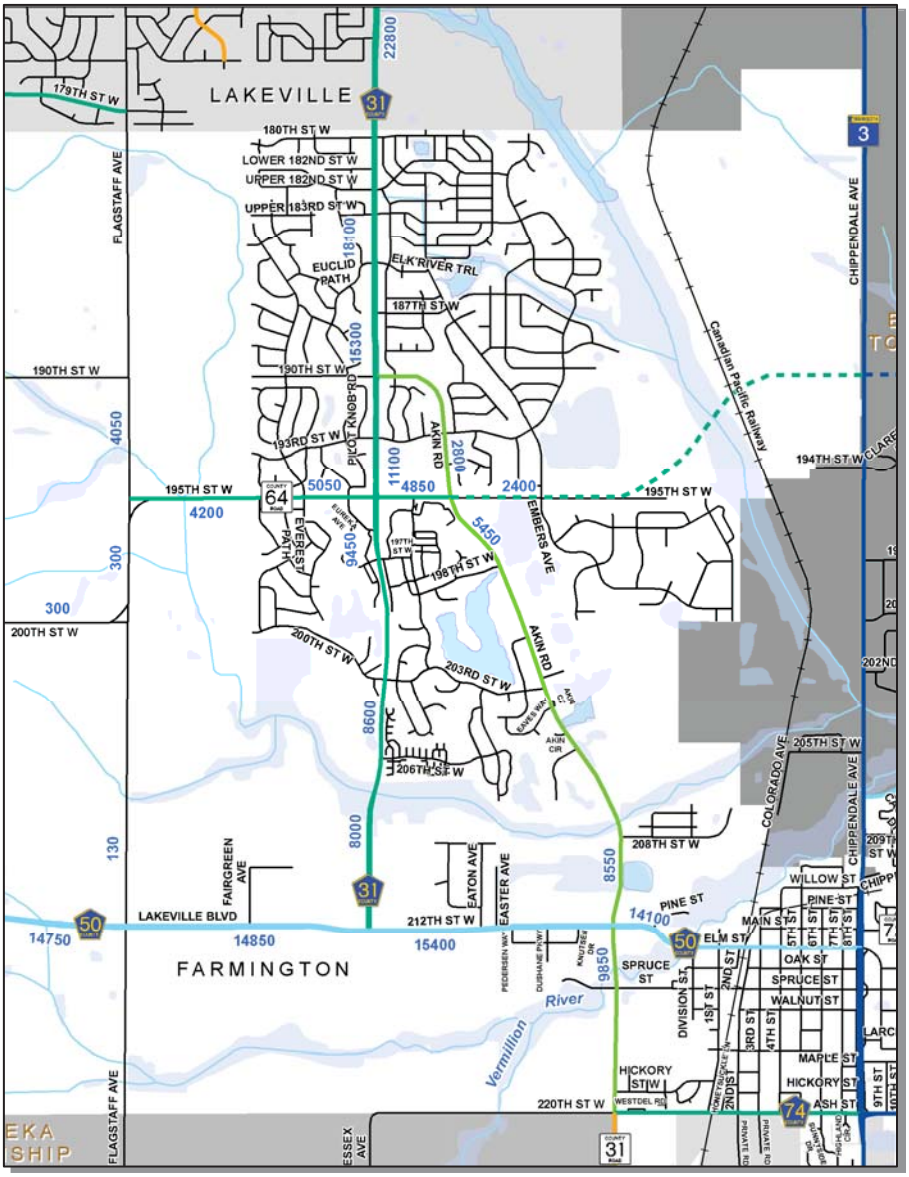
Existing Secondary - Intersection that does not currently have full turning movements. Further access restrictions could occur based on traffic volumes or safety conditions.

III. EXISTING CONDITIONS

The Farmington Area Transportation Study began with evaluating the existing traffic conditions, including corridor and intersection delay and crash history. This information provided the baseline conditions for developing the forecasted traffic changes under 2009-2010 school year and 2030 traffic.

During the peak travel periods of the day, the study corridors operate under capacity. Overall, the intersections in the area operate effectively with little delay and do not have capacity problems. Most intersections have crash rates lower than the state average. The intersection of CR 64 and CSAH 31 is just over the statewide average crash rate.

2008 Traffic Volumes

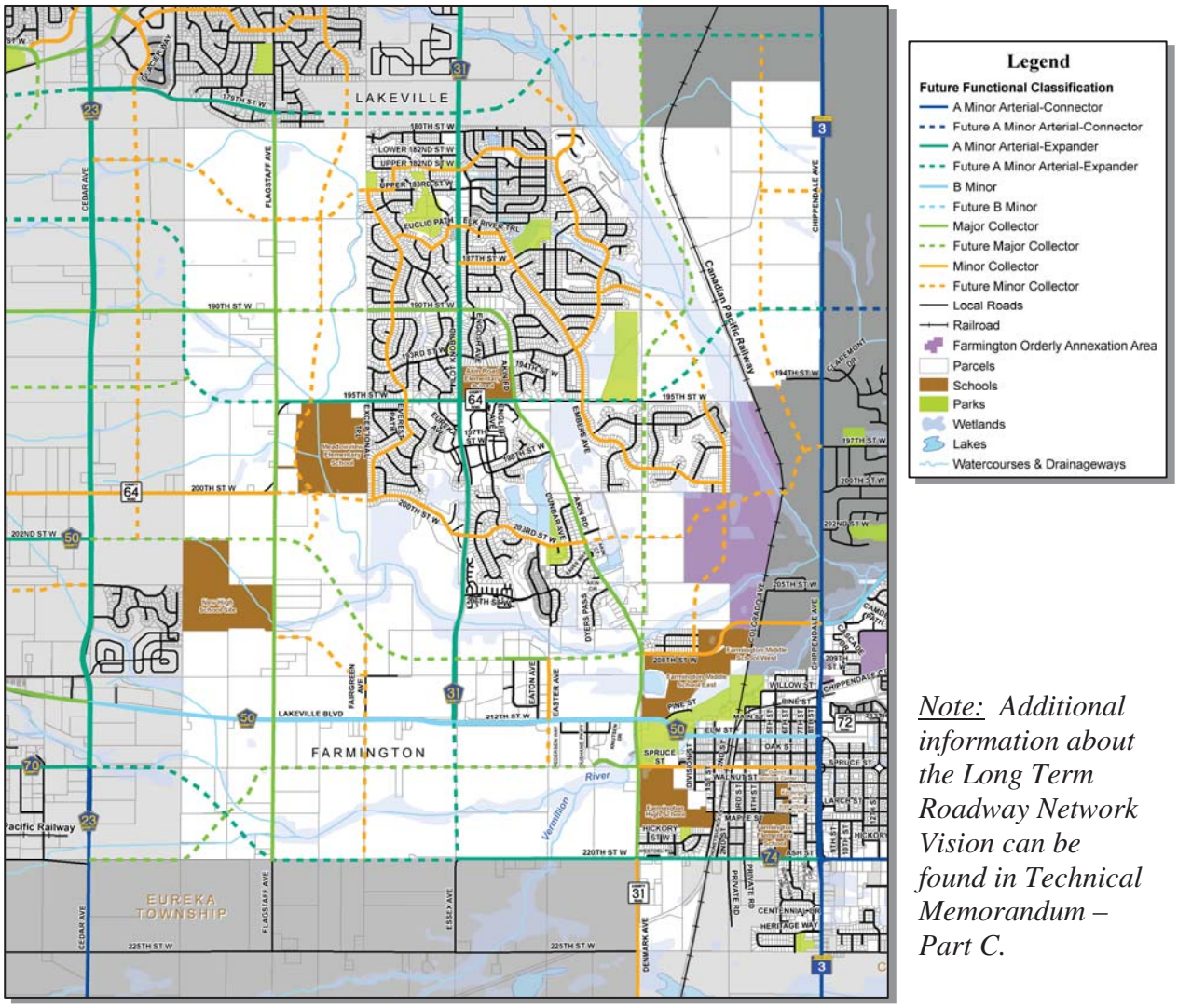


Note: Additional information about the Existing Conditions can be found in Technical Memorandum – Part A.

IV. LONG TERM ROADWAY NETWORK VISION

A roadway network vision accommodating the long-term growth needs in the Farmington Area has been developed based on recent changes in the area and coordinates the functional classification of the roadways with adjacent community plans and Dakota County's plan. This vision represents the future functional classification of existing and future corridors necessary to accommodate existing and future growth in the Farmington area and region. The designations relate a particular roadway's role in the network, such as access, mobility, or both. The designations also relate to design standards that would be appropriate for each roadway in the network to fulfill its role. The vision complements previous corridor planning efforts in the area and is coordinated with adjacent communities. The vision also considers the existing development pattern, wetlands, and drainage areas prevalent in the Farmington area. It is intended that future corridors would be developed over time as new development is initiated. This long term future roadway functional classification vision was used to develop and evaluate the 2009-2010 School Opening and the 2030 Pilot Knob Road Corridor Vision.

Long Term Roadway Vision



Note: Additional information about the Long Term Roadway Network Vision can be found in Technical Memorandum – Part C.

V. 2009-2010 SCHOOL YEAR TRAFFIC IMPACT ANALYSIS

Several changes are occurring in northwest Farmington that will alter traffic patterns in 2009-2010. These changes include the extension of CR 64 to Trunk Highway (TH) 3, the paving of Flagstaff Avenue and 200th Street, opening of the new Farmington High School and shifts in existing school building use, and some residential growth. The existing building use changes include the current high school becoming a middle school, a middle school becoming an elementary school, and having the 7th and 8th graders in the School District now split between the two middle schools. This study evaluated these changes to anticipate the traffic implications on the study corridors and at intersections along the corridors. Mitigation options were identified and an action plan developed to address forecasted safety and mobility deficiencies and maintain acceptable traffic operations. The action plan was agreed to at the Workshops by Dakota County, City of Farmington Council, and Farmington School Board for the short term (within the next year), mid-term (within 5 years), long term (by 2030), and extended term (beyond 2030). The next step would be adoption of this plan by the participating agencies.

A. CR 64 (195TH STREET) CORRIDOR

Short Term – Include preliminary design efforts in the County and City Capital Improvement Programs for 2010.

Mid Term – In 2010, develop a plan for corridor improvements, including turn lanes, shoulders, trails, and drainage. Include detailed traffic analysis to determine the timing and need for a roundabout or traffic signal at CSAH 31 (Pilot Knob Road).

Long Term – Evaluate and determine the location of primary accesses along CR 64 (195th Street).

Extended Term – Construct CR 64 (195th Street) as a four-lane divided roadway with left and right turn lanes. Extend CR 64 (195th Street) to Cedar Avenue on the west and to CSAH 66 on the east.

B. CR 64 (195TH STREET) AT AKIN ROAD

195th Street at Akin Road

Short Term – Maintain existing multi-way stop control. Monitor and determine the timing and need for left and right turn lane improvements.

Mid Term – Construct eastbound right turn lane in consideration of more substantial corridor improvements.

Long Term – Evaluate the traffic control needs as Diamond Path is constructed and north-south traffic is redistributed through the area.

Extended Term – Reconstruct the intersection to be compatible with the four-lane divided CR 64 (195th Street).

C. CR 64 (195TH STREET) AT CSAH 31 (PILOT KNOB ROAD)

195th Street at Pilot Knob Road

Short Term – Maintain existing multi-way stop control.

Mid Term – Construct eastbound right turn lane in consideration of more substantial corridor improvements. Monitor and determine the timing and need for intersection improvements, including the installation of a roundabout or traffic signal. Improvement plans should consider the CSAH 31 Corridor Analysis.

Long Term – Determine the intersection configuration needs of a four-lane divided CR 64 (195th Street) and four-lane divided CSAH 31 (Pilot Knob Road).

Extended Term – Reconstruct the intersection to be compatible with the four-lane divided CR 64 (195th Street).

D. CR 64 (195TH STREET) AT FLAGSTAFF AVENUE

195th Street at Flagstaff Avenue

Short Term – Maintain current two-way stop control and install multi-way stop control in August 2009 before fall sports begin and the new high school opens. City to install intersection lighting.

Mid Term – Monitor need for intersection improvements.

Long Term – Install a roundabout or traffic signal as traffic increases. Plan improvements to be compatible with the future four-lane divided CR 64 (195th Street) and the west extension to Cedar Avenue.

Extended Term – Reconstruct the intersection to be compatible with the four-lane divided CR 64 (195th Street) and the west extension to Cedar Avenue.

E. CSAH 50 (212TH STREET) AT FLAGSTAFF AVENUE

212th Street at Flagstaff Avenue

Short Term – Maintain existing two-way stop control. City to install intersection lighting. When the high school is adjourned for the day, non-bus traffic leaving the campus will be sent north on Flagstaff Avenue.

Mid Term – Monitor traffic conditions. Evaluate and determine the impacts of intersection improvement alternatives and traffic control. Consider the implications of future east/west roadway connections in the area. Select preferred alternative by 2011.

Long Term –Implement intersection improvements as dictated by traffic conditions.

F. CAPACITY SENSITIVITY ANALYSIS

All four of the intersections may function acceptably for a few years under the existing intersection configuration and traffic control even though there may be unacceptable delay for one or more movements in 2009/2010. A sensitivity analysis was completed to anticipate when there may be significant capacity issues which would result in significant congestion, increased driver complaints, and an increase in traffic crashes.

CR 64 (195th Street) at Akin Road – The intersection is anticipated to operate acceptably under the current traffic control (multi-way stop) for a number of years. When the conflicting movements have an increase of 78% over the traffic volume in 2008, the intersection is anticipated to be at the verge of congested conditions, where minor fluctuations can cause significant congestion. It is anticipated that this would occur between 2022 and 2026.

CSAH 31 (Pilot Knob Road) at CR 64 (195th Street) – The intersection is anticipated to operate acceptably under the current traffic control (multi-way stop) for a couple years. When the conflicting movements have an increase of 30% over the traffic volume in 2008, the intersection is anticipated to be at the verge of congested conditions, where minor fluctuations can cause significant congestion. It is anticipated that this would occur between 2009 and 2013. The addition of right turn lanes on the east and west approaches is anticipated to allow a conflicting traffic increase of 47% over the traffic volume in 2008. This increase in capacity is anticipated to extend the timeframe to between 2013 and 2017.

CR 64 (195th Street) at Flagstaff Avenue – The intersection will have delay issues during the AM peak hour with the westbound left movement under the current traffic control (two-way stop). The addition of stop signs to all approaches (multi-way stop) is anticipated to extend how long the intersection is able to handle traffic in a safe and efficient manner. Based on planning projections, the intersection is anticipated to be approaching a congested condition where minor fluctuations can cause significant congestion between 2009 and 2013. This condition is anticipated to be experienced during the morning school arrivals and afternoon school departures.

CSAH 50 (212th Street) at Flagstaff Avenue – The intersection is anticipated to operate acceptably under the current traffic control (two-way stop) for a number of years. On CSAH 50 there is essentially no capacity issues due to the existing four lane section that is the necessary road design needed to meet current and future traffic volume needs. The future south approach is a low volume roadway with no development anticipated in the City Comprehensive Plan (2030). Consequentially, the impetus for change will be based on the traffic conflicts for the north approach when there is delay and congested conditions for a larger portion of the entire day in addition to the school arrival/dismissal times. Based on planning projections, the major conflicts occurring throughout the day on the north approach would be anticipated to occur between 2010 and 2015, where minor fluctuations in traffic volumes can cause significant congestion. This condition is anticipated to be experienced during the AM peak hour for both parents leaving the school after dropping off students and for other drivers using Flagstaff Avenue as a commuter route.

G. IMPLEMENTATION

The Minnesota Manual on Uniform Traffic Control Devices (MMUTCD) provides the requirement for justifying a change in traffic control. The above sensitivity analysis indicates that the existing traffic control and geometry may function acceptably for a few years, but there are anticipated to be issues during the peak travel hours with delay for certain movements as traffic increases. Although there may be complaints due to the congestion which may be significant as the traffic increases, the justification for a change in traffic control may not be met due to low daily traffic volume from some approaches, even though there may be high peak hour volume. Traffic control changes are anticipated to be reviewed, determined, and programmed as the volume of traffic through the intersection increases, as correctable crashes increase, and as funding dictates.

Dakota County has a process to evaluate the needs and determine when a traffic control change is appropriate. For County roadways, Dakota County Transportation Department staff will install or permit a change in traffic control based on a County engineering study that indicates that a change is appropriate. The installation of signals is based on priority and considers safety, delay, access spacing, traffic volumes and other factors. It is noted that a change in traffic control may not necessarily improve the safety of an intersection (according to the State of Minnesota Traffic Safety Fundamentals Handbook). Installation of a traffic signal or all-way stop on a county roadway requires County Board approval.

<u>Note:</u> Additional information about the 2009-2010 School Opening can be found in Technical Memorandum – Part B.

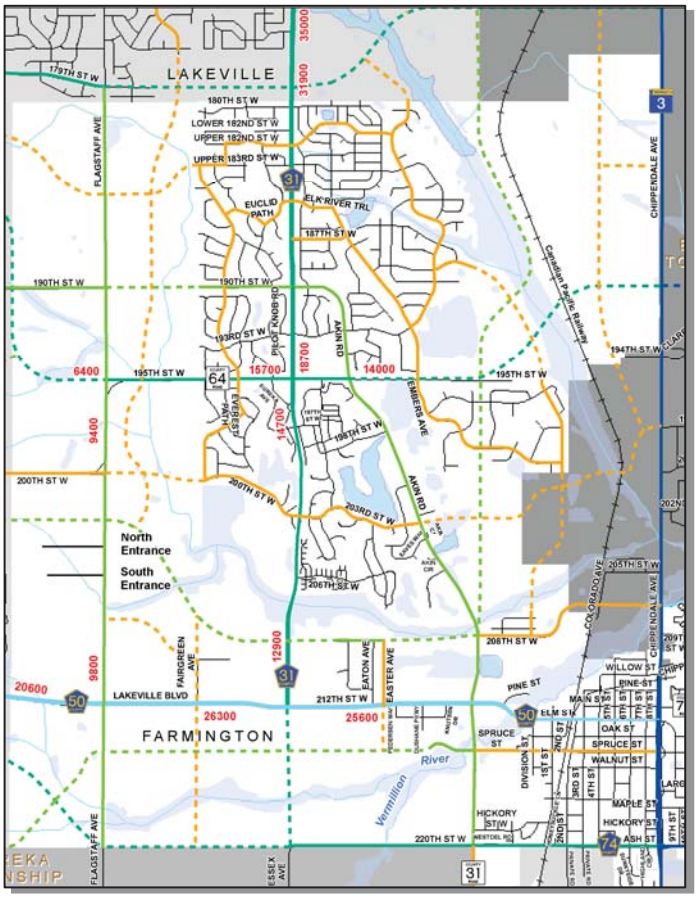
VI. 2030 FORECASTED TRAFFIC VOLUMES

Traffic forecasts were developed for the year 2030 based on the households, population, and employment envisioned in the City's 2030 Draft Land Use Plan. Also considered in the 2030 forecasts were the 2009-2010 pending improvements and long-term corridor vision.

While most of the roadway corridors do not need capacity improvements to maintain acceptable traffic operations, a few sections of the roadway may require improvements by 2030.

- CSAH 31 (Pilot Knob Road), CR 64 to 190th Street: 4-lane divided roadway
- CSAH 31 (Pilot Knob Road), north of 180th Street: 6-lane divided roadway
- CR 64 (195th Street), CSAH 31 to Flagstaff Avenue: turn lane additions as needed, 4-lane section from CSAH 31 to Eureka Avenue
- CR 64 (195th Street), TH 3 to CSAH 31: turn lane additions as needed
- Flagstaff Avenue: turn lane additions as needed

2030 Forecasted Traffic Volumes



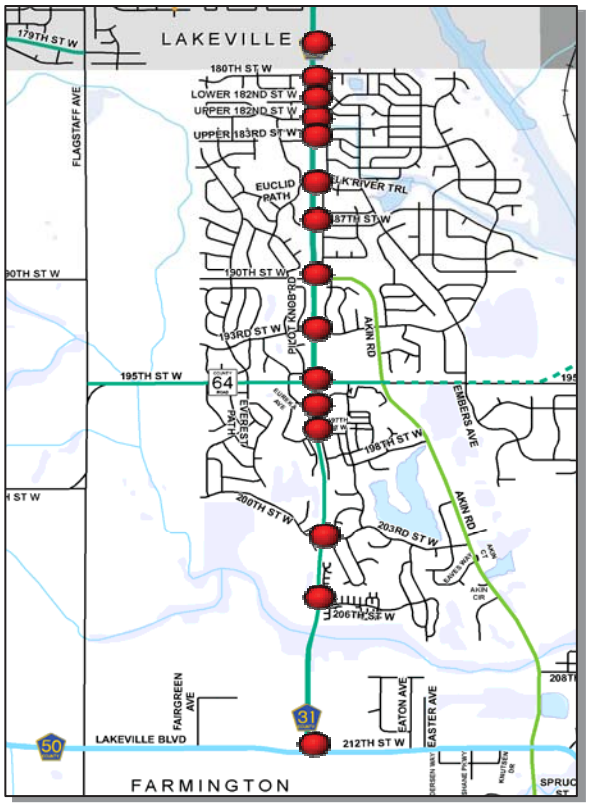
The needs identified along CR 64 match the vision that has been adopted by Dakota County in the East-West Corridor Preservation Study, November 2006. CR 64 has been identified by Dakota County on their adopted needs map as a future 4-lane divided highway with turn lane additions. Other improvements are identified as mid-term recommendations.

<u>Note:</u> Additional information about the 2030 Forecasted Traffic Volumes can be found in Technical Memorandum – Part C.

VII. 2030 CSAH 31 (PILOT KNOB ROAD) CORRIDOR VISION

Pilot Knob Road is functionally classified as an A-Minor Arterial Expander. As such, its role in the network is to provide mobility. This is achieved by limiting access. Currently, there are several accesses along the corridor. The more access that is allowed to Pilot Knob, the less the roadway can fulfill the role of mobility over access. More access also results in decreased safety with higher crash incidents.

The study establishes a vision for the Pilot Knob corridor that can be achieved over time. This vision considers preserving the mobility of the corridor, while not compromising safety. It also prioritizes providing adequate accessibility to adjacent neighborhoods, as well as commercial and public land uses. To achieve the vision, the goal of maintaining appropriate spacing of full access was established to balance mobility and access goals. ½ mile between full movement accesses meets these goals.

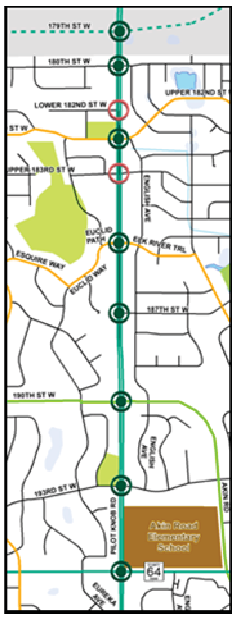


Existing Accesses along Pilot Knob Road

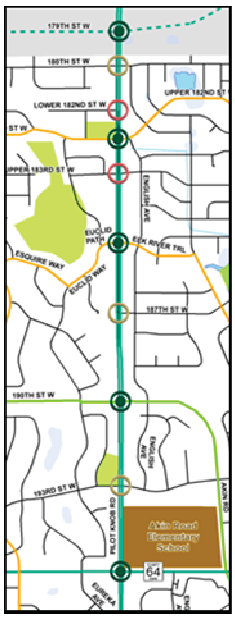
North of CR 64, four corridor access alternatives were developed. South of CR 64, three corridor access alternatives were developed.

- Primary - Intersection where full turning movements will be maintained in all directions. Concentration of traffic could be anticipated over time as additional development occurs in the area.
- Secondary - Intersection where full turning movements may not be maintained over time. Changes resulting in less than a full turning movement could occur based on traffic volumes or safety conditions.
- Existing Secondary - Intersection that does not currently have full turning movements. Further access restrictions could occur based on traffic volumes or safety conditions.

Worst Case North

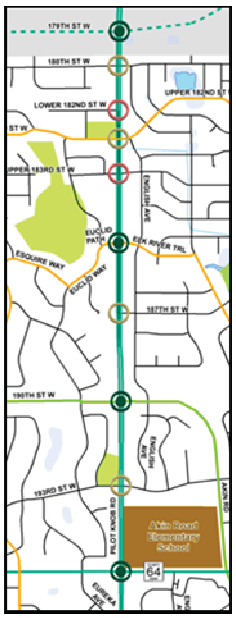


North A

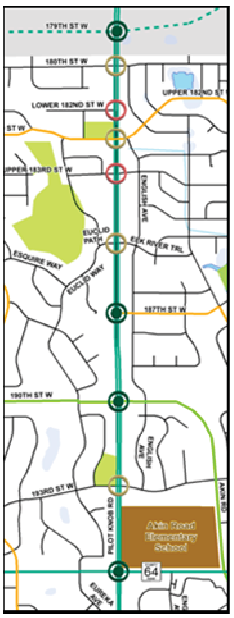


North B

North C



North D



Worst Case South

South X

South Y

South Z

Additional information about the 2030 Pilot Knob Corridor vision can be found in Technical Memorandum – Part C.

The existing access configuration and all alternatives were evaluated based on

- Delay – measurement of how much time a vehicle is delayed compared to free-flow conditions
- Travel time and speed – measurement of how quickly vehicles are moving along Pilot Knob Road, as well as side street access onto the corridor
- Access delay onto Pilot Knob Road – measurement of the amount of time that is added to a vehicle trip if vehicles have to travel to a different intersection to access Pilot Knob Road
- Safety – measurement of the number of anticipated crashes based on the conflict points associated with the type of intersection traffic control and traffic volumes on the corridor
- System planning – evaluation of how well the long-term roadway network vision is maintained and how non-motorized traffic is accommodated
- Cost – evaluation of the planning level cost estimate to implement the alternative, excluding right-of-way costs

A. Preferred Corridor Alternatives

The preferred corridor alternatives approved by the Project Advisory Committee and elected officials from the City of Farmington, Dakota County, and Farmington School District were *North B and South X*.

Alternative North B provides the least delay. This is primarily a result of the intersections being spaced evenly across the corridor. It also offers a good balance of accommodating shorter travel times on Pilot Knob Road with shorter travel times through the adjacent residential neighborhoods for vehicles trying to get onto Pilot Knob Road. This helps to reduce strain from drive-thru traffic in these neighborhoods.

Preferred Alternative North B

Preferred Alternative South X

Legend included on Page 11

Alternative D had a higher safety ranking than Alternative B, because it provides the least amount of access to Pilot Knob Road. As a result, it has the least conflict points where crashes can occur. While a safety benefit, the reduction of access to Pilot Knob Road in Alternative D results in the highest travel time through adjacent neighborhoods. Overall, Alternative B's safety ranking was third out of the five alternatives. Alternative B provides a balance between safety and mobility on Pilot Knob Road, as well as less travel time and drive-thru traffic impacts to adjacent neighborhoods.

Alternative B maintains the long-term roadway vision by balancing mobility and access. It also provides for acceptable pedestrian and bicycle accommodation. Alternatives that ranked higher had more accessibility to Pilot Knob Road to the sacrifice of safety and mobility along the corridor. Alternative B is also anticipated to require the least amount of additional right-of-way to achieve the vision.

While there were few differences between the southern alternatives, Alternative South X was selected based on its ability to maintain a primary intersection at 197th Street and the adjacent fire station and its overall balance of accessibility to the corridor and pedestrian and bicycle accessibility.

B. IMPLEMENTATION

Based on where growth is planned in the City of Farmington's Comprehensive Plan, the CSAH 31 (Pilot Knob Road) corridor is anticipated to remain as it is today for a number of years. Changes to the Farmington 2030 Comprehensive Plan, such as different areas eligible for development, may impact study findings.

The Minnesota Manual on Uniform Traffic Control Devices (MMUTCD) provides the requirement for justifying a change in traffic control. As the volume of traffic at the primary intersections increases, there may be an opportunity for a change in traffic control. However, it is anticipated that this will not happen unless the side street traffic volumes are high enough or there is an increase in correctable crashes in conjunction with sufficient traffic volume. An increase in side street traffic volume is likely to be due to the alteration of traffic from a secondary to primary access location. Traffic control changes are anticipated to be reviewed, determined, and programmed as the volume of traffic through the intersections increase, as correctable crashes increase, and as funding dictates.

Dakota County has a process to evaluate the needs and determine when a traffic control change is appropriate. For County roadways, Dakota County Transportation Department staff will install or permit a change in traffic control based on a County engineering study that indicates that a change is appropriate. The installation of signals is based on priority and considers safety, delay, access spacing, traffic volumes and other factors. It is noted that a change in traffic control may not necessarily improve the safety of an intersection (according to the State of Minnesota Traffic Safety Fundamentals Handbook). Installation of a traffic signal or all-way stop on a county roadway requires County Board approval.

<u>Note:</u> Additional information about the 2030 Pilot Knob Corridor vision can be found in Technical Memorandum – Part C.