

**GREATER CORNELIA AREA/WEST 70TH STREET  
TRAFFIC STUDY**

**Prepared for the City of Edina**

**Prepared by SRF Consulting Group, Inc.**

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**by the**

**Edina Transportation Commission**

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## **EXECUTIVE SUMMARY**

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### **Study Purpose**

To address on-going complaints from residents regarding high traffic volumes and speeds on West 70th Street and other residential streets in the area, along with access issues onto West 70th Street from roadways, a traffic study for the Greater Cornelia/West 70th Street area was conducted to evaluate traffic volumes, speeds and safety, address pedestrian/bicycle concerns, identify potential solutions for the study corridor and provide recommendations that best fit the community's needs.

### **Study Process**

- Collect data, analyze and prioritize the issues
- Consider alternative solutions
- Public communication and input
  - Several special ETC and SAC meetings
  - Public open house
  - Publish progress – City website, newsletters
  - Public hearing and comment period on draft report as directed by Edina City Council and ETC
- Recommendations to the Edina City Council

### **Study Findings**

- Daily traffic volumes on West 70th Street have varied over time with changes in land use and improvements in the broader transportation system – historically, daily volumes have been higher than the current 13,600 vehicles per day
- By the year 2030, daily traffic volumes are anticipated to be 19,300 vehicles per day
- Hourly traffic volumes on West 70th Street do not follow the typical pattern of significant peaks during the morning and evening rush hour, but rather show a consistently high volume of traffic throughout the day
- A significant amount of West 70th Street traffic exceeds the 30 mph speed limit (approximately 70 to 90 percent), and a significant amount of those exceed the speed limit by more than 5 mph
- Motorists entering West 70th Street from side streets or driveways have difficulties during peak travel times

- Traffic surveys indicate that approximately 25 percent of the West 70th Street traffic – traveling south on Highway 100 then east to the Southdale, Galleria or Richfield areas – could potentially be influenced to take another route if their travel time was shorter

Since a four-lane roadway would not completely address side-street and driveway delays, it is not being considered to accommodate the anticipated future traffic volumes on West 70th Street; two-lane and three-lane options can accommodate future traffic while providing enough delay to influence drivers to take alternate routes.

### **Study Approach to Address Problems**

To address the high volume and speeds traveling on West 70th Street, the following approach was used to develop alternatives where broad public support could be achieved:

- Gain a thorough understanding of the issues and concerns through data collection and analysis, as well as public input
- Consider public input throughout the process to inform area residents and business owners about the study results, as well as determine the level of support for possible solutions
- Develop solutions that would encourage through traffic to use other arterial routes and discourage the use of West 70th Street
- Identify roadway improvements that provide a visual cue to motorists that they are leaving a higher volume roadway (such as Highway 100 and France Avenue) and entering the Greater Cornelia/West 70th Street neighborhood

## **Study Recommendation**

The Study Recommendations for the Greater Cornelia Area/ West 70<sup>th</sup> Street Traffic Study are as follows:

- Removal of free right on northbound Highway 100 to east bound West 70th Street.
- Creation of a school speed zone around Cornelia Elementary School.
- Installation of a “smart” signal system along the corridor; including a new traffic signal at West Shore Drive, pedestrian activated crossing at Wooddale Avenue and modifications to the existing traffic signal at Cornelia Drive.
- Parking to remain along corridor where applicable.
- Exclusive left-turn lanes at West Shore Drive, Wooddale Avenue and Cornelia Drive
- Pavement rehabilitation or reconstruction to lower noise of the roadway.
- Explore possibilities for offering driveway turn arounds on private property.
  
- Roundabout to replace the “T” intersection of West 70th Street and Valley View Road.
- Enhance landscaping along the corridor.
- Further evaluation of roundabouts at the intersection of West 70th Street and Trunk Highway 100.
- Install improved signage directing through traffic to use routes other than West 70th Street.
- Promote additional lane geometrics on Highway 62 between Highway 100 and France Avenue (or beyond).
- Proper planning for future redesign of West 76th Street corridor.

See the expanded recommendations and phasing guidelines located on pages 21-26 of the report for a more in-depth explanation of each recommendation.

## **STUDY PROCESS**

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### **Study Purpose**

In September 2006, a traffic study was initiated in response to long-term concerns from area residents regarding high traffic volumes and speeds on West 70th Street and other residential streets in the neighborhood. The main objective of the study was to evaluate traffic volumes and speeds, address pedestrian/bicycle safety concerns, identify potential solutions for the study corridor and provide recommendations that best fit the community's needs.

### **Study Area**

The study area for the Greater Cornelia Area/West 70th Street Traffic Study is bounded by Highway 100 to the west, France Avenue to the east, Highway 62 to the north and West 77th Street/Fred Richards Golf Course to the south. The majority of the areas north and south of the corridor include established residential neighborhoods. The public involvement process also included neighborhoods west of Highway 100 and business/commercial areas at each end of the corridor.

### **Study Advisory Committee (SAC)**

To facilitate input and coordinate planning efforts, the City of Edina invited members of the Edina Transportation Commission (ETC), adjacent Richfield neighborhood, adjacent business and commercial areas, and agency stakeholders to participate on a Study Advisory Committee (SAC). The SAC was challenged with identifying issues of concern, reviewing analysis results, evaluating alternatives, and facilitating public input throughout the process. Members of the SAC included:

- Neighborhood Representatives
- Christ Presbyterian Church and Cornelia Elementary School Representative
- Business Area Representatives
- Richfield Neighborhood Representative and City Staff
- Hennepin County and Mn/DOT Staff
- Edina Transportation Commission Members
- Planning Commission Member
- Edina City Staff

The role of each SAC member was to guide the study process and provide a recommendation to the Edina City Council upon the study's completion. The ETC will make a final recommendation to the Edina City Council after reviewing the draft report and SAC recommendation. The City Council will make the final decision, following a public hearing. Summaries of the SAC meetings can be found in Appendix A.

## **Public Involvement Process**

Public participation and consensus building was considered central to developing solutions that could be supported by diverse residents and stakeholders with potentially different interests and values. The public involvement process began with an informational meeting (Open House #1) on November 28, 2006. Based on the overwhelming attendance at this meeting, public hearings were scheduled in January/February 2007 to allow area residents to provide additional comments and concerns about the study area.

The remaining public involvement components, including the participation of the SAC are described below:

- **SAC #1 (April 12, 2007)** – process overview, identifying, summarizing and prioritizing the issues, and significance of the problem
- **SAC #2 (May 17, 2007)** – transportation education overview, concurrent related projects, state-aid requirements and finances, City policies and rationale
- **SAC #3 (August 9, 2007)** – data collection, O-D survey results, study goals and constraints, evaluation criteria and anticipated alternatives
- **SAC #4 (September 27, 2007)** – additional traffic speed data, future traffic projections, potential alternative elements and sustainable options for future West 70th Street
- **SAC #5 (November 29, 2007)** – segment concept alternatives, intersection improvements and potential cross-section and right-of-way dependent elements
- **Open House #2 (January 23, 2008)** – input on preliminary concepts
- **Public Hearing (January 31, 2008)** – comment publicly on preliminary concepts
- **SAC #6 (July 28, 2008)** – summary of all public input, information on issues frequently raised, alternative concepts, discussion of pros and cons, review draft survey and public comments
- **Comment Card Mailing (August 22, 2008)** – comment publicly on study options and funding
- **SAC #7 (November 6, 2008)** – summary of survey results and review draft report. SAC asked staff and consultant to look at reducing traffic volumes by use of roundabouts.
- **SAC #8 (January 12, 2009)** – summary of roundabout alternative and creation of a SAC recommendation.
- **ETC (January 15, 2009)** – receive recommendation from SAC, review draft report, consider public input to date, and make a formal recommendation to the Council

- **City Council (February 3, 2009)** – Council to receive recommendation from the Edina Transportation Commission.
- **Public Hearing (February 17, 2009)** – consider all public input and make final decision on the ETC recommendation

Open House and Public Hearing comments are also summarized in Appendix A.

### **Problem Statement**

During peak travel times, motorists on the side-streets and residential driveways are experiencing difficulty entering the West 70th Street corridor. High levels of traffic and speeds on the study corridor raise concerns regarding the safety of pedestrians and bicyclists and are not consistent with the character of a residential street. There is a conflict between the residential character of the roadway versus its role as a thoroughfare between Highway 100 and the greater Southdale area. Specifically, the following issues have been identified as priority concerns:

#### Traffic Issues

- High speeds on West 70th Street with the perception that there is little to no police enforcement of the speed limit
- High traffic volumes on West 70th Street
- Aggressive driving behavior includes passing on shoulders or in turn lanes, honking, tailgating, failing to yield to pedestrians and running traffic signals
- Safety concern for pedestrians, bicyclists and school-aged children – unsafe and difficult to cross West 70th Street
- Difficult to enter West 70th Street from side streets and driveways
- Perceived high truck traffic volume and associated noise on West 70th Street
- With no access to the west and south, West 70th Street is the major access for residents south of the corridor
- Perception that much of the traffic on West 70th Street is “non-local”
- Need to define how much of the traffic using West 70th Street is local/residential traffic versus cut-through/non-neighborhood traffic and what is considered “local” (West Edina residents, West Edina workers who live in West Richfield etc.)
- Traffic noise and air pollution
- High speeds and cut-through traffic on neighborhood streets to the north and south are due to difficulty in accessing West 70th Street, congestion at France Avenue and the perception that neighborhood routes are faster
- Safety concerns with the traffic operations of the northbound Highway 100 off ramp, Normandale Road and Christ Presbyterian Church

- Traffic congestion concerns at easterly end of corridor from France Avenue to Valley View Road as lane geometrics change from 4 lanes to 2 lanes.
- Traffic congestion along the France Avenue corridor such that many people choose to use alternate routes, like 70<sup>th</sup> Street via Highway 100, to access areas east of France instead of Highway 62 or Highway 494.

### Neighborhood Issues

- Some residents are concerned that future redevelopment in the Southdale area will continue to increase traffic volumes on West 70th Street and affect its residential character
- Some residents believe redevelopment (high rise buildings, hotels, condos) is a higher priority than the adverse traffic impacts on existing neighborhoods
- There is the tension between the need for east-west travel on West 70th Street as a through route versus its character as residential street
- Some residents believe we need to eliminate the State Aid designation of West 70th Street in order to lower the speed limit, restrict trucks and eliminate the possibility of a four-lane expansion
- Some residents do not trust City officials (City Council, Planning Commission, ETC, City staff)
- Some residents believe there is a hidden agenda and predetermined plan for West 70th Street
- There is a concern with the selection of SAC members – lack of residents on the committee
- Some residents believe any expansion of West 70th Street is to support commercial growth
- Some residents believe study is narrowly focused and needs to be expanded
- Some residents want to actively participate, not just provide input
- Some residents are concerned with a decrease in home value due to traffic issues and the potential of West 70th Street being expanded

## **CURRENT TRAFFIC PROBLEMS AND ISSUES**

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The study included a thorough data collection plan to clearly identify current traffic and safety problems in the West 70th Street/Cornelia Area. A comprehensive understanding of the issues was critical to building credibility with stakeholders and developing solutions that adequately address study area needs.

### **Data Collection Plan**

With direction from City staff, the following data collection plan was developed and implemented:

- **Historical traffic volumes:** Historical daily traffic volumes were compiled for West 70th Street, West 66th Street and West 77th Street to determine traffic growth patterns on study area roadways.

It is important to note that daily traffic volumes documented over the years represent a “snapshot” in time when the data was collected. In addition, historical volumes could also vary due to the change of the traffic counting equipment at the time.

- **Roadway traffic volumes:** Roadway tubes (May/July 2005) were placed at each end of the West 70th Street corridor to determine weekday, weekend and hourly traffic volumes and peak travel time patterns. Additional roadway tubes (September/November 2006) were placed on 20 neighborhood streets in the study area to determine weekday traffic volumes.
- **Speed data:** Roadway tubes also collected information regarding vehicle speeds, which were compared to posted speeds for residential streets in the study area.
- **Peak hour turning movement counts at key intersections:** Turning movement counts (September 2006) were conducted at key intersections during the morning and evening peak hours to evaluate the intersection operations and average delay currently experienced by drivers at these intersections.
- **Origin-Destination (O-D) surveys:** O-D surveys were conducted on May 16, 2007.

A station was set up on West 70th Street in the eastbound right-turn lane at Arneson Acres Park to conduct O-D surveys between 4:45 p.m. to 5:45 p.m. The survey results determined the amount of “through” traffic currently traveling on West 70th Street during the evening peak hour in the eastbound direction.

An additional station was set up in the office development parking lot in the southwest quadrant of Highway 100 and Metro Boulevard to determine employee travel patterns from their place of employment between 4:00 p.m. to 4:45 p.m.

## **Study Analysis**

A thorough analysis was conducted to identify the magnitude of the current traffic problems and to address the following questions:

- What are the current traffic volumes on West 70th Street and other residential streets in the study area?
- How have traffic volumes on West 70th Street grown over the years?
- What are the hourly travel patterns along West 70th Street during a weekday and weekend?
- What percent of the evening peak hour traffic is traveling through the study area using West 70th Street?
- Are speeds along West 70th Street higher than the posted speed limit?
- Are other residential streets in the study area experiencing higher speeds than the posted speed limit?
- How are key intersections currently operating?

## **Study Findings**

The data collection task and analysis of current conditions is summarized below and in the attached Figures 1 – 12 in Appendix B.

- Daily traffic volumes on West 70th Street have varied over time with changes in land use and improvements in the broader transportation system – historically, daily volumes have been higher than the current 13,600 vehicles per day.
- Hourly traffic volumes on West 70th Street do not follow the typical pattern of significant peaks during the morning and evening rush hour, but rather show a consistently high volume of traffic throughout the day.
- A significant amount of West 70th Street traffic exceeds the 30 mph speed limit (approximately 70 to 90 percent), and a significant amount of those exceed the speed limit by more than 5 mph.
- Motorists entering West 70th Street from side streets or driveways have difficulties during peak travel times.
- Traffic surveys indicate that approximately 25 percent of the West 70th Street traffic – those moving south on Highway 100 then east to the Southdale, Galleria or Richfield areas – could potentially be influenced to take another route if their travel time was shorter.

## **STUDY ALTERNATIVES**

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Given the study findings, the SAC identified the following evaluation criteria that would address the study goals and be used in the alternatives analysis to determine feasible solutions to the problem (no order of preference):

- Ability of alternative to carry anticipated traffic volumes and/or redirect traffic volumes to other appropriate roadways with excess capacity
- Level of service at key intersection(s)
- Travel time estimates
- Ability of alternative to promote reasonable speeds
- Ability of alternative to address traffic flow and/or geometric concerns creating problematic conditions
- Ability of alternative to inform motorists of change of character at West 70th Street
- Number and location of controlled pedestrian crossings
- Ability to provide a trail/sidewalk along West 70th Street in accordance with appropriate standards
- Ability of alternative to provide sufficient gaps to allow backing onto West 70th Street from adjoining driveways
- Ability of alternative to provide reasonable levels of delay at side-street intersections
- Number and location of access/egress points from the neighborhood to collector or arterial streets
- Concept level cost estimate/time for implementation
- Amount of right-of-way required
- Approvals needed to implement the alternative and anticipated success in securing approvals

## **Daily Traffic Volume Assessment**

Based on public input, it was important that potential solutions reduce the number of vehicles traveling on West 70th Street today and in the future. With the assessment of daily traffic volumes, there were three main areas of discussion:

### Actual Data Collected:

- Roadway tube counts identified a 2005 daily traffic volume of 13,600 vehicles per day on West 70th Street west of West Shore Drive. This is a documented AADT volume shown on Mn/DOT's 2005 Municipal State Aid Street System Traffic Volume map for the City of Edina.
- O-D survey results identified 28 percent of the eastbound traffic between 4:45 p.m. and 5:45 p.m. was local traffic. The eastbound total traffic volume collected during the evening peak hour in September 2006 was approximately 900 vehicles. Therefore, it is reasonable to conclude that approximately 250 vehicles were local traffic. However, this percentage only applies to one direction of travel (eastbound) during one hour of the day (evening peak hour) and it cannot be applied to the total daily traffic volume.

The O-D survey results indicate that a high volume of motorists are traveling through the study area using West 70th Street. The O-D survey was only conducted for the evening peak hour in the eastbound direction. Unless survey results are available for other hours of the day in both directions, it is a difficult task to calculate how many motorists could be diverted to other alternate routes by implementing potential solutions. In general, motorists have to experience a negative experience along West 70th Street (heavy congestion and delays) before diverting to another route. At that point, the motorist's experience on the alternative route needs to be positive (less congestion and delay), in order for the motorists to stay on that route.

### Metropolitan Council Regional Model Exercise

- The 2005 regional model was used to estimate how much traffic from the neighborhoods to the north and south could be using West 70th Street on a daily basis. A summary of this exercise is included in Appendix F.
- In the 2005 regional model, 1,090 households are assigned to West 70th Street. For single family residential units, the average trip generation rate identified in the 2003 Institute of Transportation Engineers (ITE) Trip Generation Reports is approximately 10 trips per day. This source indicates that each trip represents one direction of travel. Therefore, leaving the house to go to the grocery store and back requires you to travel on a segment of West 70th Street twice, which equals two trips.
- Based on the above information, the homes north and south of West 70th Street could generate 10,900 trips per day on West 70th Street. It is important to note

that this is only an exercise to estimate how much traffic is assigned to West 70th Street from a modeling perspective. It is not a calculation indicating that 10,900 trips of the 13,900 vehicles (actual data) is local traffic. The number of local trips generated could be slightly less or more. However, it is not reasonable to assume that each house only generates two trips per day, or 2,800 trips on West 70th Street. In addition, this exercise does not include daily trips for the church and school, which should also be considered local traffic using West 70th Street.

### Future Traffic Volumes

- As part of the City's Comprehensive Plan update (2008), traffic forecasts for year 2030 were estimated for the study segment of West 70th Street using the Metropolitan Council's regional model. Based on future land use plans within the City of Edina and surrounding communities and capacity constraints on other major transportation facilities (such as I-494 and Highway 100), the 2030 daily traffic volume along West 70th Street east of Highway 100 is estimated at 19,300 vehicles per day. This forecast traffic volume was determined using an extensive modeling process under a separate study. Further documentation is included in the City's Draft Transportation Plan (Chapter 7). Forecast traffic volumes for other study area roadways are shown in Figure 13 in Appendix B.
- Under current Mn/DOT State Aid guidelines "for volumes greater than 15,000 projected ADT, at least four through-traffic lanes are required. Additional average daily traffic may be allowed if a capacity analysis demonstrates that level of service D or better is achieved at the higher traffic volume..." The Study recognizes the potential inconsistency of the Metropolitan Council's forecasts and the relatively constant traffic counts over the previous 20 years. Documentation and application of variance to Mn/DOT would be a component of the study implementation to resolve the issue between forecasted and actual traffic data.

## **Design Elements**

Prior to the development of study alternatives, the following design elements were analyzed:

- Roadway capacity section (two-lane section, three-lane section and four-lane section)
- Intersection design and traffic control (side-street stop control, all-way stop control, traffic signals and roundabouts)

Based on an operations analysis using future traffic projections for West 70th Street, a four-lane roadway would not completely address side-street and driveway delays along the corridor. Therefore, it was decided that a four-lane section would not be considered to accommodate future traffic volumes on West 70th Street. The development of study alternatives only considered two-lane and three-lane design sections.

Results of the operations analysis also identified which intersection traffic control measures could continue to be included in the development of concept alternatives. The installation of all-way stop control at intersections along the study segment of West 70th Street would create significant delays and queues for mainline traffic during the morning and evening peak hours. These queues extending from the all-way stop controlled intersections would increase the difficulty of motorists entering the West 70th Street corridor from other side streets and driveways during peak hour conditions. Therefore, all-way stop controlled intersections were eliminated from consideration. Side-street stop control, traffic signals and roundabouts were feasible intersection traffic control measures to consider during the development of concept alternatives.

## **Concept Alternatives**

Due to the diverse interests amongst the SAC members, City staff, and the community at large, the development of study alternatives involved a lengthy process to reach a point where a compromised alternative could achieve broad support. The development of study alternatives involved the following three separate phases:

**Phase 1** – development of base alternatives focusing individually on segments and intersections

**Phase 2** – development of combined base alternatives focusing on a comprehensive solution for the corridor and its end points

**Phase 3** – development of four final options taking into account all public input

### Phase 1 – Base Alternatives

With input from SAC members, base alternatives focusing on the West 70th Street segment were identified for further analysis:

- Arneson Parkway Alternative – A two-lane roadway with the construction of roundabouts at Cornelia Drive and West Shore Drive and a continuous center median
- Traffic Signal Alternative – A three-lane roadway with the current traffic signal at Cornelia Drive and a new traffic signal at West Shore Drive
- Combined Traffic Signal/Roundabout Alternative – A two-lane roadway with the current traffic signal at Cornelia Drive and a roundabout at West Shore Drive

In addition to the segment itself, public input identified the need to develop solutions that inform motorists at both ends of the corridor that the character of West 70th Street is changing to a residential street. In addition, an important study goal was to redirect traffic from West 70th Street to more appropriate roadways with excess capacity. Therefore, improvements to provide a better connection of West 70th Street to Valley View Road were developed for the east end. Long-term improvements to the France Avenue intersection and the Highway 100/Normandale Road/Frontage Road area (taking into account the church access) were also developed.

It is important to note that these were base alternatives to provide a place to start in the analysis of the corridor as a whole and the intersections at both ends. Concepts of the base alternatives are included in Appendix C.

### Phase 2 – Combined Base Alternatives

The combined base alternatives included improvements along the segment corridor and at each end of the corridor. These alternatives were prepared for the January 2008 open house, to gain community feedback. Concepts of the combined based alternatives are included in Appendix D and are summarized below:

- Roundabout Alternative – A two-lane roadway with the construction of roundabouts at the intersections of Highway 100, West Shore Drive, Cornelia Drive and Valley View Road and a continuous center median.
- Traffic Signal Alternative with Roundabouts – A three-lane roadway with the current traffic signal at Cornelia Drive, a new traffic signal at West Shore Drive and roundabouts at Highway 100 and Valley View Road.
- Traffic Signal Alternative with a Roundabout and Direct Connection – A three-lane roadway with the current traffic signal at Cornelia Drive, a new traffic signal at West Shore Drive, a roundabout at Highway 100 and a direct connection at Valley View Road.

- Combined Traffic Signal/Roundabout Alternative – A two-lane roadway with the current traffic signal at Cornelia Drive and roundabouts at Highway 100, West Shore Drive and Valley View Road.

In order to better understand how these alternatives would impact the existing curb-to-curb and right-of-way width along the corridor segment, cross-sections were developed and also presented at the open house. With information provided by the West 70th Street Homeowner's Association, a cross-section representing the Arneson Parkway concept was also developed. These cross-sections are also provided in Appendix D.

### Phase 3 – Final Study Options

As a result of the open house and public hearings, four options for the central part of the corridor and one option for each end of the corridor were developed and included in a comment card, in order to receive public feedback. A detailed comparison of the final study options was conducted, addressing issues such as through traffic diversion, traffic speed reduction, access to the corridor, pedestrian/bicycle safety, and on-street parking. Concepts of the final study options and the comparison matrix are included in Appendix E and are summarized below:

#### ***Option 1 – Arneson Parkway***

This is the option presented by the West 70th Street Homeowner's Association. The corridor design includes two 10-foot driving lanes separated by a one-foot wide rumble strip, multipurpose vehicle lanes (for bikes and small electric/motorized vehicles) on both sides, a parking lane on one side, pushbutton pedestrian crossings at Cornelia Drive, West Shore Drive and Wooddale Avenue, an added traffic signal at West Shore Drive and new noise reducing asphalt pavement. Left-turn lanes at West Shore Drive, Wooddale Avenue and Cornelia Drive will be removed. Road sensors would be installed to trigger extended left-turn lights.

Planning level daily capacity is 8,000 to 10,000 vehicles per day.  
Overall project cost is approximately \$850,000.

A memorandum from City staff related to rubberized pavement is included in Appendix F.

#### ***Option 2 – Modified Arneson Parkway***

This corridor design includes two 11-foot driving lanes, "bike only" lanes on both sides, a parking lane on one side, pushbutton pedestrian crossings at Cornelia Drive, West Shore Drive and Wooddale Avenue, an added traffic signal at West Shore Drive and new asphalt pavement. Designated left-turn lanes at the intersections of West Shore Drive, Wooddale Avenue and Cornelia Drive will remain.

Planning level daily capacity is 14,000 to 18,000 vehicles per day.  
Overall project cost is approximately \$1,106,000.

Although there are several differences between Options 1 and 2, the main difference is the elimination of left-turn lanes in Option 1. The lack of left-turn lanes at key intersections creates a safety concern with left-turn, rear-end and side-swipe crashes. Transportation research has identified numerous studies documenting the effectiveness of left-turn lanes in increasing intersection safety. A source used by Mn/DOT's Highway Safety Improvement Program, a program that federally funds roadway projects designed to decrease the frequency and/or severity of crashes, is the Kentucky Transportation Center – Development of Accident Reduction Factors. According to this source, there is a 45 percent reduction for left-turn crashes and 25 percent reduction for all other crashes at an intersection, when left-turn lanes are installed.

### ***Option 3 – Three-Lane Option***

This corridor design includes two 14-foot driving lanes in each direction with a continuous center turn lane. This option does not include any on-street parking or bike/multipurpose vehicle lanes. This design also include new smoother pavement.

Planning level daily capacity is 14,000 to 18,000 vehicles per day.  
Overall project cost is approximately \$975,000.

### ***Option 4 – Current Roadway Design (As Is)***

This corridor design does not change from what is currently in place. However, future construction would include some type of an asphalt overlay to reduce the wheel noise.

Planning level daily capacity is 14,000 to 18,000 vehicles per day.  
Overall project cost is approximately \$775,000.

### ***West End Option***

The westerly end of the corridor encompasses the intersection of Highway 100, Normandale Road, the north frontage road and the Christ Presbyterian Church access. One option is to leave as is. Another option would be to incorporate two roundabouts, one on each side of Highway 100. The roundabouts are being proposed in this option to address the operational problems experienced in the Highway 100/Normandale Road/frontage road area, including the church access. The proposed roundabout east of Highway 100 will also improve the movement from West 70th Street to the north frontage road. These roundabouts would also reduce travel speeds and provide a visual cue of entering the neighborhood from the west end.

Additional project cost is \$1,000,000.

### ***East End Option***

The easterly end of the corridor encompasses both the Valley View Road and France Avenue intersection. The France Avenue intersection is proposed to remain the same. However, there is an option of a roundabout at Valley View Road. The roundabout is being proposed in this option to reduce travel speeds and provide a visual cue of entering the neighborhood from the west end.

Additional project cost is \$800,000.

### **Funding Options**

West 70th Street is currently a designated Municipal State Aid (MSA) roadway. Twenty percent of local municipality roadways are typically dedicated as MSA roadways. This means that funding for MSA roadways are derived from the State Gas Tax. This money is then distributed through Mn/DOT. In order to acquire this money for roadway projects, the municipality must abide by the rules put in place by the State Legislators. The City Council has established a local funding policy in the City of Edina for MSA roadways. This policy includes a special assessment of twenty percent of the roadway cost to the adjacent properties; the other 80 percent is funded through MSA monies. The potential funding options for West 70th Street improvements could be:

- 80 percent with MSA funds and 20 percent with special assessments to adjacent property owners
- Increase property taxes to the entire City to fund a specific roadway project
- Special assessments to a specific area/neighborhood

Some of the options do not meet current State rules and therefore would not be eligible for MSA funding. However, variances are possible for some of the options and would need to be applied for once an option is chosen. Approval of variances is not guaranteed. Options 1 and 2 would require a variance for the proposed roadway improvements and new traffic signal. Option 3 would require a variance for a new traffic signal. Information in response to questions raised during the study process and a signal justification memorandum is included in Appendix F.

## Survey Results

On August 22, 2008, a comment card was sent out to more than 1,332 residents. We received 685 responses, almost a 51 percent response rate, which is exceptionally high. A breakdown of comment cards mailed back to the City is summarized below:

- Residents on West 70th Street – 48 out of 65 returned (75 percent responded)
- Residents north of West 70th Street – 289 out of 581 returned (50 percent responded)
- Residents south of West 70th Street – 343 out of 681 returned (50 percent responded)
- Five miscellaneous responses through the website

Based on the review of all comment card responses, the following issues were identified:

- Traffic volumes and vehicle speeds on West 70th Street should be reduced
- Reducing vehicle volumes and speeds along the corridor are equally important
- Safety of pedestrians and access to West 70th Street from side streets and driveways is jeopardized with the current state of the roadway
- On-street parking is not needed on both sides of the street
- Each side is equally important for on-street parking
- Current designated pedestrian crosswalks should be upgraded
- Designated bicycle lanes should be incorporated along the roadway
- The City has sent effective communications regarding the West 70th Street/Cornelia Area Traffic Study
- There is minimal support for Option 3 – Three-lane Option
- There is minimal support for Option 4 – Current Roadway Design
- Options 1 – Arneson Parkway and 2 – Modified Arneson Parkway are clearly the preferred options and the support is split fairly even between the two.
- Improved signing to alternative routes should be considered at the west end
- There is minimal support for roundabouts at the west end
- No improvements are necessary for the east end
- There is minimal support for eliminating MSA funding from any future projects on West 70th Street

- There is minimal support for higher property taxes or special assessments to implement one of the roadway options

The comment card survey results are included in Appendix E.

## **ENGINEERING TECHNICAL RECOMMENDATION**

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Based on the data collected, study findings, comment cards and survey results; an engineering technical recommendation was developed. Despite the fact that the two options are essentially equally supported by the public, they are significantly different in design and function. City staff and the consultant recommend the Modified Arneson Parkway option based on the following reasons:

- According to the basics of intersection design, the efficiency, safety, speed and capacity of a roadway depend on the design of its intersections. If the intersections are not properly designed and begin to break down from an operations and safety standpoint, the roadway as a whole operates poorly and becomes unsafe.
- The lack of exclusive left-turn lanes at key intersections along West 70th Street creates the potential for an increase in left-turn, rear-end and side-swipe crashes. Studies have shown the effectiveness of left-turn lanes in increasing intersection safety, with a 45 percent reduction in left-turn crashes and 25 percent reduction for all other crashes, when left-turn lanes are installed.
- As a basic design principle, left-turn lanes will provide added safety and efficiency at both unsignalized (Wooddale Avenue) and signalized (Cornelia Drive and West Shore Drive) intersections along West 70th Street. Left-turn lanes will improve the safety and operation of these intersections by providing space for deceleration and storage of vehicles wanting to make a left turn.
- Left-turn lanes will also facilitate the movement of through traffic along West 70th Street with less friction at key intersections along the roadway. The lack of left-turn lanes and reduced capacity at key intersections will increase peak hour congestion and mainline queues along West 70th Street. If motorists experience long queues and heavy delays on West 70th Street during the peak hours, there may be a noticeable increase in cut-through traffic on neighborhood streets north and south of the corridor.

## STUDY RECOMMENDATION

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The Edina Transportation Commission at their January 15, 2009 meeting accepted the recommendations from the Study Advisory Committee's January 8, 2009 meeting. The ETC has integrated the SAC recommendations that help to lower speeds, reduced traffic volumes and increase safety into the following recommendations:

1. Removal of free right on northbound Highway 100 to east bound West 70th Street.

The current lane and signal configuration at this intersection allows traffic exiting the northbound Highway off ramp destined for eastbound West 70th Street to only yield to current traffic on West 70th Street. This free right increases the continuous flow of eastbound traffic, limiting the gaps in traffic along West 70th Street and the ability of residents to gain access to the roadway from their driveways. In addition, the geometrics of the right-turn lane allow vehicles to negotiate the turn at higher speeds. These higher speeds may continue as vehicles travel east along the corridor.

2. Creation of a school speed zone around Cornelia Elementary School.

As part of the current Safe Routes to School program consistent street signage, pavement markings and the establishment of a reduced speed zone to possibly 15-mph along West 70th Street (in front of the school) would be implemented. In addition, dynamic speed feedback signage and other new technologies to inform drivers of their travel speeds along the corridor and through the school zone would be implemented.

3. Installation of a "smart" signal system along the corridor; including a new traffic signal at West Shore Drive, pedestrian activated crossing at Wooddale Avenue and modifications to the existing traffic signal at Cornelia Drive.

The goal is to coordinate the proposed traffic signal at West Shore Drive and the proposed pedestrian activated crossing at Wooddale Avenue with the existing traffic signal at Cornelia Drive. This coordination would allow the two traffic signals and the pedestrian crossing to function as one system, in order to manage vehicle speeds, improve pedestrian safety and provide gaps in the traffic stream for better access to and from uncontrolled side streets and driveways. The proposed traffic signal at West Shore Drive would also provide a new controlled access for resident to enter the corridor, while creating additional delay for the east-west through traffic.

4. Parking to remain along corridor where applicable.

On-street parking is currently allowed along the corridor where permitted by signage and pavement markings. It is fairly evenly distributed between the north and the south sides of West 70th Street.

5. Exclusive left-turn lanes at West Shore Drive, Wooddale Avenue and Cornelia Drive

The current roadway configuration has exclusive left-turn lanes at the three main cross streets along the corridor (West Shore Drive, Wooddale Avenue and Cornelia Drive). The proposed recommendation would be to retain exclusive left-turn lanes for the future road configuration. Protected left-turn lanes will provide added safety and efficiency at these intersections.

6. Pavement rehabilitation or reconstruction to lower noise of the roadway.

The current concrete roadway surface was installed in the early 1960's. As concrete roadways age, the panels shift and create bumps in the road surface. Considerable noise is generated from vehicle tires hitting these bulges in the panels that are typically at 20-foot intervals. Rehabilitating the existing concrete roadway by removing the surface entirely and replacing it with bituminous would lower the noise generated by vehicles traveling the roadway.

7. Explore possibilities for offering driveway turn arounds on private property.

Twenty-five of the 48 residents with driveways on West 70th Street have added pavement in their front yard to allow them to turn their cars around to access West 70th Street facing forward. This greatly reduces the difficulty of entering the traffic stream. Approximately another 17 of the residents potentially have enough room on their lot to create a driveway turn around. An additional 6 residents potentially do not have enough room for a driveway turn around. The City should be open to discussing options with these residents on how to help facilitate the construction of turn arounds on their property during the road rehabilitation project.

8. Roundabout to replace the “T” intersection of West 70th Street and Valley View Road.

The current intersection would be replaced with a roundabout, similar to the roundabouts located east of France Avenue. This roundabout would help anchor the east end of the corridor, provide a visual queue to motorists that they are entering a residential area and to manage vehicle speeds.

9. Enhance landscaping along the corridor.

There is the potential for improvements to the landscaping along the corridor. These improvements may be in the form of vegetation, lighting, decorative concrete, etc.

10. Further evaluation of roundabouts at the intersection of West 70th Street and Trunk Highway 100.

Roundabouts at the intersection of Highway 100 and West 70th Street will require additional study and engineering analysis to determine if the anticipated results of the installation would correspond with the goals of lowering speeds, reducing traffic volumes and increasing safety along the corridor.

11. Install improved signage directing through traffic to use routes other than West 70th Street.

The Origin-Destination (O-D) study indicated a portion of the traffic on West 70th Street was destined for locations east of the study corridor, such as Southdale and the City of Richfield. Placement of signage along portions of Highway 100 to direct traffic to use Highway 62 to access regions east of the study area will be explored further with Mn/DOT. Signage could also be placed to direct vehicles to use the Normandale frontage road to West 66th street.

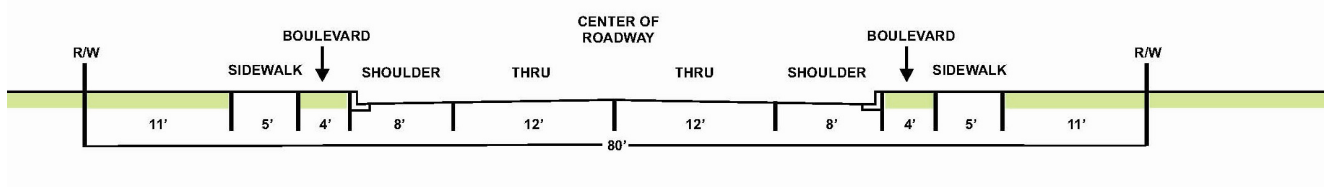
12. Promote additional lane geometrics on Highway 62 between Highway 100 and France Avenue (or beyond).

The addition of an eastbound lane may provide a more advantageous route for vehicles traveling from TH 100 to destinations east of France Avenue.

13. Proper planning for future redesign of West 76th Street corridor.

The creation of the East-West Connector Concept, as outlined in the 2008 comprehensive plan, would create a more beneficial east-west route for traffic, thus diverting vehicles off of West 70th Street.

The following cross section is a graphical representation of the corridor based on the above study recommendations. This section is shown at a mid-block location. At defined intersections a designated left turn lane would be included and the shoulders would be removed.



**STUDY RECOMMENDATION CROSS SECTION OF ROADWAY**

The table below adds the final recommendation to the “Option Comparison” table found in appendix E pages 5 and 6.

STUDY RECOMMENDATION									
Through Car Diversion	Traffic Speed Reduction	Entering from Driveway	Entering from Side-Streets	Change of Roadway Character	Pedestrian/Bike Safety	Vehicle Safety	Neighborhood Yard Preservation	On-Street Parking	Planning Level Daily Capacity
Deter motorists with additional delay at traffic signals.	Smart traffic signals can lower mainline speeds.	Traffic signals will increase gaps for backing/entering from driveways.	Pre-timed signalized intersections will increase gaps for traffic entering from side-street and driveways.	Maintains current roadway character. Additional enhancements will be considered.	Safer pedestrian crossings at intersections.	Reduced crash potential with left-turn lanes at intersections	No right-of-way needed.	On-street parking provided, except at intersections	14,000 to 17,000 vehicles per day

## **Implementation**

The Edina Transportation Commission outlined a phased implementation approach for the proposed roadway, intersections and traffic control improvements.

After each phase has been implemented a comparison to the initial study goals (lower speeds, reduced traffic volumes and increase safety) should be completed. Collection of traffic data and input from residents will help to shape following phases of implementation.

### **Phase I**

Phase I includes items 1 thru 7, 9, 11 and 12 in the above recommendation and would require the following known approvals:

- Approval of a Signal Justification Report by Mn/DOT State Aid for removal of the free right on north bound Hwy 100 to east bound West 70th Street.
- Approval of a school speed zone on West 70th Street adjacent to the Cornelia Elementary School.
- Approval of a Signal Justification Report by Mn/DOT State Aid for a new traffic signal at West Shore Drive.
- Documentation of acceptable levels of service with 20-year traffic volumes on a two-lane roadway to Mn/DOT State Aid.
- Communication and coordination with neighboring communities, Mn/DOT, Hennepin County and elected officials to advocate for a corridor commission to discuss, study, design and secure funding for improvements to Highway 62.

### **Phase II**

Phase II will be to implement items 8, 12 and 13 in the above recommendation and would require the following known approvals:

- Approval of an Intersection Control Evaluation (ICE) for Mn/DOT State Aid for the roundabout at West 70th Street and Valley View Road.
- Continued advocacy for a Highway 62 corridor commission if not yet created.
- Continued planning for West 76th Street (East-West Connector)

### Phase III

Phase III will be to complete a comprehensive evaluation of item 10 in the above recommendation to determine the feasibility of achieving the study goals and constructability. The following known approvals would be required:

- Approval of an Intersection Control Evaluation (ICE) for Mn/DOT for the roundabout at Highway 100 and West 70th Street.