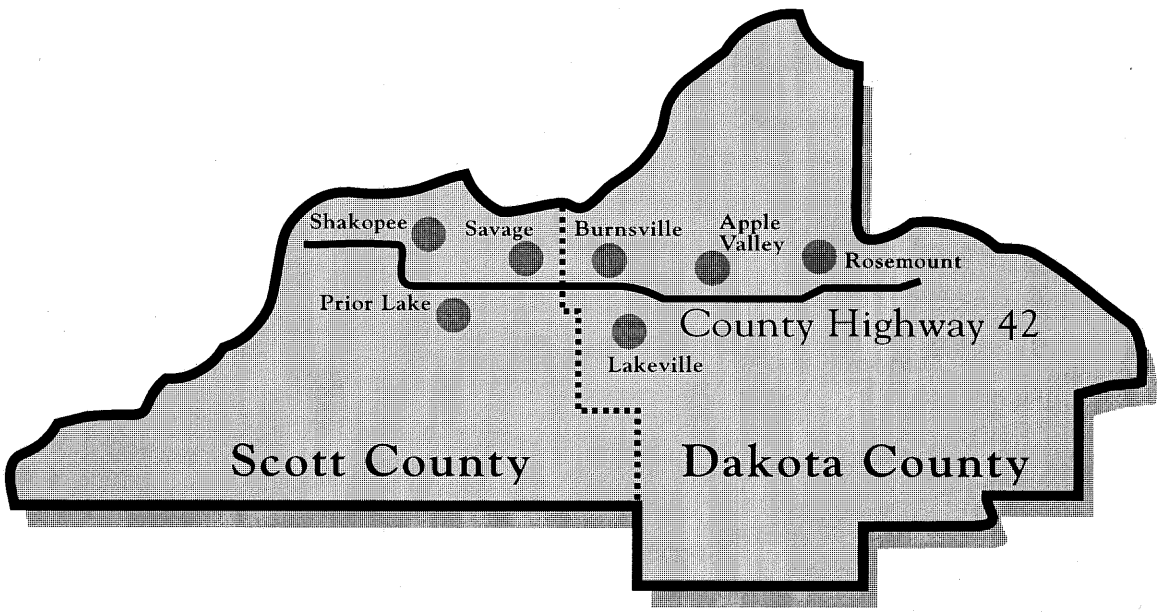
# *County Highway 42 Corridor Study*

# Final Report




February 1999

DCM GROUP BRW
A DAMES & MOORE GROUP COMPANY

# *County Highway 42 Corridor Study*

# FINAL REPORT

**In Partnership with:**

**Dakota County**
**Scott County**
**Mn/DOT**
**Metropolitan Council**
**Apple Valley**
**Burnsville**
**Lakeville**
**Prior Lake**
**Rosemount**
**Savage**
**Shakopee**
**Minnesota Valley Transit Authority**

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**700 Third Street South**
**Minneapolis, MN 55415**

**In Association with**
**Hoisington Koegler Group Inc.**

**February 1999**

# 1.0 EXECUTIVE SUMMARY

## INTRODUCTION (Chapter 2.0)

County Highway (CH) 42, in Dakota and Scott Counties, is basically a multi-lane urban arterial roadway that is an integral component of the Regional road system. CH 42 serves a variety of functions, including:

- it is the only continuous east-west roadway serving travel across central Dakota and northern Scott Counties
- it provides direct connections to all of the major north-south freeways in the area
- it provides access to a number of major regional commercial nodes and to a variety of retail land uses

CH 42 is functionally classified as a non-freeway principal arterial roadway. And given this classification, it is clear that the primary function of the roadway is to accommodate the movement of through traffic (traffic that is using the roadway to get to a destination somewhere outside of the corridor). However, the intensity of the adjacent commercial development has created a demand for land access and controlled intersections to facilitate ingress and egress. This level of commercial development has generated large traffic volumes that have resulted in concerns regarding traffic operations characteristics (average travel speed and intersection delay) and the frequency of access has resulted in concerns relative to motorist safety.

The conflict between the competing functions of CH 42 has created a dilemma for the road authorities responsible for operations and safety along the roadway and the local units of government who are responsible for regulating development. There is often pressure to provide high levels of accessibility to the roadway in order to support area business development. However, there is a wealth of research that indicates high levels of accessibility are directly related to inefficient traffic operations and increased crash rates.

Therefore, the purpose of this study is to take a comprehensive look at both traffic and land development characteristics in the corridor and actively involve area residents and representatives of the business community to better understand the key issues facing the corridor. Then, after reaching a general agreement with the study participants relative to the deficiencies in the corridor, develop an overall plan for the corridor that balances the need for mobility and safety with the need to maintain a reasonable level of accessibility to support area businesses and residents.

It should be noted that this document is intended to provide an overall blueprint to guide future planning for roadway improvements in the CH 42 Corridor. As individual projects are considered in the future for implementation by state, county or local jurisdictions, the results of this study will likely be supplemented with additional data and analysis to support detailed project planning and design as needed. During project development, new alternatives may be identified. However, all options being considered will be evaluated based on their ability to meet the identified mobility, safety and access goals. As specific projects move through the development process, opportunities will be provided for public and local agency review.

The sections that follow document the extensive public involvement process, the results of the analyses of both traffic and land use issues, the approach to systematically developing agreement regarding corridor deficiencies and potential solutions and finally the recommended blueprint for the Corridor.

## PUBLIC PARTICIPATION (Chapter 3.0)

The public participation program for the CH 42 Corridor Study involved all of the key agency and public stakeholders in the study area. The program included both a Technical and an Advisory Committee, Public Information Open Houses, newsletters, public outreach, a web page and many opportunities for public input.

As the Study progressed, the scope of work was expanded to include both additional technical analysis and an expanded Public Participation program. This resulted in not only more Technical and Advisory Committee meetings (for a total of 17 and 12, respectively) but also an iterative process where the results of each analysis was reviewed by the Committees prior to moving on to the next phase of the Study.

Participants on the Technical Committee included engineering and planning professionals from Dakota and Scott Counties; the Cities in the Study Area; the Metropolitan Council; Mn/DOT and the Minnesota Valley Transit Authority. Participants on the Advisory Committee included residents and representatives of the business community in Dakota and Scott Counties and the Cities in the Study Area. The role of these Committees was to provide input into the planning process and to provide two-way communication between the Project Team and the Committee participants various constituencies.

The participants on the Committees and their role in the Study process are illustrated in the following figures.

Additional opportunities for public participation included three Public Information Open Houses, presentations to various business and civic groups and the distribution of five newsletters.

## PRELIMINARY TECHNICAL ANALYSIS (Chapter 4.0)

The preliminary technical analysis consisted of identifying and then documenting the key results of investigations relative to six issue areas in a series of Technical Memorandums. The six issue areas and a summary of the key conclusions are documented below:

### Technical Memorandum #1 – Literature Search

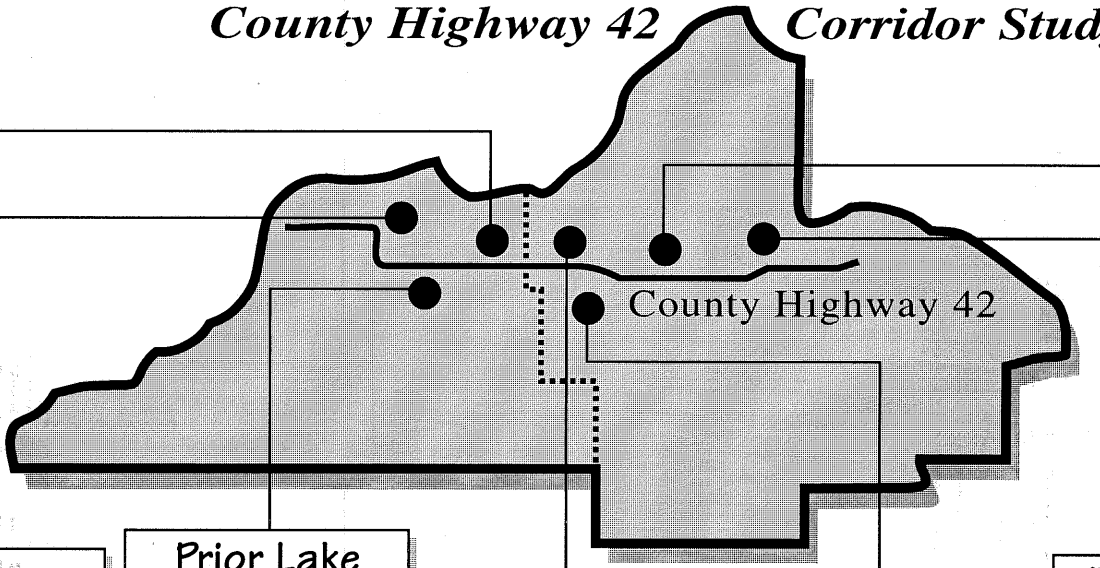
- Access management is a legitimate public safety issue and access management strategies can reduce crash frequencies and increase the operational efficiency of urban arterial roadways.

Public Part figure

# Public Participation

## Advisory and Technical Committee Representation

***County Highway 42 Corridor Study***




### Savage

**Technical Committee**
David Hutton

**Advisory Committee**
Don Egan, Resident
Ray Connelly, Business
Al Webb, Resident

### Apple Valley

**Technical Committee**
Rick Kelley
Dennis Miranowski (Alternate)

**Advisory Committee**
Karen Edgeton, Business
Dave Ericksmoen, Business
Liza Robson, Business
Bart Winkler, Business

### Shakopee

**Technical Committee**
Bruce Loney

**Advisory Committee**
Micheal Beard, Resident

### Prior Lake

**Technical Committee**
Greg Ilkka
Sue McDermott (Alternate)

**Advisory Committee**
Jim Stanton, Business
Bob Barsness, Resident
Herb Wensmann, Business

### Burnsville

**Technical Committee**
Chuck Ahl
Barb Anderson (Alternate)

**Advisory Committee**
Jim Dimond, Business
Tom Hanson, Business
Wendy Thompson, Business
Laurie Stern, Business
Anne Voels, Resident
John Young, Business

### Lakeville

**Technical Committee**
Keith Nelson

**Advisory Committee**
Karl Drotning, Business
Mary Liz Holberg, Resident

### Rosemount

**Technical Committee**
Bud Osmundson

**Advisory Committee**
Rich Carlson, Business
Mark DeBettignies, Planning Commission
Steve Kopel, Business
John Stefani, Resident
Jay Tentinger, Planning Commission

### Minnesota Valley Transit

**Technical Committee**
Beverley Miller

### Scott County

**Technical Committee**
Brad Larson
Scott Merkley (Alternate)

**Advisory Committee**
Jon Albinson, Business
Ron Ames, Business
Fred Corrigan, MN Transportation Alliance
Bill Rudnicki, SMSC

### Metropolitan Council

**Technical Committee**
Ann Braden

**Advisory Committee**
Elaine Bauer, Apple Valley Resident

### Minnesota Department of Transportation

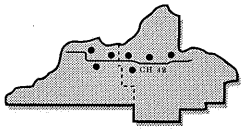
**Technical Committee**
Sherry Narusiewicz, Metro Division

**Advisory Committee**
Nancy Melvin, Metro Division

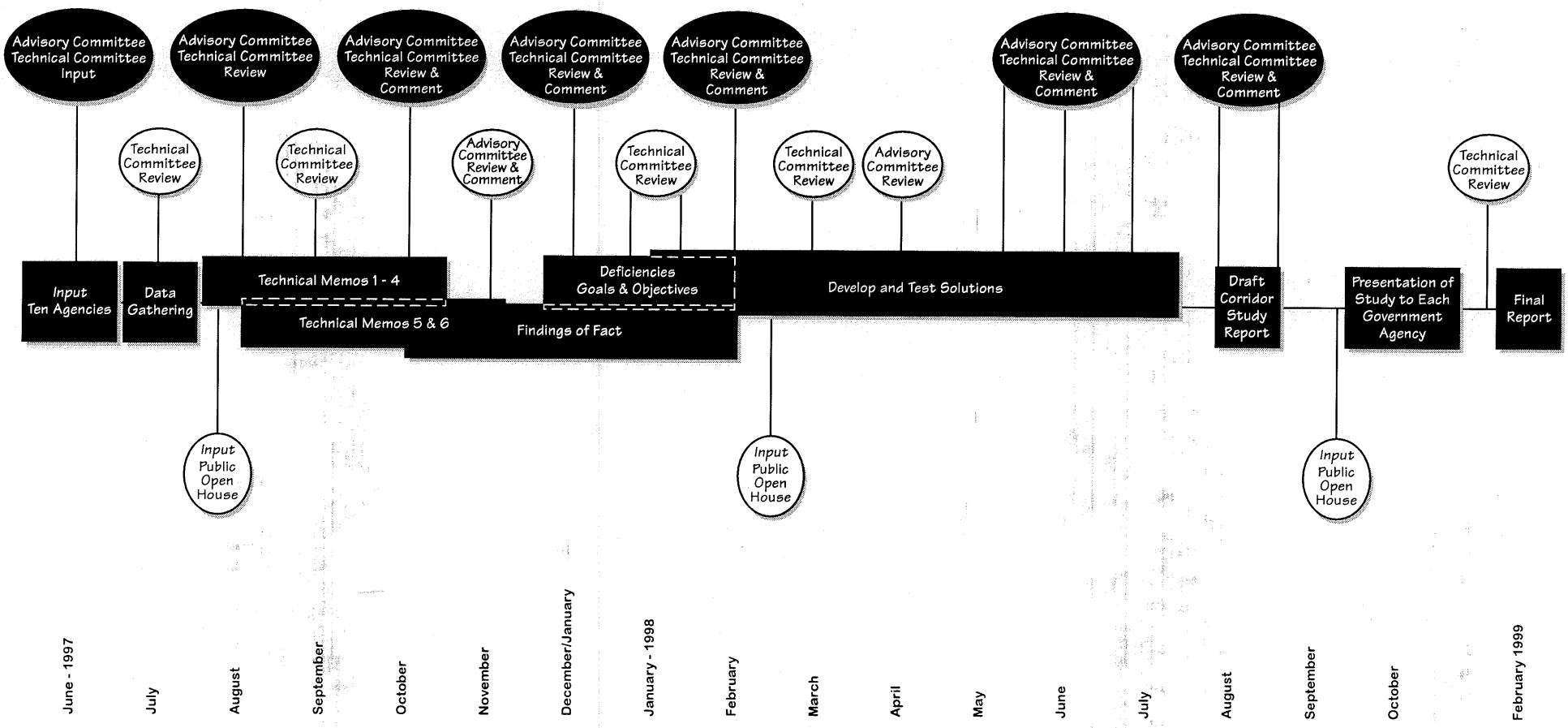
### Dakota County

**Technical Committee**
Pete Sorenson

**Advisory Committee**
Bruce Adams, Burnsville Resident
Jerry Brown, Apple Valley Resident
Rose Olson, MVTA Rider, Prior Lake Resident
Lloyd Rivers, Apple Valley Resident



# *County Highway 42 Corridor Study Process Diagram*



- A series of case studies of retail corridors where access management strategies have been implemented found impacts to some businesses, however, the overall business climate of the corridors was not adversely affected.

**Technical Memorandum #2- Land Use Analysis**

- All of the Cities in the Study Area rely on the Counties for addressing access management issues on County Highways.

- Access spacing guidelines must be flexible enough, particularly in commercial areas, to maintain a reasonable level of accessibility in order to support area businesses.

- The Metropolitan Council and Mn/DOT suggested that the mobility objective should be based on maintaining an average speed of 40 miles per hour (mph) across the corridor. This infers that some segments of the Corridor will be expected to operate at speeds greater than 40 mph (basically the more rural areas at the ends of the Corridor) and the more densely developed areas (primarily in Apple Valley and Burnsville) will be expected to operate at speeds in the range of 20 to 30 mph.

- Mn/DOT and the Metropolitan Council acknowledged that flexibility in the application of access spacing guidelines would likely be required in densely developed areas. However, they also encouraged the adoption of an overall blueprint for the corridor in order to guide future planning of roadway improvements, that could be implemented in conjunction with development or redevelopment projects.

**Technical Memorandum #3 – Functional Classification**

- CH 42 is functionally classified as a non-freeway principal arterial roadway and is on the National Highway System. If CH 42 were to be reclassified as a minor arterial, a potential source of federal highway funds would be lost.

- A principal arterial roadway in the CH 42 Corridor is consistent with regional policies and guidelines.

**Technical Memorandum #4 – Vehicle Trace Survey**

- The average trip length along CH 42 is greater than three miles and most trips along the corridor are considered through traffic (traffic that is using the roadway to get to a destination somewhere outside of the corridor).

**Technical Memorandum #5 – Traffic Forecasting**

- Current local land use plans suggest that substantial growth is expected to occur in the travel shed of the CH 42 corridor and, as a result, traffic demand is expected to increase by a minimum of 20% to more than 100%.

**Technical Memorandum #6 – Traffic Engineering Analysis**

- The CH 42 corridor experiences a moderate level of peak period congestion under existing conditions, and the projected growth in traffic demand will result in more severe and extensive congestion under the Year 2020 No-Build Scenario.

## SYSTEMATIC DEVELOPMENT OF SOLUTIONS (Chapter 5.0)

During the initial information gathering, public participation and analytical steps in the CH 42 Corridor Study, it became apparent that there was no consensus as to the magnitude of the problems facing the corridor, and therefore no agreement as to how to address corridor issues and develop a corridor blueprint. As a result, the Project Team created and initiated an interactive and iterative process to systematically develop a general description of potential solutions. The process involved documenting the following issues:

- Findings of Fact
- Goals and Objectives
- Identification and Prioritization of Deficiencies
- General Description of Potential Solutions

The results of each step were submitted to the Committees for review and discussion and then revised as necessary prior to moving on the next step in the process. This process generated general agreement with the results of each effort on the part of both the Technical and Advisory Committees.

The key Findings of Fact were documented in the six Technical Memorandums. The basic Goal involves improving traffic operations of CH 42 as a regional roadway in balance with existing and planned development. Objectives were identified dealing with safety, economic development/land use, supporting roadways, access and mobility. The general description of potential solutions included the following basic items:

**Safety**

- Provide additional turning lanes.
- Implement turn restrictions/median modifications.

**Economic Development/Land Use**

- Identify more compatible land use patterns.
- Develop model land use and zoning regulations.

**Supporting Roadways**

- Extend existing roadways that are parallel to CH 42 in order to provide new connections among neighborhoods, commercial areas and communities.
- Identify a search area for a new east-west principal arterial roadway south of CH 42.
- Provide new connections and directional signage in order to divert through and local traffic to available alternative routes.

**Access**

- Develop land use-based guidelines that include a hierarchy of access, i.e.:
  private driveways connect to local streets and collectors,
  collectors connect to minor arterials,
  minor arterials connect to principal arterials.
- Develop a formal access variance process consistent in both Dakota and Scott Counties.

**Mobility**

- Increase capacity by providing additional auxiliary turning lanes and/or through lanes
- Increase capacity by improving the efficiency of the existing roadway through access modification/limitations and improved signal coordination.

## DETAILED TRAFFIC OPERATIONS ANALYSIS (Chapter 6.0)

The detailed technical analysis of future (Year 2020) traffic operations considered eight different scenarios that included various combinations of signal phasing, roadway geometry, signal removal and supporting roadway improvements. Each scenario was modeled using traffic simulation software. Development of the recommended mitigation scenario was an iterative process, with each scenario building on the scenario that preceded it. The analytical process is illustrated in Figure 6-1, and shows how the analysis was structured and how each scenario relates to the others. The basic roadway scenarios can be described as follows:

- **No-Build Scenario –** Includes traffic signal build out and committed geometry improvements.

- **Supporting Roadway Scenario –** Includes adjusted traffic forecasts due to diversions associated with implementing improvements to supporting roadways.

- **Scenario 1 –** Includes Low Cost Improvements generally consisting of traffic signal modifications and the addition of auxiliary lanes on the minor street approaches to signalized intersection.

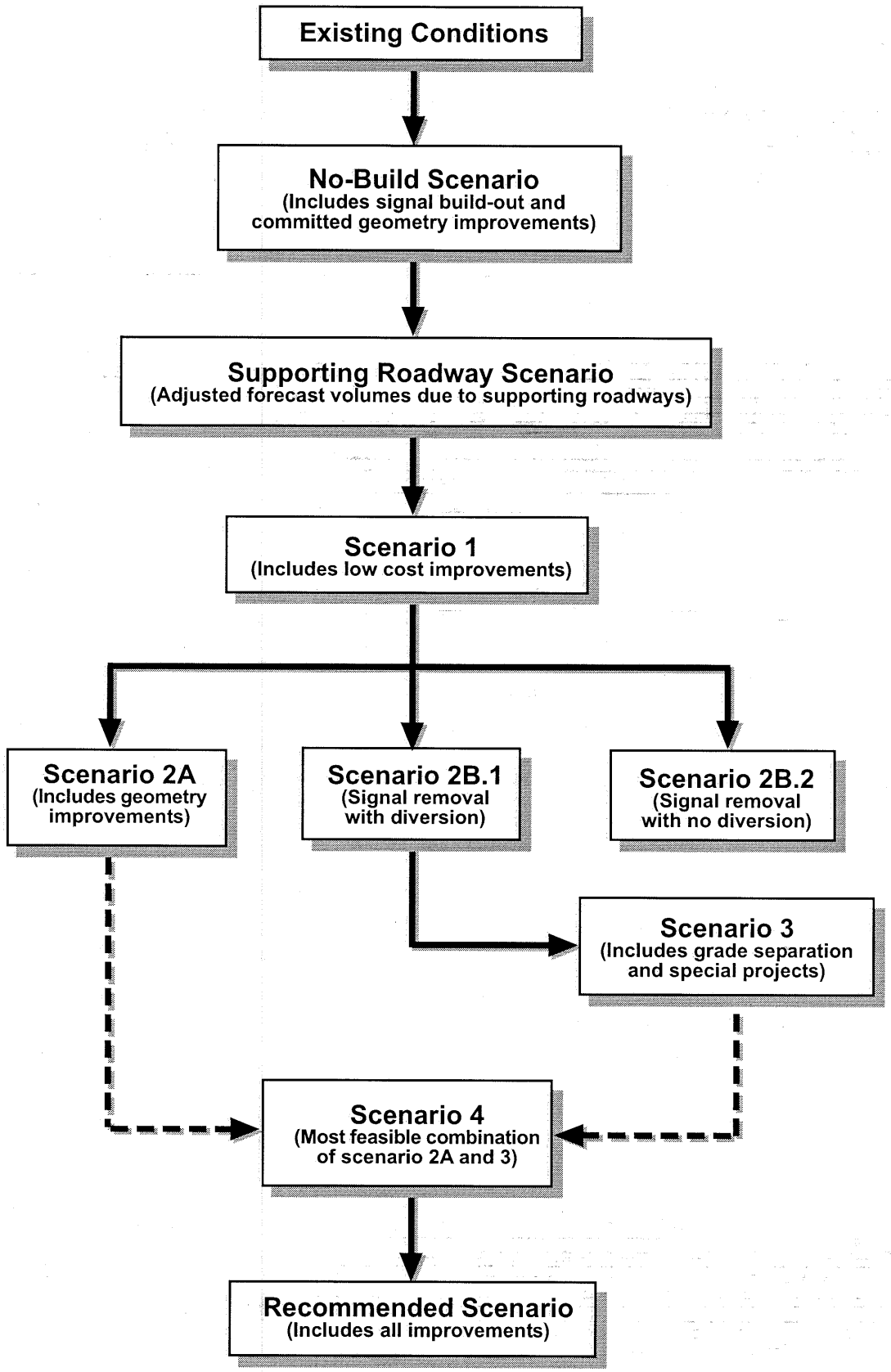
- **Scenario 2 –** Includes Moderate Cost Improvements generally consisting of CH 42 geometric improvements or the removal of traffic signals to achieve optimum traffic signal efficiency.

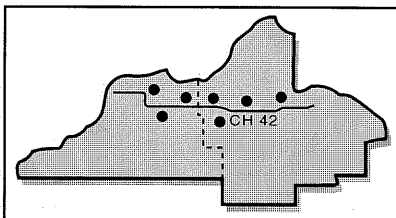
- **Scenario 3 –** Includes High Cost Improvements generally consisting of grade separated interchanges at the higher volume intersections.

- **Scenario 4 –** Includes the Supporting Roadways, the Low Cost Improvements and the most feasible combination of Moderate and High Cost Improvements.

- **Recommended Scenario –** Includes all Recommended Improvements.

Fig 6-1 Tech Anal Process




# CH 42 Corridor Study

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Figure 6-1

**Technical Analysis Process**

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The key measures of effectiveness for traffic operations are either intersection delay or arterial speed. The results of the operations analyses are reported as the Level of Service (LOS), with letter grades A through F. The letter A represents conditions with no congestion, C represents average levels of congestion and F represents severe congestion. For the purposes of this Study the LOS D/E boundary represents the on set of unacceptable congestion.

The results of the operations analyses are documented in Tables 6-4 and 6-5 and summarized below:

- There is little recurring congestion today and all of the key intersections and roadway segments meet the delay, speed and LOS objectives for the Corridor.

- The 2020 No-Build Scenario results in significant congestion along major segments of the Corridor.

- The addition of the Supporting Roadway System would improve conditions slightly, but not to the point where delay, speed and LOS objectives would be achieved.

- The addition of Low Cost Improvements would improve conditions slightly, but not to the point where delay, speed and LOS objectives would be achieved.

- The Moderate Cost geometric improvements would improve conditions to the point where all LOS objectives are achieved, with one exception, the intersection of CH 42 and CH 23 (Cedar Avenue).

- The Moderate Cost signal removals provide about the same LOS as the Low Cost scenario, and therefore do not achieve the LOS objective.

- The High Cost Improvements would achieve the LOS objective at all of the locations where they were implemented.

- The Recommended Mitigation Scenario meets all of the delay, speed and LOS objectives.

## ENVIRONMENTAL OVERVIEW (Chapter 7.0)

A preliminary review was conducted of cultural, natural and community resources in the CH 42 Corridor. The purpose of this review was to document know resources in a one-half mile wide area centered on CH 42 and to make a preliminary assessment of the potential for environmental impacts associated with the implementation of any of the recommended roadway improvements. The results of this environmental overview are documented below:

- **Cultural Resources –** A review of the Minnesota Standing Structure and Archaeological Site database found a total of 51 properties in the CH 42 Corridor. However, it was determined that the various roadway improvements would have a very low probability of impacting any

# Table 6-4
# PM Peak Hour Intersection Level-of-Service
*County Highway 42 Corridor Study*

| CORRIDOR INTERSECTION | 1996 EXISTING CONDITIONS | | 2020 NO-BUILD SCENARIO[2] | | SUPPORTING ROADWAY SCENARIO[3] | | 2020 LOW COST MITIGATION[4] | | 2020 MODERATE COST GEOMETRY[5] | | 2020 SIGNAL REMOVAL DIVERSION[6] | | 2020 SIGNAL REMOVAL NO DIVERSION[7] | | 2020 HIGH COST MITIGATION[8] | | 2020 COMBINED MITIGATION | | PRELIMINARY RECOMMENDED MITIGATION | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS | DELAY[1] (sec/veh) | LOS |
| CH 17 / CR 78 | 14 | B | 22 | C | 20 | C | 13 | B | 13 | B | 12 | B | 12 | B | | | 12 | B | 12 | B |
| CR 83 / CR 42 | 43 | E | 71 | F | 69 | F | 27 | D | 20 | C | 27 | D | 27 | D | | | 20 | C | 20 | C |
| CH 21 / CH 42 | 6 | B | 30 | D | 22 | C | 23 | C | 24 | C | 22 | C | 23 | C | | | 23 | C | 23 | C |
| CH 18 / CH 42 | 16 | C | 22 | C | 19 | C | 24 | C | 24 | C | 24 | C | 24 | C | | | 24 | C | 24 | C |
| TH 13 / CH 42 | 26 | D | 81 | F | 33 | D | 33 | D | 23 | C | 31 | D | 31 | D | | | 23 | C | 23 | C |
| CH 27 / CH 42 | 12 | B | 19 | C | 18 | C | 18 | C | 17 | C | 17 | C | 18 | C | | | 17 | C | 17 | C |
| Vernon / CH 42 | 13 | B | 14 | B | 14 | B | 4 | A | 4 | A | 4 | A | 4 | A | | | 4 | A | 4 | A |
| Ottawa / CH 42 | 12 | B | 13 | B | 13 | B | 8 | B | 8 | B | 6 | B | 9 | B | | | 8 | B | 6 | B |
| CR 31 / CH 42 | 13 | B | 19 | C | 16 | C | 15 | C | 16 | C | 22 | C | 16 | C | 21 | C | 21 | C | 25 | D |
| Huntington / CH 42 | 9 | B | 10 | B | 10 | B | 10 | B | 8 | B | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Southcross / CH 42 | --- | --- | 10 | B | 9 | B | 8 | B | 9 | B | --- | --- | --- | --- | --- | --- | --- | --- | 22 | C |
| CH 5 / CH 42 | 38 | D | 149 | F | 102 | F | 99 | F | 23 | C | 136 | F | 101 | F | 13 | B | 33 | D | 29 | D |
| Aldrich / CH 42 | 22 | C | 32 | D | 29 | D | 29 | D | 23 | C | 35 | D | 25 | D | --- | --- | --- | --- | --- | --- |
| I-35W W Ramp / CH 42 | 27 | D | 95 | F | 65 | F | 91 | F | 30 | D | 91 | F | 92 | F | 35 | D | 35 | D | 24 | C |
| I-35W E Ramp / CH 42 | 4 | A | 5 | B | 4 | A | 7 | B | 3 | A | 4 | A | 5 | B | --- | --- | --- | --- | 6 | B |
| Nicollet / CH 42 | 26 | D | 35 | D | 26 | D | 23 | C | 20 | C | 25 | D | 23 | D | 28 | D | 28 | D | 32 | D |
| I-35E W Ramp / CH 42 | 15 | B | 119 | F | 102 | F | 104 | F | 22 | C | 104 | F | 104 | F | 24 | C | 23 | C | 23 | C |
| I-35E E Ramp / CH 42 | 13 | B | 11 | B | 9 | B | 11 | B | 10 | B | 18 | C | 10 | B | | | | | | |
| Portland / CH 42 | 13 | B | 29 | D | 23 | C | 19 | C | 11 | B | 41 | E | 17 | C | 31 | D | 29 | D | 23 | C |
| CR 11 / CH 42 | 21 | C | 129 | F | 108 | F | 65 | F | 20 | C | 61 | F | 62 | F | 61 | F | 25 | D | 20 | C |
| Southcross / CH 42 | 13 | B | 14 | B | 10 | B | 8 | B | 8 | B | 11 | B | 16 | C | 11 | B | 15 | C | 14 | B |
| Garden View / CH 42 | 20 | C | 124 | F | 120 | F | 24 | C | 13 | B | 32 | D | 27 | D | 30 | D | 29 | D | 29 | D |
| Pennock / CH 42 | 17 | C | 39 | D | 34 | D | 30 | D | 21 | C | 34 | D | 30 | D | 29 | D | 30 | D | 30 | D |
| CH 23 / CH 42 | 28 | D | 179 | F | 160 | F | 160 | F | 143 | F | 164 | F | 179 | F | 32 | D | 27 | D | 27 | D |
| Galaxie / CH 42 | 22 | C | 156 | F | 78 | F | 72 | F | 24 | C | 110 | F | 68 | F | 35 | D | 25 | D | 25 | D |
| CH 31 / CH 42 | 22 | C | 135 | F | 96 | F | 97 | F | 25 | D | 97 | F | 96 | F | 11 | B | 23 | C | 23 | C |
| Chippendale / CH 42 | 16 | C | 153 | F | 149 | F | 23 | C | 28 | D | 24 | C | 24 | C | | | 25 | D | 25 | D |
| TH 3 / CH 42 | 15 | C | 110 | F | 104 | F | 27 | D | 21 | C | 27 | C | 27 | D | | | 20 | C | 20 | C |
| TH 52 W Ramp / CH 42 | 1 | A | 18 | C | 23 | C | 22 | C | 14 | B | 22 | C | 22 | C | | | 8 | B | 8 | B |
| TH 52 E Ramp / CH 42 | 5 | A | 13 | B | 13 | B | 14 | B | 11 | B | 14 | B | 14 | B | | | | | | |

[1]Average vehicular delay at intersection measured in seconds per vehicle.

[2]2020 No-Build volumes and geometry.

[3]2020 Supporting Roadway Scenario volumes and No-Build geometry.

[4]Low Cost Mitigations to Supporting Roadway Scenario (SRS + LOW).

[5]Moderate Cost Geometry Mitigations to Low Cost Scenario (SRS + LOW + MODGEO).

[6]Moderate Cost Signal Removal Mitigations to Low Cost Scenario with volumes diverted to adjacent signals (SRS + LOW + MODSIG HIGH).

[7]Moderate Cost Signal Removal Mitigations to Low Cost Scenario with no volume diversions (SRS + LOW + MODSIG LOW).

[8]High Cost Mitigations to Signal Removal (with diversions) Scenario (SRS + LOW + MODSIG HIGH + HIGH).

# Table 6-5
## Arterial Segment Level-of-Service
*County Highway 42 Corridor Study*

| CORRIDOR SEGMENT | SPEED OBJECTIVE (mph) | 1996 EXISTING CONDITIONS SPEED[1] (mph) | LOS | 2020 NO-BUILD SCENARIO[2] SPEED[1] (mph) | LOS | SUPPORTING ROADWAY SCENARIO[3] SPEED[1] (mph) | LOS | 2020 LOW COST MITIGATION[4] SPEED[1] (mph) | LOS | 2020 MODERATE COST GEOMETRY[5] SPEED[1] (mph) | LOS | 2020 SIGNAL REMOVAL DIVERSION[6] SPEED[1] (mph) | LOS | 2020 SIGNAL REMOVAL NO DIVERSION[7] SPEED[1] (mph) | LOS | 2020 HIGH COST MITIGATION[8] SPEED[1] (mph) | LOS | 2020 COMBINED MITIGATION SPEED[1] (mph) | LOS | PRELIMINARY RECOMMENDED MITIGATION SPEED[1] (mph) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TH 169 to CH 17 | 50 | 50 | A | 44 | A | 44 | A | 44 | A | 46 | A | 45 | A | 45 | A | | | 46 | A | 46 | A |
| 2 CR 78 to CR 42 | 50 | 51 | A | 42 | A | 44 | A | 48 | A | 48 | A | 48 | A | 48 | A | | | 48 | A | 48 | A |
| 3 CH 17 to CR 83 | 50 | 40 | A | 39 | A | 39 | A | 41 | A | 42 | A | 42 | A | 42 | A | | | 43 | A | 43 | A |
| 4 CR 83 to CH 21 | 50 | 40 | A | 38 | A | 40 | A | 45 | A | 45 | A | 45 | A | 45 | A | | | 45 | A | 45 | A |
| 5 CH 21 to TH 13 | 40 | 46 | A | 29 | B | 35 | A | 40 | A | 42 | A | 42 | A | 42 | A | | | 42 | A | 42 | A |
| 6 TH 13 to CH 27 | 40 | 37 | A | 30 | B | 32 | B | 37 | A | 40 | A | 38 | A | 38 | A | | | 40 | A | 40 | A |
| 7 CH 27 to CR 31 | 30 | 40 | A | 35 | A | 37 | A | 41 | A | 40 | A | 40 | A | 40 | A | | | 40 | A | 40 | A |
| 8 CR 31 to Irving | 30 | 29 | B | 9 | F | 14 | E | 20 | D | 28 | B | 18 | D | 21 | D | 33 | B | 29 | B | 31 | B |
| 9 Irving to I-35W | 20 | 23 | C | 11 | F | 11 | F | 12 | F | 18 | D | 12 | F | 13 | E | 20 | D | 22 | C | 26 | C |
| 10 I-35W to I-35E | 20 | 19 | D | 8 | F | 9 | F | 9 | F | 18 | D | 9 | F | 9 | F | 18 | D | 18 | D | 17 | D |
| 11 I-35E to Southcross | 30 | 30 | B | 14 | E | 14 | E | 22 | C | 31 | B | 22 | C | 23 | C | 22 | C | 26 | C | 28 | B |
| 12 Southcross to Pennock | 30 | 31 | B | 15 | E | 17 | D | 29 | B | 32 | B | 30 | B | 32 | B | 33 | B | 33 | B | 33 | B |
| 13 Pennock to CH 31 | 30 | 31 | B | 7 | F | 8 | F | 10 | F | 20 | D | 10 | F | 11 | F | 25 | C | 30 | B | 30 | B |
| 14 CH 31 to TH 3 | 40 | 37 | A | 13 | E | 16 | E | 34 | B | 34 | B | 33 | B | 34 | B | | | 34 | B | 34 | B |
| 15 TH 3 to TH 52 | 50 | 52 | A | 41 | A | 43 | A | 46 | A | 49 | A | 46 | A | 46 | A | | | 49 | A | 49 | A |
| 16 TH 52 to TH 55 | 50 | 55 | A | 44 | A | 53 | A | 53 | A | 53 | A | 53 | A | 53 | A | | | 53 | A | 53 | A |
| **Weighted Average** | **37** | **37** | | **22** | | **26** | | **32** | | **36** | | **32** | | **32** | | **NA** | | **37** | | **37** | |

[1]Average two-way peak-hour travel speed on segment, including delay and stops.

[2]2020 No-Build volumes and geometry.

[3]2020 Supporting Roadway Scenario volumes and No-Build geometry.

[4]Low Cost Mitigations to Supporting Roadway Scenario (SRS + LOW).

[5]Moderate Cost Geometry Mitigations to Low Cost Scenario (SRS + LOW + MODGEO).

[6]Moderate Cost Signal Removal Mitigations to Low Cost Scenario with volumes diverted to adjacent signals (SRS + LOW + MODSIG HIGH).

[7]Moderate Cost Signal Removal Mitigations to Low Cost Scenario with no volume diversions (SRS + LOW + MODSIG LOW).

[8]High Cost Mitigations to Signal Removal (with diversions) Scenario (SRS + LOW + MODSIG HIGH + HIGH).

of these properties.

- **Natural Resources –** A variety of natural resource databases were reviewed in order to document the presence of floodplains, farmlands, wetlands and any other unique environmental features along the study area which is defined as the land within one-quarter mile either side of CH 42 (supporting roadway mitigation options were not included) . The review found a number of areas where the recommended roadway improvements would likely impact floodplains, prime farmlands and/or wetlands. These areas will require further and more detailed study, in the future, during the project development phase of any of the individual roadway improvements. However, at this time it appears that any potential impact could be adequately mitigated and therefore would not prevent the implementation of any of the roadway improvements.

- **Community Resources –** A review of county maps one-quarter mile on either side of the CH 42 Corridor indicated that 40 community resources (public buildings, parks, churches, etc.) were identified adjacent or proximate to CH 42. There may be the potential to impact some community resources with the implementation of some of the mitigation measures. Therefore, subsequent studies for individual projects will need to address the details of any potential impacts and mitigations.

- **Air Quality –** Air quality is primarily a function of the level of traffic operations in a roadway corridor. Therefore, if traffic volumes increase as forecast and no improvements are implemented, congestion could reach sever levels which would result in the degradation of air quality and concentrations of carbon monoxide approaching air quality standards. Implementation of the recommended roadway improvements would resolve any potential air quality concerns.

- **Land Use –** The potential impacts on both existing and future land uses associated with the various roadway improvement scenarios was assessed. The assessment was based on information gained through a series of meetings with the planning staffs in each of the cities in the corridor, interaction with members of the Advisory Committee, a review of the case law regarding the legal definition of compensable right of access, recent research studies and a thorough in field review of the corridor. The key conclusions of the assessment are as follows:

  - Doing nothing is not an acceptable alternative and would have a significant adverse affect on the overall business vitality of the corridor.
  - The low cost roadway improvements (basically signal modifications and cross street auxiliary lanes) would have minimal impact on land uses.
  - The moderate cost roadway improvements that revise access to and from CH 42 (the removal of private driveways and the conversion of full access to partial access intersections) have the potential to favorably affect mobility but could have a greater adverse impact on some specific businesses that are not destination oriented. The changes in access should not affect the overall business vitality of the CH 42 corridor and could be mitigated if they are timed to coincide with development and/or redevelopment projects

and if new connections are provided (via new frontage roads, backage roads or easements across existing parking areas) to the remaining full access intersections.

## RECOMMENDED CORRIDOR MITIGATION STRATEGIES (Chapter 8.0)

The blueprint that identifies a plan for the future of CH 42 addresses the key land use and transportation deficiencies that were documented during the study process. The land use recommendations primarily deal with the development process and the interaction with the supporting transportation infrastructure. The transportation recommendations are multi-modal in nature but focus on functional classification, access spacing and a variety of roadway geometry and traffic signal system improvements. The key elements of the Recommended Plan are summarized below:

- **Land Use**

  - Counties and Cities should amend their comprehensive plans to provide the policy framework for access management, reductions in travel demand and to establish supporting roadway connections.

  - Counties and Cities should develop a model land use and access management ordinance to be implemented by the Cities for access management and reductions in travel demand.

  - Dakota and Scott Counties should continue to cooperate and a corridor committee should be formed that has advisory status with the two County Boards.

  - The establishment of Critical Principal Arterial Corridor legislation should be initiated which would establish a Corridor Commission with the power to coordinate the development of critical corridors, plan for improvements and generate funding from within the corridor.

  - A South Metro Corridor Coalition should be established.

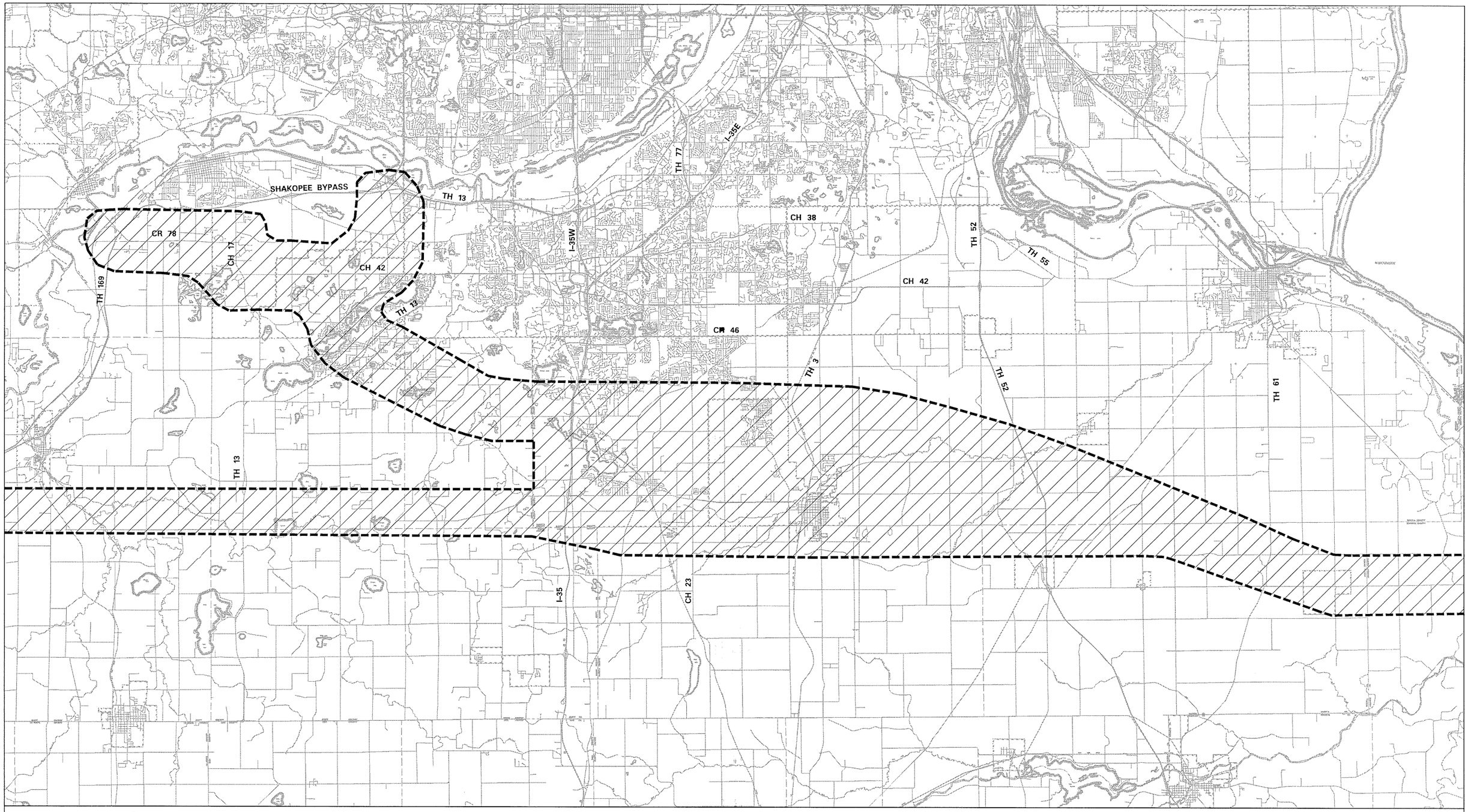
  - Formal variance procedures for access management should be established.

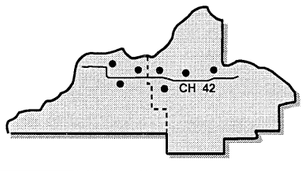
- **Functional Classification**

  - The present Non-Freeway Principal Arterial functional classification of CH 42 should be maintained.

  - Planning efforts should be initiated for developing an alignment and preserving the right-of-way for a new Principal Arterial roadway approximately 4 to 6 miles south of CH 42. (See Figure 8-1.)

Figure 8-1




# CH 42 Corridor Study

N

0 15,000 30,000 FEET

0 7500 15,000 METERS

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Figure 8-1

**Potential Future Principal Arterial Search Areas**

R:\33970\33970005\LAYOUT\FUTURE1.DGN 2-19-99

- Consideration should be given to designating all of the Supporting Roadways as A-Minor Arterials.

- **Access Spacing**

  - The Counties and Cities should adopt consistent access spacing guidelines for the entire corridor that have the following major provisions:

    1. a target of one-half mile average spacing between full access signalized intersections
    2. partial access (left in and /or right in/out) at intermediate locations
    3. a hierarchy of access (driveways connecting to local streets and collectors, collectors to minor arterials and minor arterials to principal arterials
    4. formalized variance process
    5. joint powers variance review committee

  - **The Counties should also adopt a prioritized plan for revising existing access points, consistent with the recommended guidelines, that is coordinated with the development/redevelopment of individual parcels and with the implementation of alternative access to the local/supporting street system.**

- **Railroad Crossings**

  - The Counties and Cities should adopt a policy requiring that all railroad crossings be grade separated.

- **Transit**

  - The Counties and Cities should consult with the transit authorities on all major infrastructure improvements prior to plan completion. Early in the project development process, any needed transit improvements (bus pullouts, corner radii improvements, shoulder strengthening, etc.) should be identified.

- **Pedestrians/Bicycles**

  - The Counties and Cities should adopt a policy to promote pedestrian/bicycle usage in the CH 42 corridor by providing a continuous system of trails parallel to the roadway and a series of strategically placed grade separated crossings of the corridor.

- **Roadway Improvements**

  - An enhanced system of supporting roadways should be provided in order to improve operations in the CH 42 corridor. By providing an adequate system of roads for the area, local trips will not need to access the regional roadway system. (See Figure 8-2.)

Figure 8-2

- An enhanced system of local streets should be provided in order to reduce the need for direct driveway access to CH 42. Existing commercial, institutional and residential driveways should be realigned to connect with the enhanced local street system as opportunities arise.

- Full access signalized intersections should be provided at an average spacing of approximately one-half mile. (It should be noted that new traffic signals should be installed only after a detailed traffic engineering analysis suggests that the installation would be consistent with the guidelines in the Minnesota Manual on Uniform Traffic Control Devices.)

- Present intermediate full access intersections (Figure 6-5) should be converted to partial access intersections based on one-quarter mile spacing for the three-quarter access design (Figure 6-6 or 6-7) and one-eight mile spacing for the right in/out design (Figure 6-8). (It should be noted that if all of the recommended access revisions are implemented, the total number of accesses in the corridor would be reduced by less than 10 percent, from 406 to 370, and that the average access density would decrease by only one access per mile. See Table 8-3.)

- A minimum of two lanes should be provided on all minor street approaches to signalized intersections.

- Auxiliary lanes should be provided at signalized intersections, where feasible, including right-turn lanes and single or dual left-turn lanes.

- Revised traffic signal operations should be considered, including the extension of coordinated systems, the elimination of split phasing, the addition of right-turn overlaps and the addition of exclusive/permitted phases where feasible.

- The existing six-lane segments of CH 42 should be extended to the west through the intersection at Burnsville Parkway and to the east through the CR 11 intersection in order to accommodate future traffic volumes.

- The existing four-lane segment of CH 42 between CH 23 (Cedar Avenue) and CH 31 (Pilot Knob Road) should be widened to six-lanes in order to accommodate future traffic volumes.

- Consideration should be given to revising the existing interchange at I-35E and providing new grade separations at Aldrich Avenue, CH 23 and at the railroad tracks east of TH 3.

CONNELLY PARKWAY EXTENSION FROM CH 27 TO CH 17

CH 21 EXTENSION FROM CH 42 TO CH 18

CH 38 EXTENSION FROM CH 5 TO BURNSVILLE PARKWAY & UPGRADE SOUTHCROSS DRIVE

CH 38 / I–35W HALF–DIAMOND INTERCHANGE

SHAKOPEE BYPASS

TH 169

TH 13

I–35W

CH 38

TH 52

TH 55

CH 42

CH 42

TH 13

TH 169

CR 46

TH 13

TH 13 UPGRADE TO FREEWAY BETWEEN I–35W AND TH 169

140TH ST EXTENSION EAST FROM SHANNON PKWY TO CH 71

CH 42 CONNECTION TO CR 78 AT CH 17

150TH ST /CRYSTAL LAKE ROAD EXTENSION WEST TO CR 74

147TH ST EXTENSION – GALAXIE RD TO CH 31
153RD ST EXTENSION – GALAXIE RD TO DODD RD.

TH 52

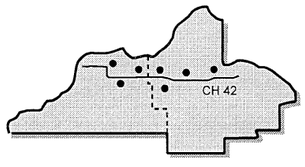
TH 55 REROUTE SOUTH ON TH 52 AND EAST ON CH 42, TURNBACK COURTHOTHE BLVD.

CR 46 EXTENSION FROM CH 5 TO CH 27

I–35

**Legend:**

- CH 42 Corridor
- Supporting Roadways Recommended for Short–Term Implementation
- Supporting Roadways Recommended for Long–Term Implementation
- Supporting Roadways Not Recommended for Implementation




# CH 42 Corridor Study

N

0 10,000 20,000 FEET

0 5000 10,000 METERS

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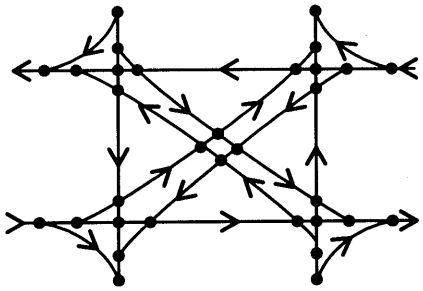
Figure 8-2

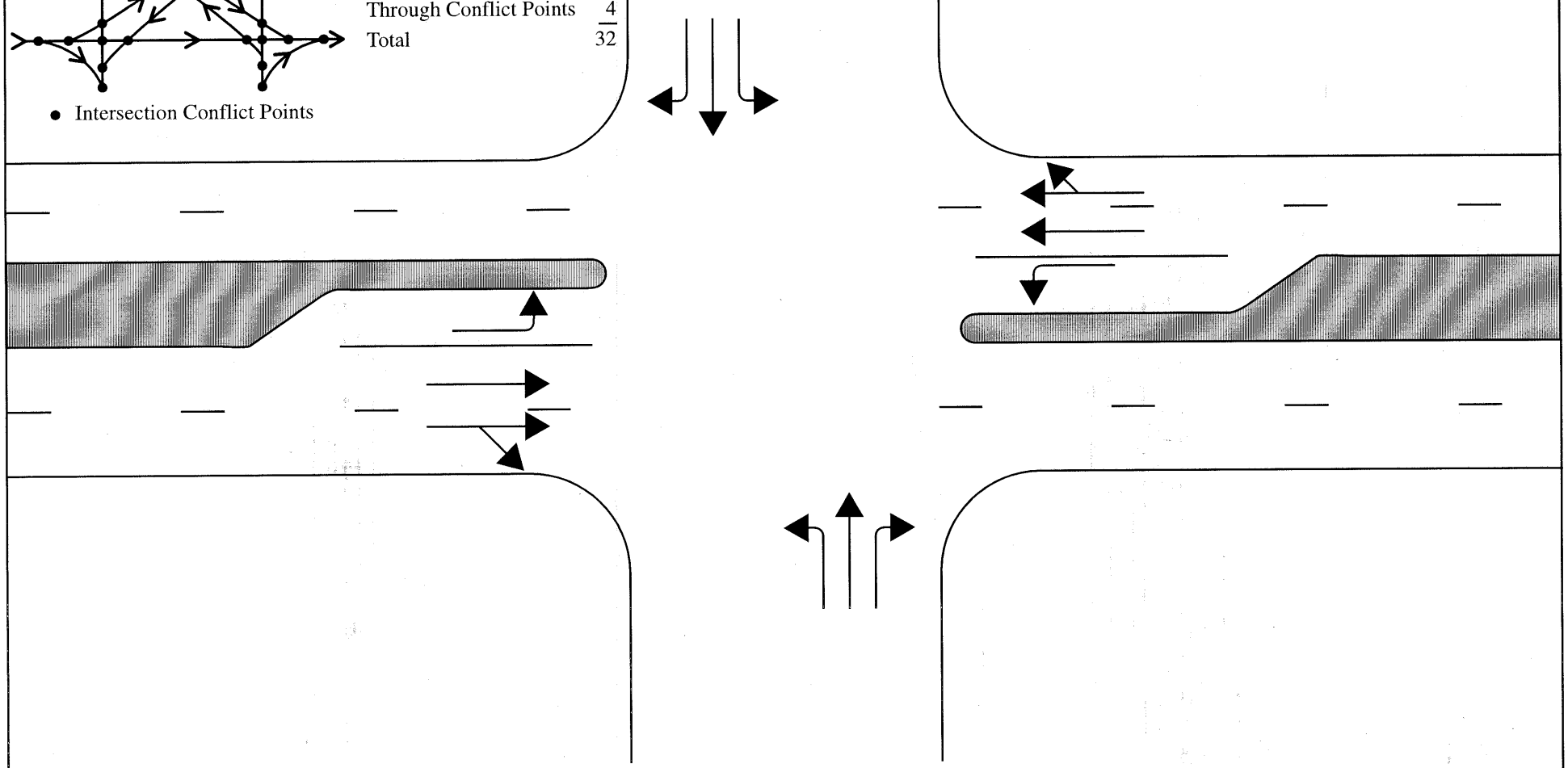
## Recommended Supporting Roadway Implementation

R:\33970\33970005\LAYOUT\ALL-SUPP.DGN 2-19-99



| | |
|---|---|
| Merging Conflict Points | 8 |
| Diverging Conflict Points | 8 |
| Turning Conflict Points | 12 |
| Through Conflict Points | 4 |
| Total | 32 |

• Intersection Conflict Points



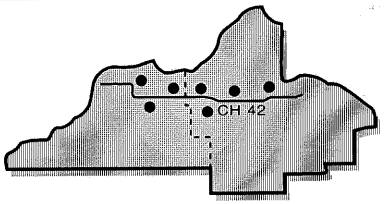



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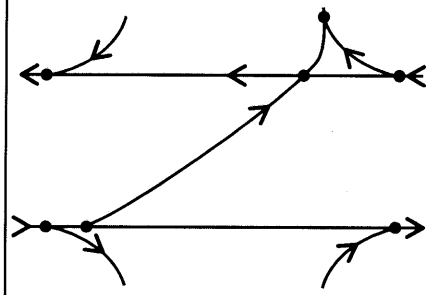
Figure 6-5

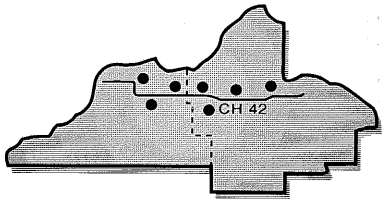
## Full Access Intersection Configuration



| | |
|---|---|
| Merging Conflict Points | 3 |
| Diverging Conflict Points | 3 |
| Turning Conflict Points | 1 |
| Through Conflict Points | 0 |
| Total | 7 |

● Intersection Conflict Points






# CH 42 Corridor Study

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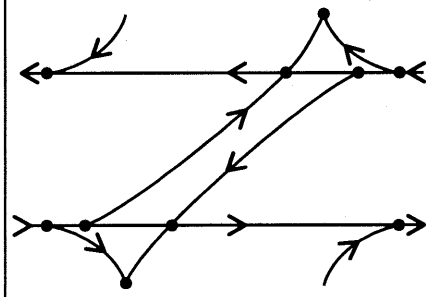
Figure 6-6

**3/4 Intersection Access**
**One Approach**
**Intersection Configuration**



| | |
|---|---|
| Merging Conflict Points | 4 |
| Diverging Conflict Points | 4 |
| Turning Conflict Points | 2 |
| Through Conflict Points | 0 |
| Total | 10 |

● Intersection Conflict Points



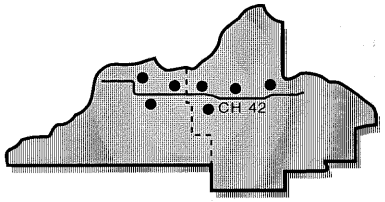



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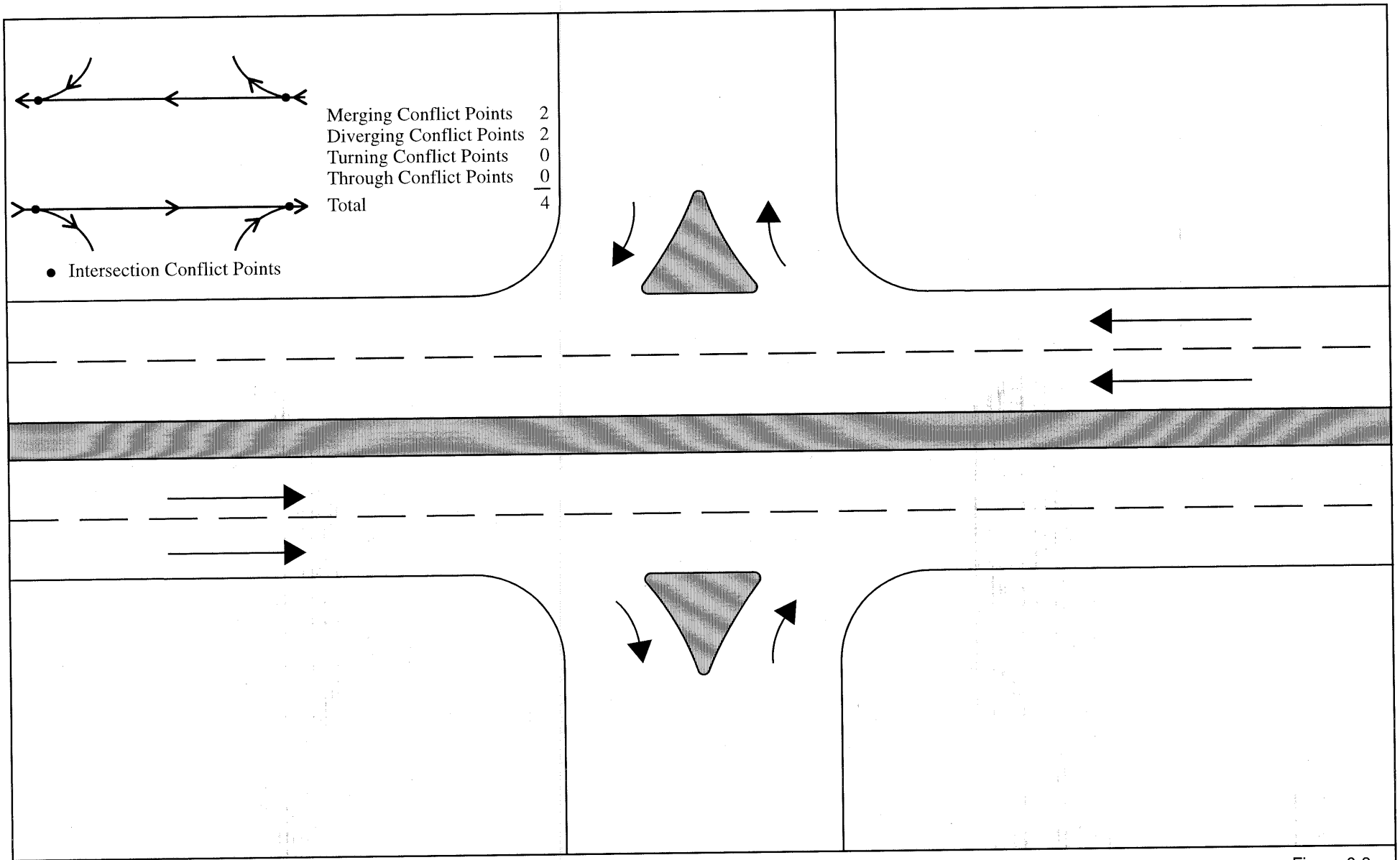
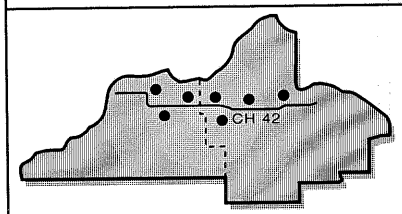
Figure 6-7

**3/4 Intersection Access**
**Two Approaches**
**Intersection Configuration**




# CH 42 Corridor Study

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Figure 6-8

**Right In/Right Out Access Intersection Configuration**

# Table 8-3
# Existing and Recommended CH 42 Access Density
*County Highway 42 Corridor Study*

| | CORRIDOR SEGMENT | 1996 EXISTING ACCESS POINTS | | | | | LENGTH (miles) | ACCESS POINTS PER MILE |
|---|---|---|---|---|---|---|---|---|
| | | PUBLIC STREETS | | DRIVEWAYS | | | | |
| | | FULL | PARTIAL | FULL | PARTIAL | TOTAL | | |
| 1 | TH 169 to CH 17 | 12 | 0 | 34 | 0 | 46 | 3.7 | 12.4 |
| 2 | CR 78 to CR 42 | 7 | 0 | 14 | 0 | 21 | 1.1 | 19.1 |
| 3 | CH 17 to CR 83 | 2 | 0 | 16 | 0 | 18 | 1.6 | 11.3 |
| 4 | CR 83 to CH 21 | 4 | 0 | 9 | 0 | 13 | 1.4 | 9.3 |
| 5 | CH 21 to TH 13 | 17 | 0 | 16 | 10 | 43 | 3.0 | 14.3 |
| 6 | TH 13 to CH 27 | 5 | 1 | 0 | 9 | 15 | 1.0 | 15.0 |
| 7 | CH 27 to CR 31 | 9 | 1 | 5 | 8 | 23 | 1.2 | 19.2 |
| 8 | CR 31 to Irving | 16 | 0 | 0 | 5 | 21 | 1.7 | 12.4 |
| 9 | Irving to I-35W | 6 | 3 | 0 | 6 | 15 | 0.7 | 21.4 |
| 10 | I-35W to I-35E | 7 | 0 | 0 | 0 | 7 | 0.4 | 17.5 |
| 11 | I-35E to Southcross | 11 | 3 | 2 | 4 | 20 | 1.4 | 14.3 |
| 12 | Southcross to Pennock | 11 | 3 | 0 | 1 | 15 | 1.4 | 10.7 |
| 13 | Pennock to CH 31 | 11 | 3 | 8 | 11 | 33 | 2.3 | 14.3 |
| 14 | CH 31 to TH 3 | 12 | 0 | 4 | 5 | 21 | 2.4 | 8.8 |
| 15 | TH 3 to TH 52 | 20 | 0 | 27 | 17 | 64 | 4.9 | 13.1 |
| 16 | TH 52 to TH 55 | 5 | 0 | 26 | 0 | 31 | 2.3 | 13.5 |
| **Total** | | **155** | **14** | **161** | **76** | **406** | **30.5** | |
| **Average** | | | | | | | | **13.3** |

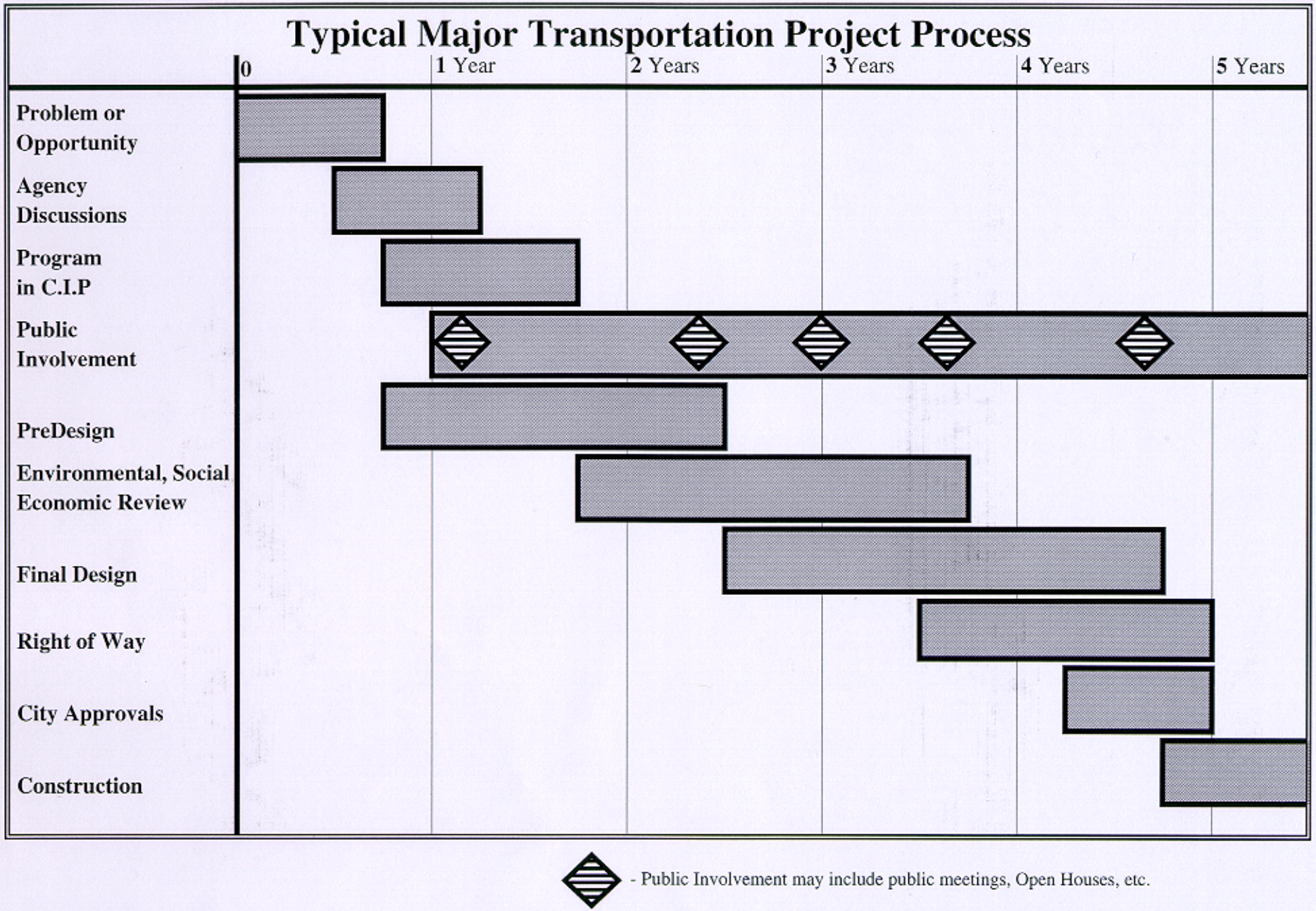
| | CORRIDOR SEGMENT | 2020 RECOMMENDED ACCESS POINTS | | | | | LENGTH (miles) | ACCESS POINTS PER MILE |
|---|---|---|---|---|---|---|---|---|
| | | PUBLIC STREETS | | DRIVEWAYS | | | | |
| | | FULL | PARTIAL | FULL | PARTIAL | TOTAL | | |
| 1 | TH 169 to CH 17 | 12 | 0 | 34 | 0 | 46 | 3.7 | 12.4 |
| 2 | CR 78 to CR 42 | 7 | 0 | 14 | 0 | 21 | 1.1 | 19.1 |
| 3 | CH 17 to CR 83 | 6 | 18 | 0 | 0 | 24 | 1.6 | 15.0 |
| 4 | CR 83 to CH 21 | 6 | 18 | 0 | 0 | 24 | 1.4 | 17.1 |
| 5 | CH 21 to TH 13 | 14 | 34 | 0 | 0 | 48 | 3.0 | 16.0 |
| 6 | TH 13 to CH 27 | 4 | 12 | 0 | 0 | 16 | 1.0 | 16.0 |
| 7 | CH 27 to CR 31 | 6 | 5 | 0 | 0 | 11 | 1.2 | 9.2 |
| 8 | CR 31 to Irving | 8 | 10 | 0 | 0 | 18 | 1.7 | 10.6 |
| 9 | Irving to I-35W | 2 | 5 | 0 | 0 | 7 | 0.7 | 10.0 |
| 10 | I-35W to I-35E | 5 | 0 | 0 | 0 | 5 | 0.4 | 12.5 |
| 11 | I-35E to Southcross | 6 | 18 | 0 | 0 | 24 | 1.4 | 17.1 |
| 12 | Southcross to Pennock | 4 | 12 | 0 | 0 | 16 | 1.4 | 11.4 |
| 13 | Pennock to CH 31 | 10 | 26 | 0 | 0 | 36 | 2.3 | 15.7 |
| 14 | CH 31 to TH 3 | 10 | 9 | 0 | 0 | 19 | 2.4 | 7.9 |
| 15 | TH 3 to TH 52 | 14 | 30 | 0 | 0 | 44 | 4.9 | 9.0 |
| 16 | TH 52 to TH 55 | 5 | 6 | 0 | 0 | 11 | 2.3 | 4.8 |
| **Total** | | **119** | **203** | **48** | **0** | **370** | **30.5** | |
| **Average** | | | | | | | | **12.1** |

## IMPLEMENTATION PROCESS (Chapter 9.0)

The implementation process for the CH 42 Corridor Study Final Report includes agency implementation and future project development. The formal resolutions documenting agency adoption are included at the end of the chapter.

Agency implementation is the process for each of the participating partners in the Study of adopting the CH 42 Corridor Study Final Report and referencing it in their comprehensive plans to guide future transportation improvements in the CH 42 Corridor. The CH 42 Corridor Study Report is a blueprint for future implementation, therefore a project development process would need to be followed for future transportation projects. Figure 9-1 shows the major steps in the process. Key elements are public involvement, project funding, the design process, environmental review, and project goals and objectives.

Figure 9-1


Typical Major Transportation Project Process
0
1 Year
2 Years
3 Years
4 Years
5 Years
Problem or Opportunity
Agency Discussions
Program in C.I.P
Public Involvement
PreDesign
Environmental, Social Economic Review
Final Design
Right of Way
City Approvals
Construction
- Public Involvement may include public meetings, Open Houses, etc.