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### Process Schedule

- Public Hearing -- Planning Commission                      October 9, 1996
- Public Hearing -- City Council                                      October 14, 1996
- Public Hearing -- City Council                                      October 28, 1996

# I. Introduction / Background \_\_\_\_\_

The Twin Lakes redevelopment area is located in the northeast quadrant of Roseville and is bounded by County Road C2 on the north, Snelling Avenue on the east, County Road C on the south, and I-35W on the west. The area is fully developed, but, because of the age of the existing developments and due to changing market forces, the area is currently undergoing large-scale redevelopment and reconstruction.

Development in the Twin Lakes district began in the 1950's. A primary force in shaping the development of the Twin Lakes district was its location and availability. Because the area is located between the two downtowns of Minneapolis and St. Paul, because it has excellent access to the regional highway system, and because development sites in the district were large and inexpensive, it became a major hub for over-the-road trucking services and it was developed primarily with trucking companies and related businesses.

However, with the federal deregulation of the trucking industry in 1980, a dramatic change occurred in the trucking business and many trucking companies reduced operations, consolidated locations, or simply went out of business. These changes also impacted the City of Roseville and especially the Twin Lakes area, which started to decline and deteriorate.

In 1988, in response to the changing conditions, the City established a Tax Increment District and prepared a Land Use Guide Plan for the Twin Lakes district. The recommendations of the Land Use Plan are to redevelop the area to provide a variety of office, retail, business, and light industrial uses. As a result of these actions, the Twin Lakes redevelopment district has undergone many changes and is still in transition. Whereas most of the anticipated redevelopment has been completed in the east half of the district, along Snelling Avenue, much of the west half, west of Fairview Avenue, still needs to be redeveloped.

In addition to the Land Use Guide Plan, the city also conducted a traffic study. The traffic study indicates that County Road C will experience increased traffic loads and significant traffic problems at key intersections in the future. The

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## I. Introduction / Background

recommendation of the 1988 traffic study is that an alternate east-west route be developed north of County Road C, between the I-35W ramps and the County Road C2 intersection with Snelling Avenue. The purpose of the new roadway would be to provide access to the redevelopment areas and to accommodate additional traffic generated by the proposed new developments in the Twin Lakes district.

Thus, a key element in the redevelopment process for the west half of the Twin Lakes district will be the implementation of the Twin Lakes Parkway west of Fairview Avenue. The Twin Lakes Parkway will be a significant force in the redevelopment process for the west half because it will make the area more accessible and it will establish a design theme and image for the district.

The purpose of this study is to, first of all, verify and reaffirm the findings of the 1994 Comprehensive Plan and, second, to answer four key questions regarding the Twin Lakes district and Twin Lakes Parkway:

- Where should the Parkway be located west of Fairview Avenue?
- What should the design of the Parkway be and what types of other urban design enhancements should be included in the redevelopment of the Twin Lakes district?
- What other infrastructure improvements, such as major utilities and storm water drainage ponds, may be required and how can they be accommodated?
- What will be the cost of the proposed Twin Lakes Parkway and the other improvements and enhancements?

## II. Inventory / Analysis

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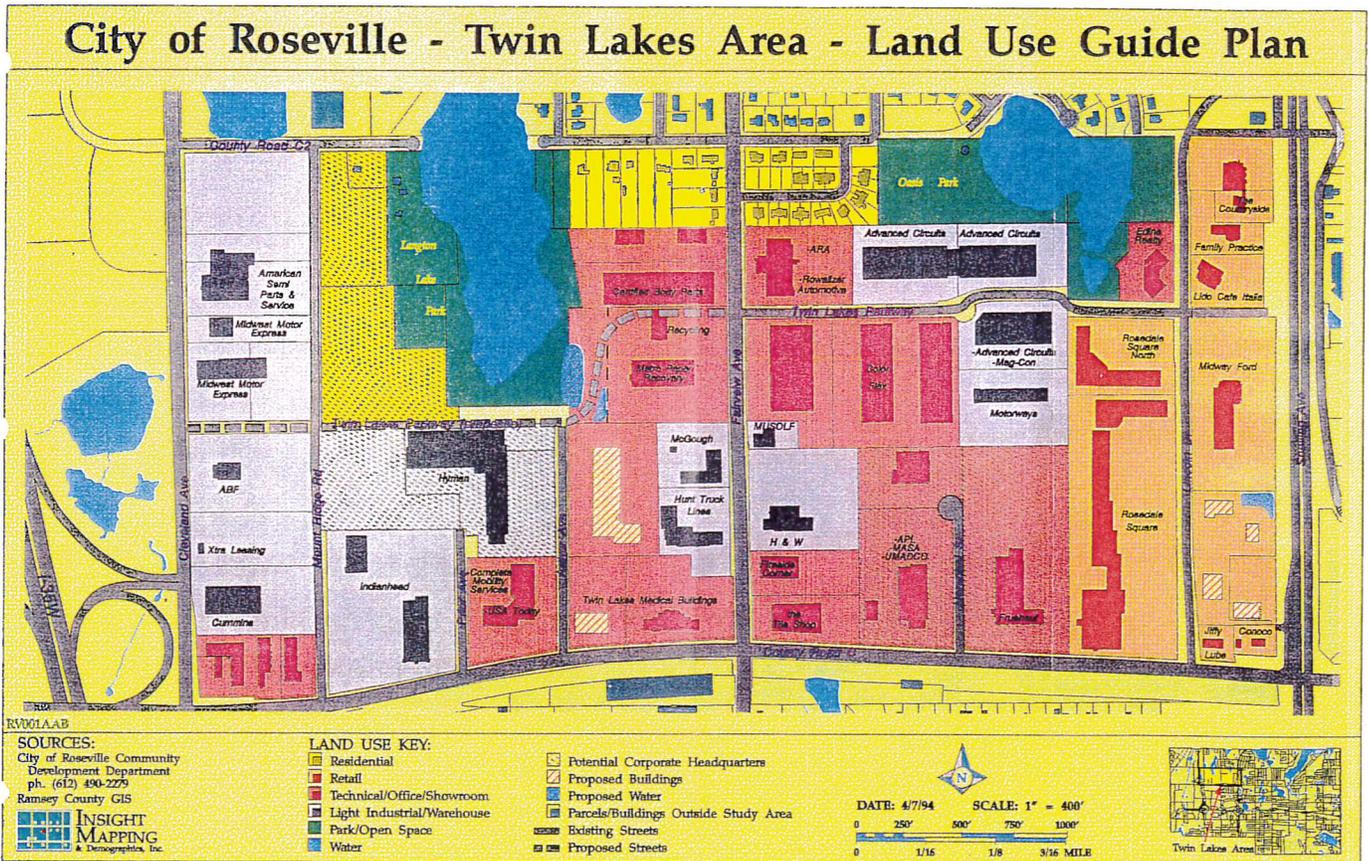
The Twin Lakes district includes, or it will include once its redevelopment is completed, predominantly four types of land uses -- parks and open space, retail commercial, office/showroom, and light industrial/warehouse. The aerial view of the westerly half of the project area and the Land Use Guide Plan (Figure 1) illustrate the existing and the proposed conditions in the Twin Lakes district.

Two parks, Langton Lake Park and Oasis Park, form the northerly edge of the Twin Lakes district. A relatively large wetland and pond are located in the strip between Cleveland Avenue and I-35W. The east end of the district has been redeveloped with retail commercial uses. The central portion of the district contains mainly office/showroom developments. The west end of the district, which is to be converted to light industrial/warehouse uses, has not been redeveloped yet and currently contains a mixture of uses including: truck service and recycling businesses along the west side of Fairview Avenue; the newly constructed Twin Lakes Medical Building and the two Twin Lakes Corporate Center office/showroom buildings west of Fairview Avenue; and a mixture of truck service, industrial, and miscellaneous uses in the rest of the area.

In addition to the uses described above, a small low-density residential development is located between Langton Lake Park and Oasis Park and the area immediately west of Langton Lake Park has been designated as a potential future corporate headquarters site and/or high-density residential.

The proposed redevelopment of the west end of the Twin Lakes district and the construction of the Twin Lakes Parkway are impacted by a number of forces and issues. Some of the forces/issues represent constraints which need to be addressed and resolved. Other forces/issues represent opportunities, which, if properly considered and integrated in the planning and development process, could improve and enhance the overall image and appearance of the Twin Lakes district and could become a positive addition to the City of Roseville.

Following is a discussion of the major forces/issues, illustrated in Figure 2, which impact the Twin Lakes district and the development of the Twin Lakes Parkway:



**Figure 1**  
**Existing & Land Use Guide Plan**

September 30, 1996

**Twin Lakes Parkway Master Plan**  
 CITY OF ROSEVILLE, MINNESOTA



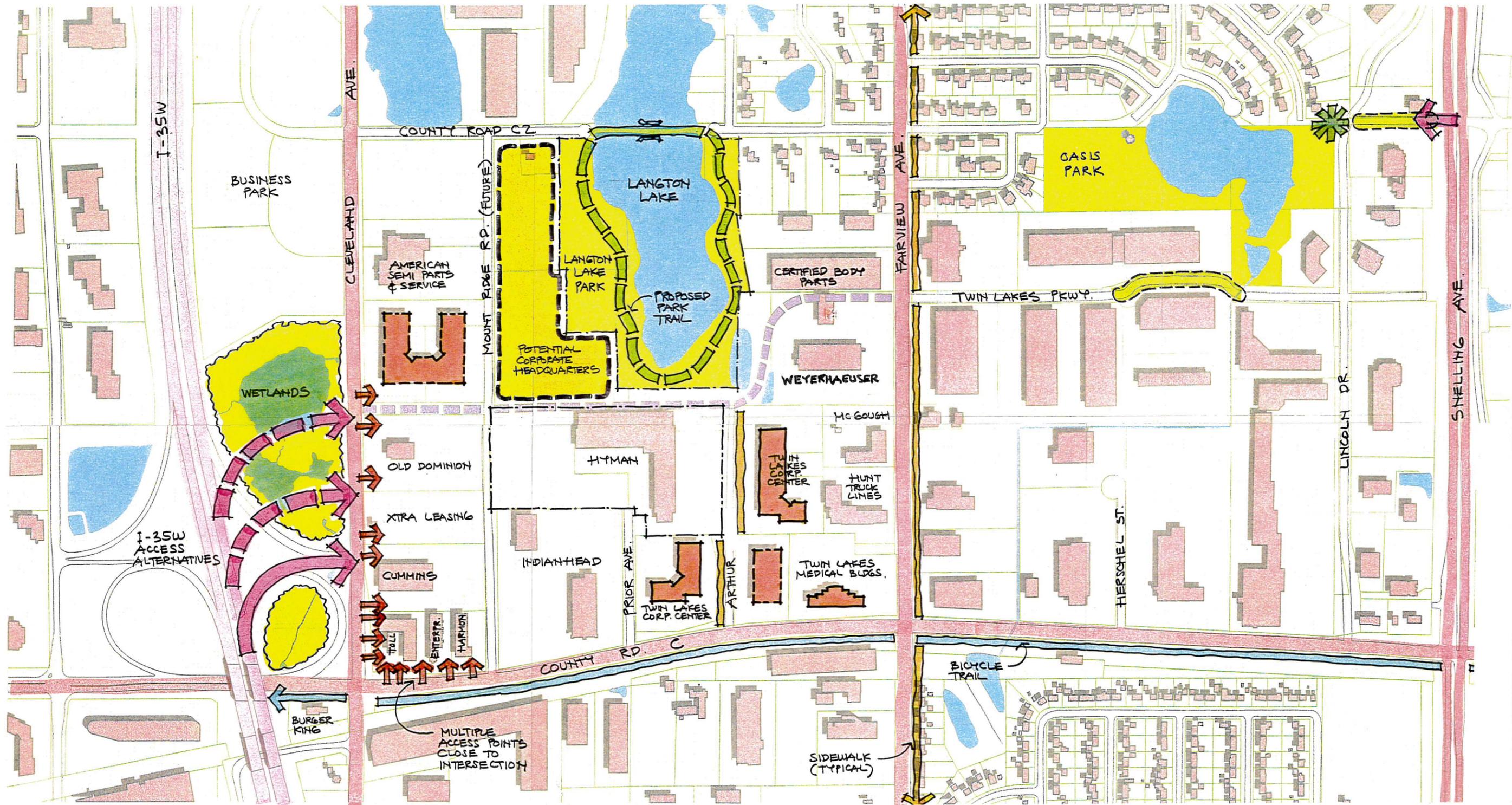


Figure 2  
**Forces / Issues**

September 30, 1996

**Twin Lakes Parkway Master Plan**  
 CITY OF ROSEVILLE, MINNESOTA

0 200 400 Feet  
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1. **Highway Access.** One of the most critical issues, in developing the Twin Lakes Parkway west of Fairview Avenue, is how to connect the proposed Parkway to the access and egress ramps at I-35W. Direct and smooth traffic flow on and off I-35W is essential for the future success of the district. The original plan for the Twin Lakes area calls for relocating the existing I-35W ramps to the north, through the middle of the large pond and wetland area, in order to align them to the proposed Twin Lakes Parkway. This issue needs to be reevaluated in greater detail in order to determine the optimum interchange location and configuration.
  
2. **Parkway Location.** The original plan calls for locating the Parkway along the south edge of Langton Park and along the north edge of the Hyman property. The three key issues regarding this location are:
  - Does this location permit a direct connection with the I-35W ramps?
  
  - Is this the optimum Parkway alignment for providing access to the redevelopment parcels?
  
  - Can the Parkway be implemented in this alignment in the near future? This alignment depends upon the relocation of the Hyman trucking operations and redevelopment of that site. Since it is uncertain at this time when the Hyman property might become available for redevelopment, this option may not be feasible for a long time.
  
3. **Number of Roadways.** Are all the internal roadways in the area west of Fairview Avenue -- Mount Ridge Road, Prior Avenue, Arthur Street, and the proposed Twin Lakes Parkway -- required for vehicular circulation and for access to the redevelopment parcels?
  
4. **Number of Access Points.** The current development pattern includes an excessive number of private access points from the major area roadways. This is especially critical in the vicinity of the County Road C and Cleveland Avenue intersection, since the many private access points in this area are in direct conflict with the traffic carrying capacity and turning movement requirements for the roadways. A major goal in redeveloping this area should be to try consolidate the properties along County Road C, between Cleveland Avenue and the Mount Ridge Road alignment, in order to minimize the number of access points required.

5. **Site Constraints / Opportunities.** The major site constraints for routing the proposed Twin Lakes Parkway through the area west of Fairview Avenue are primarily the existing new developments, such as the Twin Lakes Corporate Center buildings. In addition, the existing Hyman property, as discussed previously, presents an obstacle of uncertain duration, and the Cummins Building, which is a substantial facility at Cleveland Avenue, as well as the Certified Body Parts and the Weyerhaeuser buildings at Fairview Avenue, represent potential obstacles.

In terms of opportunities, Langton Lake and Langton Lake Park represent an amenity, due to their attractiveness as a natural open space and their potential for recreational uses. Langton Lake Park already includes a visitor area in the northwest corner of the park, at the end of County Road C2, and City plans call for the development of a trail system around Langton Lake.

6. **Trails / Walkways.** The project area currently includes a bicycle trail consisting of a ten-foot wide bituminous path along the south side of County Road C and sidewalks along the east side of Fairview Avenue and along portions of Arthur Street. The trail and walkway system lacks continuity and is, at the present, of relatively little benefit to the project area.
7. **Urban Design / Landscaping Enhancements.** The only areas in the Twin Lakes district with any urban design/landscaping enhancements are a short segment of the existing Twin Lakes Parkway west of Lincoln Drive, which includes a short landscaped median, and the segment of County Road C2 just west of Snelling Avenue, which includes special median pavement and a small entry/rest area, at the edge of Oasis Park, with special landscaping treatments, benches, ornamental brick pilaster and wrought iron railings, and a sign with the words "Roseville Twin Lakes".

The Twin Lakes district, as a whole, except for some of the newer commercial and office developments, does not present a strong image or identity, has few urban design and landscaping enhancements, and, most important of all, lacks any kind of a system or circulation element that would help to provide continuity and unity.

### III. Framework Plan

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This section addresses the following issues:

- What type of a connection should be provided between Twin Lakes Parkway and I-35W?
- Where should the Parkway be located west of Fairview Avenue?
- How could the Parkway be staged?

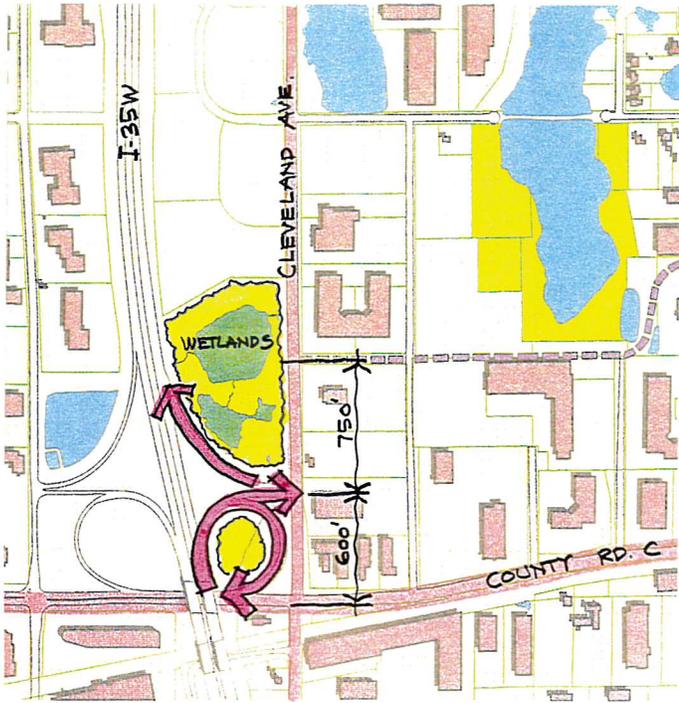
More detailed issues, such as Parkway design and enhancement programs, storm water drainage and ponding, infrastructure improvements, and project costs, are addressed in the remaining sections of this report.

#### A. I-35W INTERCHANGE

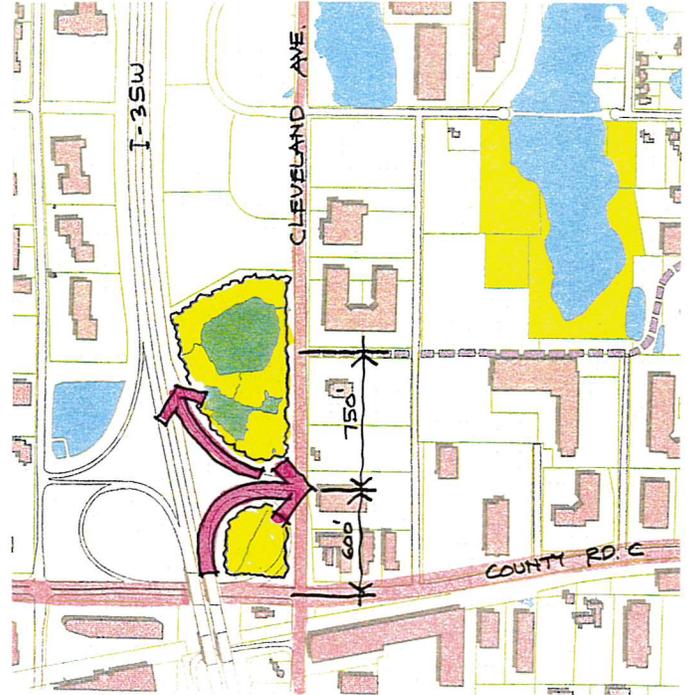
The first and most important issue which needs to be resolved is the connection of Twin Lakes Parkway to I-35W. Since I-35W provides regional access to the area and since there are specific requirements for how the interchange should be configured, care needs to be taken to weigh all options and assess all significant impacts. Modifications to improve the on- and off-ramps would be highly desirable, since one of MnDOT's long-term goals is to enhance the ramp capacity at either County Road C and/or at County Road D.

The first step in the planning process was to contact MnDOT, the Rice Creek Watershed District, the DNR, and the Corps of Engineers in order to identify options and to discuss opportunities for reconfiguring or relocating the existing access and egress ramps at I-35W. Figure 3 illustrates the four interchange configurations which have been considered and evaluated.

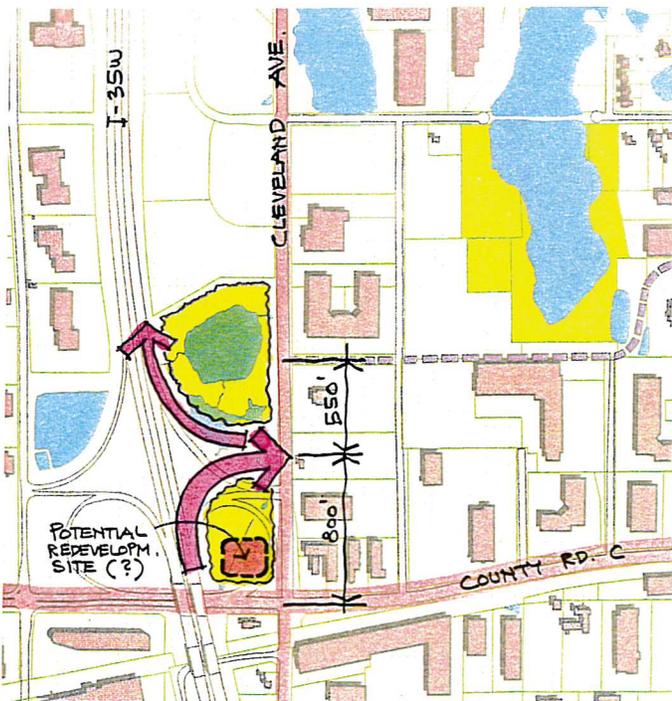
The basic premise in these evaluations was that, ideally, Twin Lakes Parkway should connect directly to the on- and off-ramps at I-35W. Also, MnDOT's long-term goal is to enhance the ramp capacity at either County Road C and/or County Road D. Although an off-set configuration might work, assuming the offset is a sufficient distance from the ramps, this would not be desirable, since



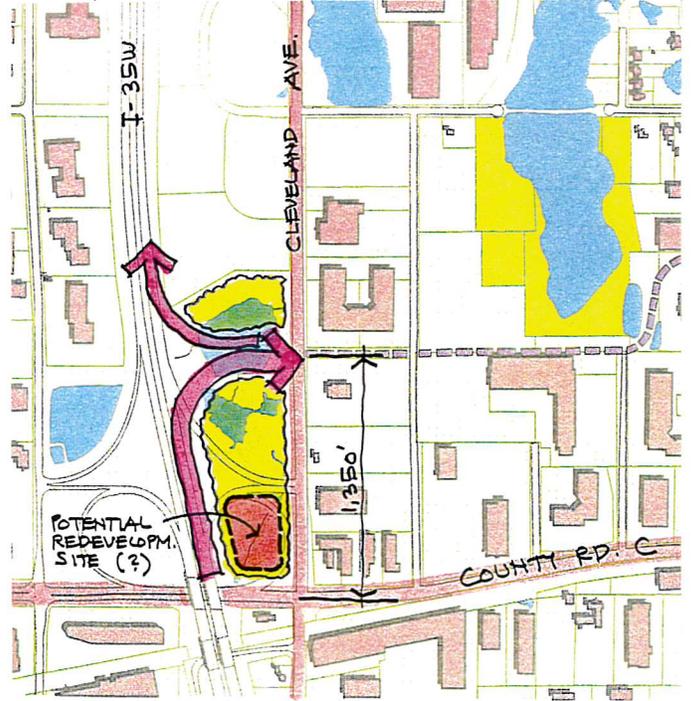
Option A - Existing



Option B - Ramp Reconfiguration



Option C - Minor Ramp Relocation



Option D - Major Ramp Relocation

Figure 3  
I-35W Interchange Options

September 30, 1996

Twin Lakes Parkway Master Plan  
CITY OF ROSEVILLE, MINNESOTA



it would not provide smooth traffic flow and might not relieve County Road C. Following is a summary of the issues and the recommendations from this evaluation:

1. **Interchange Option A - Existing.** One option would be to leave the interchange exactly as it is. In the existing configuration the on- and off-ramps are located approximately 600' north of County Road C and the interchange includes a separate off-ramp which merges with west-bound traffic on County Road C. This additional off-ramp loop presents a certain amount of problems, since drivers exiting from I-35W have to make a quick decision regarding which exit to take -- the one to Cleveland Avenue or the one to west-bound County Road C. This indecision can result in accidents and/or back-ups on I-35W.

In this option, the Twin Lakes Parkway could be connected directly to the I-35W ramps, which would require the acquisition of the Cummins property, or the Parkway connection could be offset, which is not desirable from a traffic circulation standpoint.

2. **Interchange Option B - Ramp Reconfiguration.** In Option B, the I-35W on- and off-ramps would remain in their current location, but the loop to west-bound County Road C would be removed. Instead, an extra south-bound lane would be added to Cleveland Avenue and a free right-turn would be provided for south-bound traffic to west-bound County Road C. This reconfiguration should improve the overall traffic circulation by removing the indecision point and by giving all exiting drivers the option to go either east or west on County Road C. The choices for connecting Twin Lakes Parkway are the same as in Option A.
3. **Interchange Option C - Minor Ramp Relocation.** In Option C, the I-35W on- and off-ramps would be relocated anywhere from 100' to 200' to the north. This would permit a direct connection of Twin Lakes Parkway to the I-35W ramps without requiring the acquisition of the Cummins property, but it would require the acquisition of the Xtra Leasing property. However, this option would add considerable cost for the relocation of the ramps and it would create substantial impacts on the existing wetlands north of the ramps. Preliminary conceptual cost estimates indicate that the reconstruction of the ramps and improvements to Cleveland Avenue could total up to \$1,000,000.

4. **Interchange Option D - Major Ramp Relocation.** In Option D, the I-35W on- and off-ramps would be relocated more than 700' to the north in order to align them with the previously proposed Twin Lakes Parkway location. This option would even further increase the costs of reconstructing the ramps, it would have a very significant impacts on the existing pond and wetlands, and it might present problems with the spacing requirements between interstate highway interchanges, since there is another interchange at County Road D .

The indications, from discussions with MnDOT staff are that, although MnDOT currently does not have plans nor allocated funds for highway improvements in this area, they would be open to further discussions regarding the ramp modifications, especially if the improvements result in marked improvements to highway operations.

Staff from the Rice Creek Watershed District, DNR, and Corps of Engineers expressed unanimous opposition to Option D. All agency representatives indicated that permits would likely not be granted for Option D in light of the fact that other options exist which have minor or no wetland impacts.

The conclusions from the discussions with the various agencies regarding the existing ponds and wetlands are that Options A and B present few problems, Option C might be doable, but that Option D would be difficult to implement due to the severity of the impacts on the existing pond and wetlands.

Based upon an evaluation of the agency reactions, the costs associated with each option, and the potential benefits gained, the recommendation is to proceed with Option B - Ramp Reconfiguration as the preferred plan for the Twin Lakes district redevelopment. Option B would improve the overall traffic circulation in the area and, although it would require the acquisition of the Cummins property, it would further the redevelopment objectives for the Twin Lakes district. It would be more beneficial to spend City money on the acquisition of the Cummins property, which could help immensely in redeveloping the other properties at the corner of County Road C and Cleveland Avenue, than to spend City money on relocating the I-35W ramps.

If, for any reason, Option B - Ramp Reconfiguration does not work out, Option C - Minor Ramp Relocation would be the second choice for providing a direct connection with the proposed Twin Lakes Parkway.

## B. PARKWAY LOCATION OPTIONS

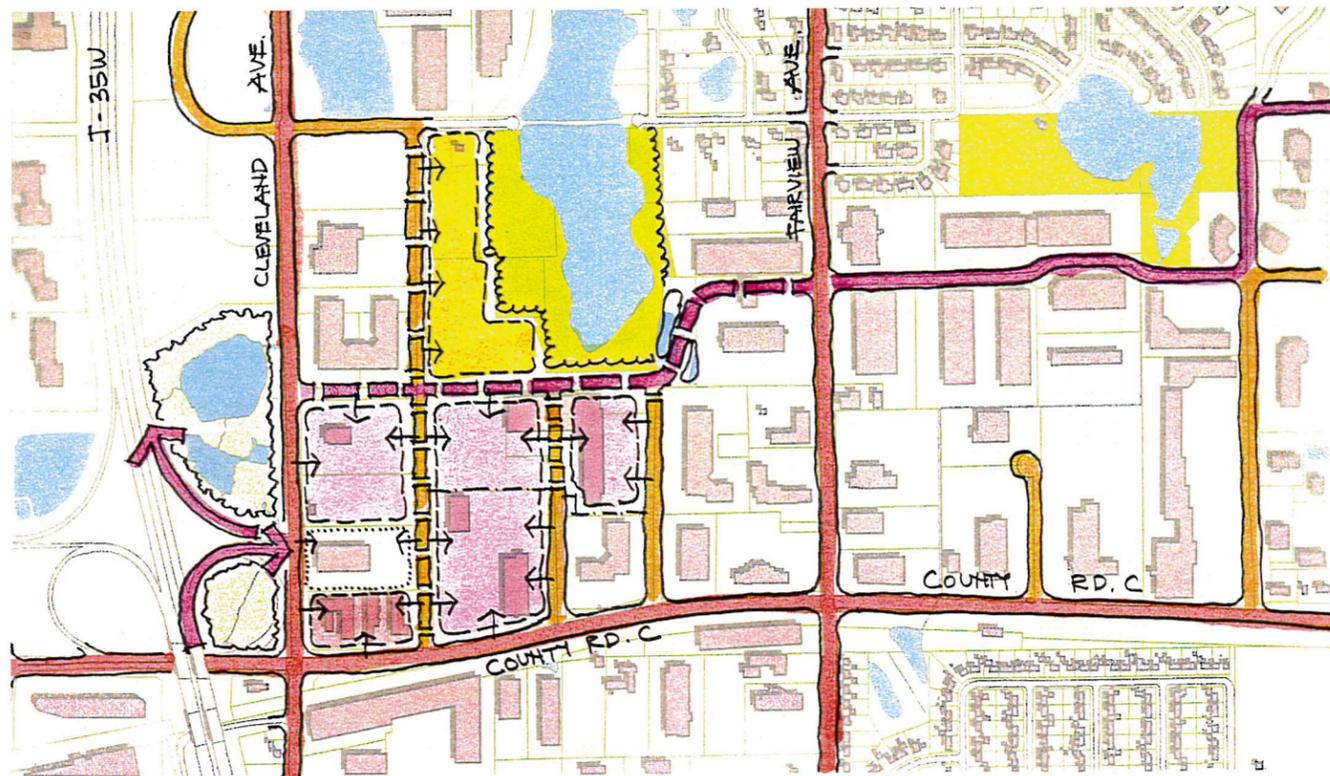
The second key issue in planning the redevelopment of the Twin Lakes area relates to the routing of the Twin Lakes Parkway between the I-35W

interchange and the link-up point with the existing Parkway at Fairview Avenue and Terrace Drive. The Parkway routing was investigated at two levels -- overall Parkway location and detailed Parkway alignment.

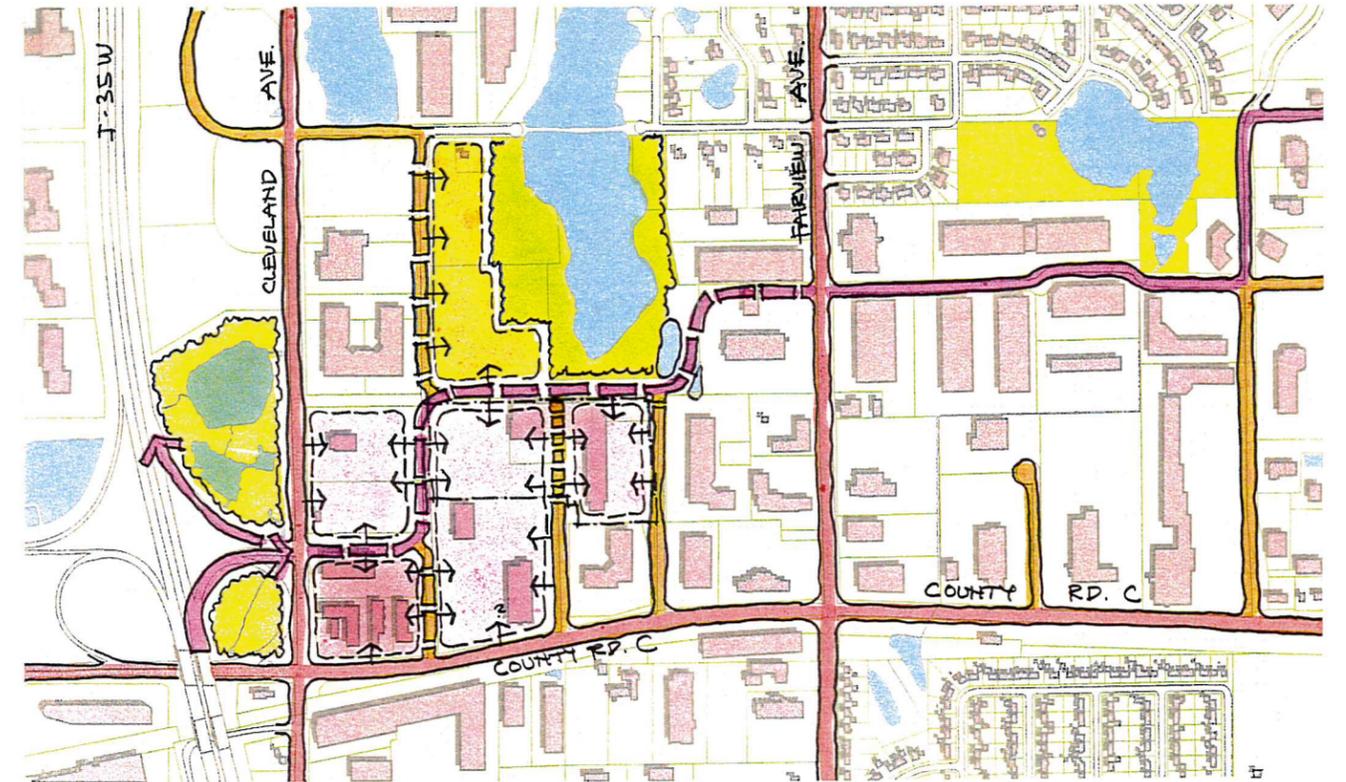
### 1. Overall Parkway Location

For the overall Parkway location four location options (Figure 4) were investigated. In developing the Parkway location options and in assessing them, the following key criteria were utilized:

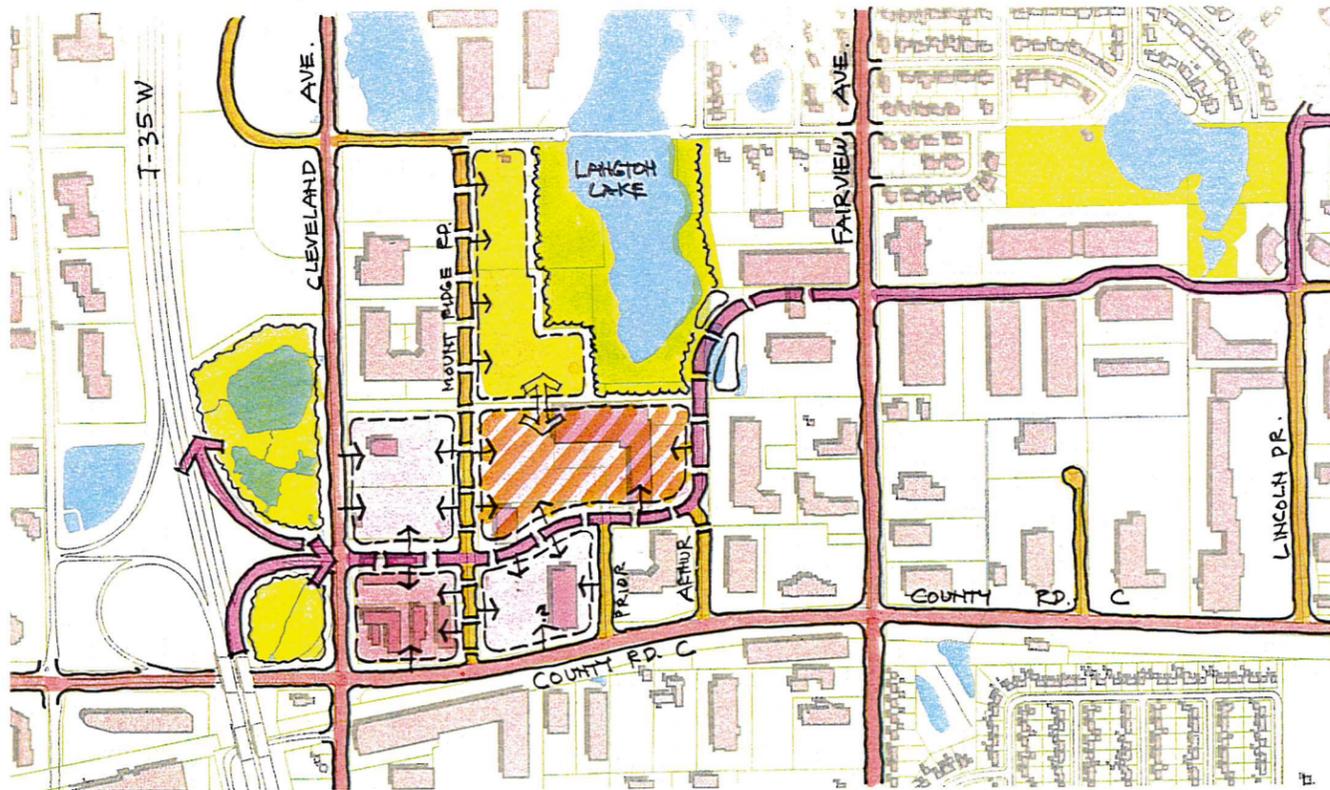
- Provide the most direct route and the smoothest traffic flow
  - Provide optimum parcel access and configuration
  - Minimize the number of roadways in the area
- a. **Location Option A - Original North Alignment.** Option A would utilize the previously proposed alignment for the Parkway along the southerly edge of Langton Park. It would require neither the reconstruction of the ramps nor the acquisition of the Cummins property. However, this option would result in an undesirable offset between the I-35W ramps and the Parkway and it would require the acquisition of the Hyman property, which would create an uncertain time frame for the completion of the Parkway.
- b. **Location Option B - Modified North Alignment.** Option B would utilize much of the alignment described in Option A, except that it would loop down along the Mount Ridge Road alignment to connect directly with the I-35W ramps. The Iona Lane right-of-way between Cleveland Avenue and Mount Ridge Road would be vacated. This option would provide a direct connection to the I-35W ramps, but it would require either the acquisition of the Cummins building or the



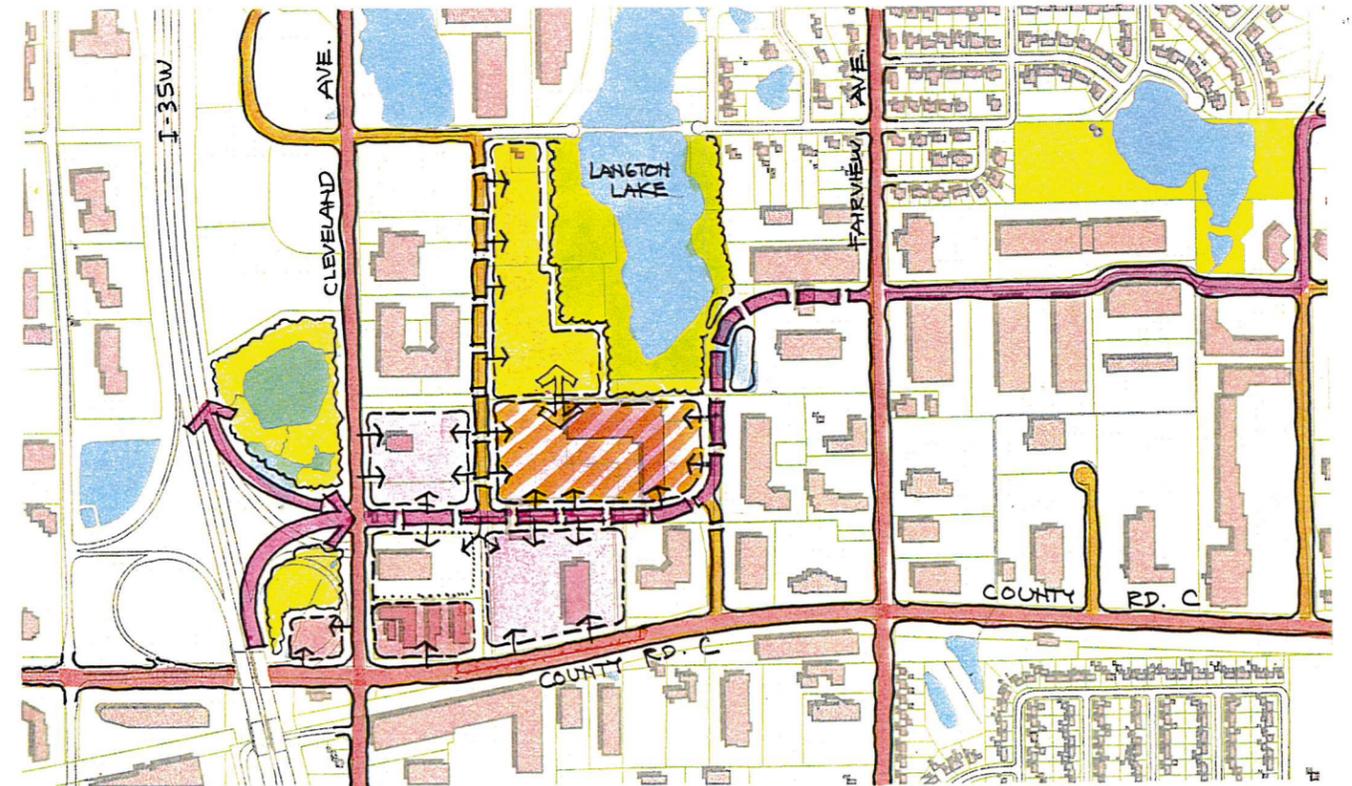
Location Option A - Original North Alignment



Location Option B - Modified North Alignment



Location Option C - South Alignment to Existing Ramps



Location Option D - South Alignment to Relocated Ramps

Figure 4  
Parkway Location Options

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relocation of the ramps. This alternative, just like Option A, would also depend on the acquisition of the Hyman property for implementation.

- c. **Location Option C - South Alignment to Existing Ramps.** In Option C, the Twin Lakes Parkway would connect directly to the existing I-35W ramps, which would require the acquisition of the Cummins property, but it would be located south of the Hyman property, which might improve its chances for early implementation.

In this option the Iona Lane right-of-way would also be vacated. Although this alignment would require the acquisition of a small portion of the southeast corner of the Hyman property and the removal of a small part of the southerly end of the terminal, the potential exists that the total Hyman property would not need to be acquired at this time and, therefore, that the Parkway could be constructed up to Arthur Street earlier than under Options A and B. An advantage of Option C would be that the future Hyman property redevelopment site would abut Langton Park as well as the presently proposed corporate headquarters site west of Langton Park. The linking up these large parcels and their location directly on Langton Park could make them an ideal site for either additional or a larger corporate headquarter developments or even for other uses, such as higher density residential.

An additional benefit of Option C is that, by locating the Twin Lakes Parkway through the middle of the Twin Lakes district, better access would be provided to parcels directly from Twin Lakes Parkway and, therefore, fewer other roadways would be required. Under this option, the segments of Mount Ridge Road and Prior Avenue south of the Parkway would not need to be constructed and their rights-of-way could be utilized for redevelopment.

- d. **Location Option D - South Alignment to Relocated Ramps.** Option D is similar to Option C, except that the most westerly segment of the Parkway is located north of the Cummins property. This means that the Cummins property would not need to be acquired, but it would require the relocation and reconstruction of the I-35W ramps. In this option the Iona Lane right-of-way would also be vacated. This option would provide the straightest and most direct alignment for the Parkway.

Option D presents the same advantages as Option C in terms of creating larger and, potentially, more desirable development sites on Langton Park and in terms of requiring fewer roadways to service all the development parcels.

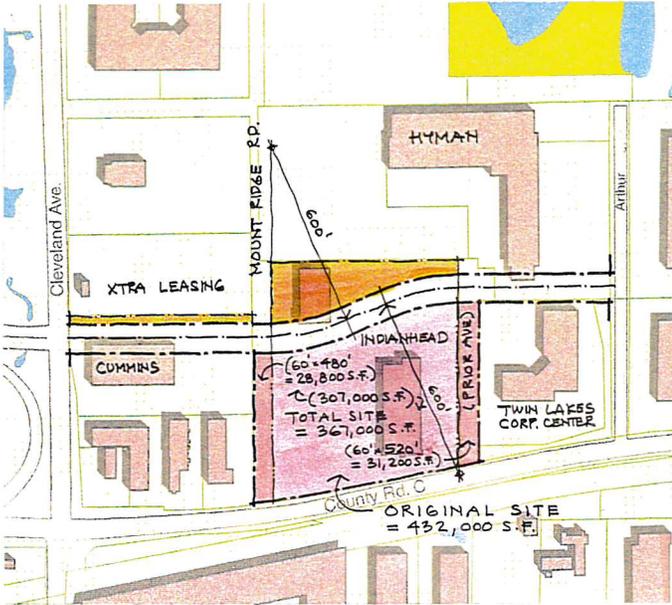
The recommendation, based upon an assessment and comparison of the four Parkway location options, is to select Location Option C - South Alignment to Existing Ramps for locating the Twin Lakes Parkway. The primary benefits of Option C are:

- Because the Twin Lakes Parkway would be located through the center of the redevelopment area, better and more direct access would be provided to the redevelopment parcels and fewer roadways would be required.
- Because the Parkway would be located south of the Hyman property, it would have a better chance for early implementation.
- Due to the Parkways location south of the Hyman property, larger and potentially more desirable development sites are created along Langton Park.

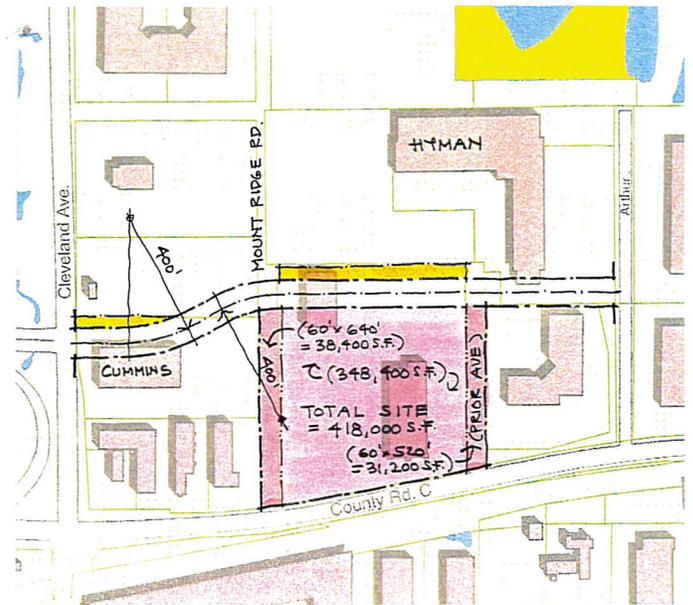
#### 2. Detailed Parkway Alignment

Once the general Parkway location south of the Hyman property had been selected, a detailed evaluation was conducted to identify and establish the exact Parkway alignment between Cleveland Avenue and Arthur Street. The Parkway is being planned with a 90' right-of-way. Four alternative alignments (Figure 5) were considered and evaluated. All the alignment alternatives will impact the Indianhead property.

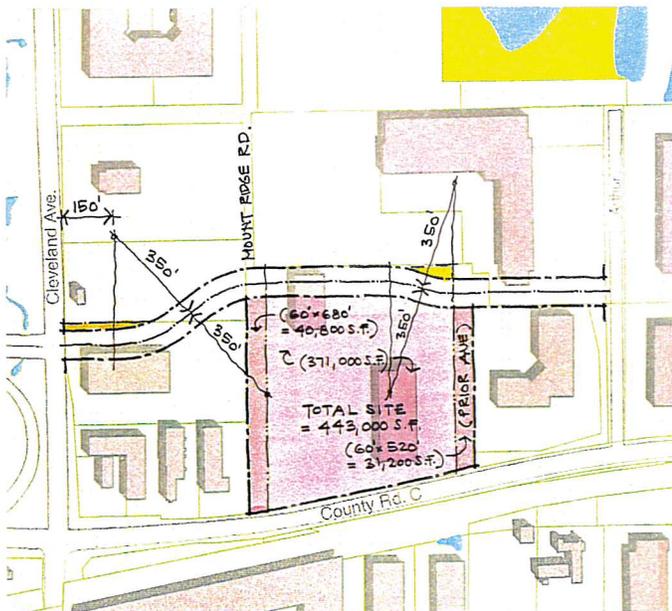
- a. **Parkway Alignment A.** Alternative A minimizes the impacts on the Hyman property but it creates a large parcel remnant north of the Parkway, which could most likely only be developed at the time the total Hyman property is redeveloped.
- b. **Parkway Alignment B.** Alternative B also minimizes impacts on the Hyman property and it creates a much smaller parcel remnant north of the Parkway.



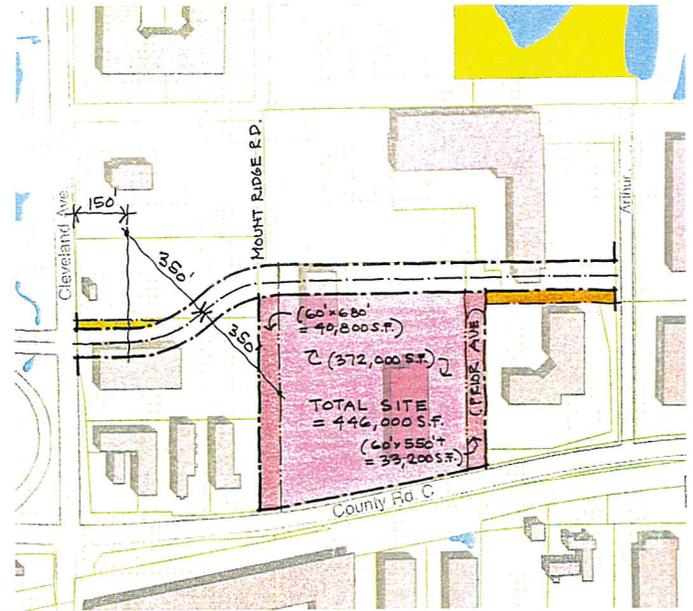
Option A



Option B



Option C



Option D

Figure 5  
Parkway Alignment Options

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- c. **Parkway Alignment C.** Alternative C also minimizes impacts on the Hyman property and it creates only a very small triangular parcel remnant north of the Parkway, but it does result in a much more curvilinear Parkway configuration.
- d. **Parkway Alignment D.** Alternative D creates no parcel remnants north of the Parkway, but it creates a remnant strip south of the Parkway, next to the existing Twin Lakes Corporate Center, and it has a much more significant impact on the Hyman property.

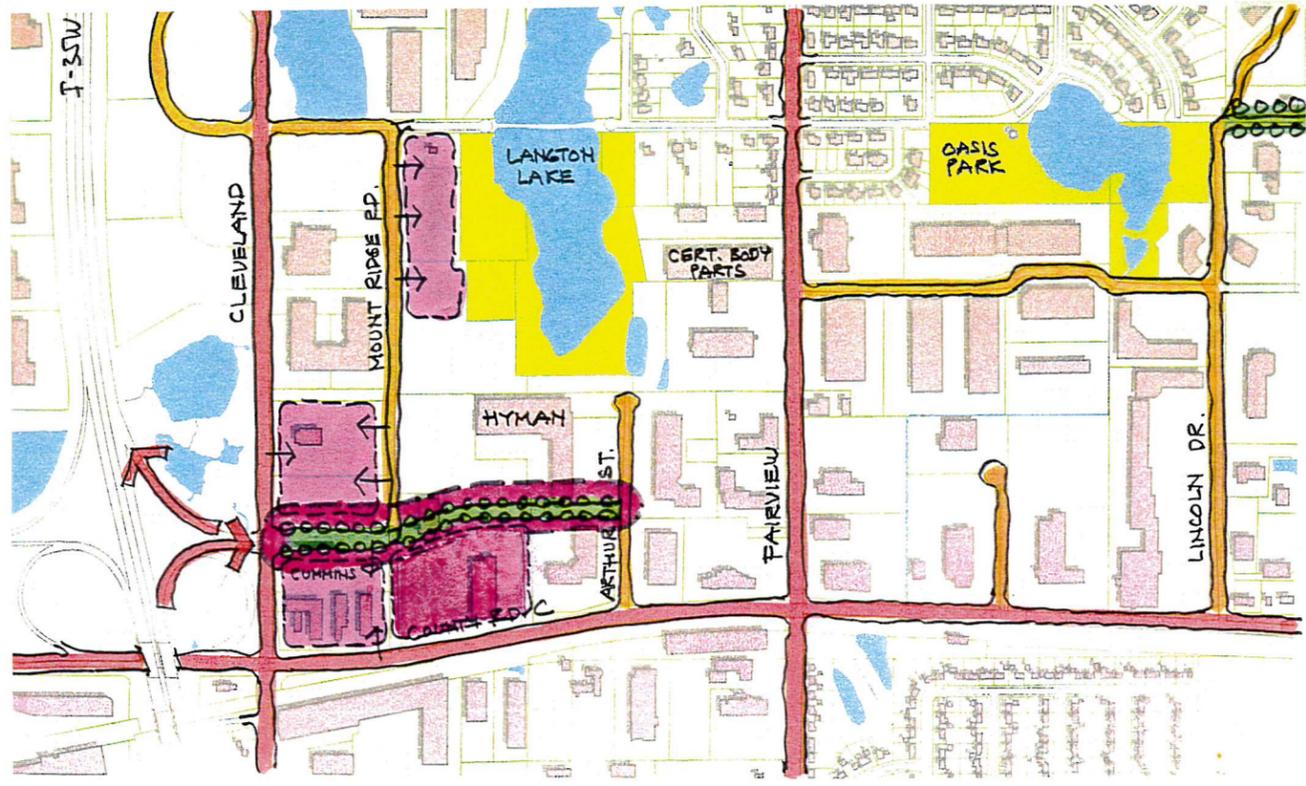
Parkway Alignment B provides the optimum combination of minimized impacts on the Hyman property, a reasonably straight Parkway alignment, and the creation of the relatively small parcel remnant north of the Parkway and, therefore, is recommended as the preferred alignment option.

In terms of minimizing impacts on the Indianhead property and creating the largest redevelopment parcel south of the Parkway, Alignment C would be the preferred option. In Option C, the final parcel, assuming the vacated Prior Avenue and Mount Ridge Road rights-of-way were added to the remaining Indianhead parcel, would be as large (approximately 446,000 S.F.), or slightly larger than the original parcel (approximately 432,000 S.F.). However, as was mentioned earlier, this would result in a very curvilinear Parkway alignment.

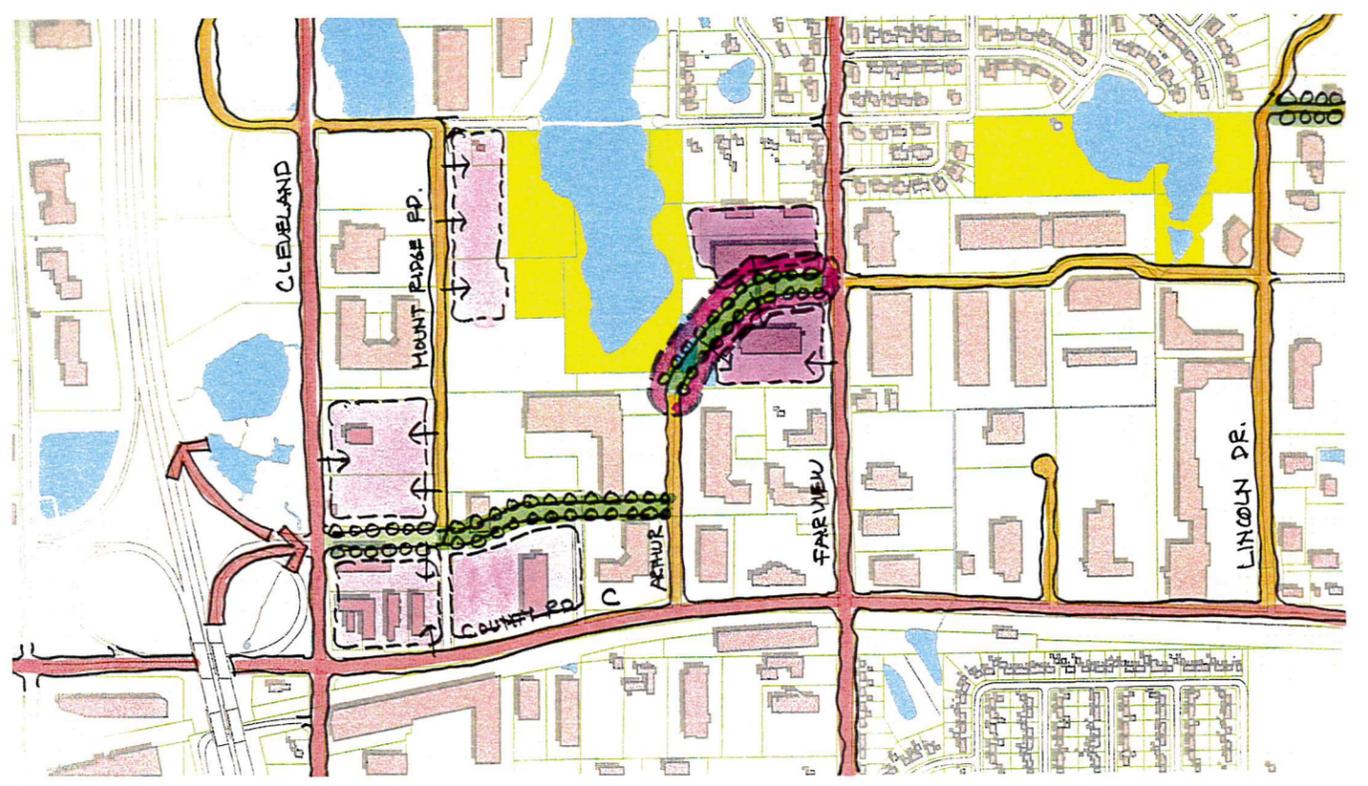
### C. PARKWAY STAGING

Because of redevelopment opportunities, right-of-way availability, or funding limitations, the implementation of the Twin Lakes Parkway may need to be staged. Figure 6 illustrates four staging and sequencing options.

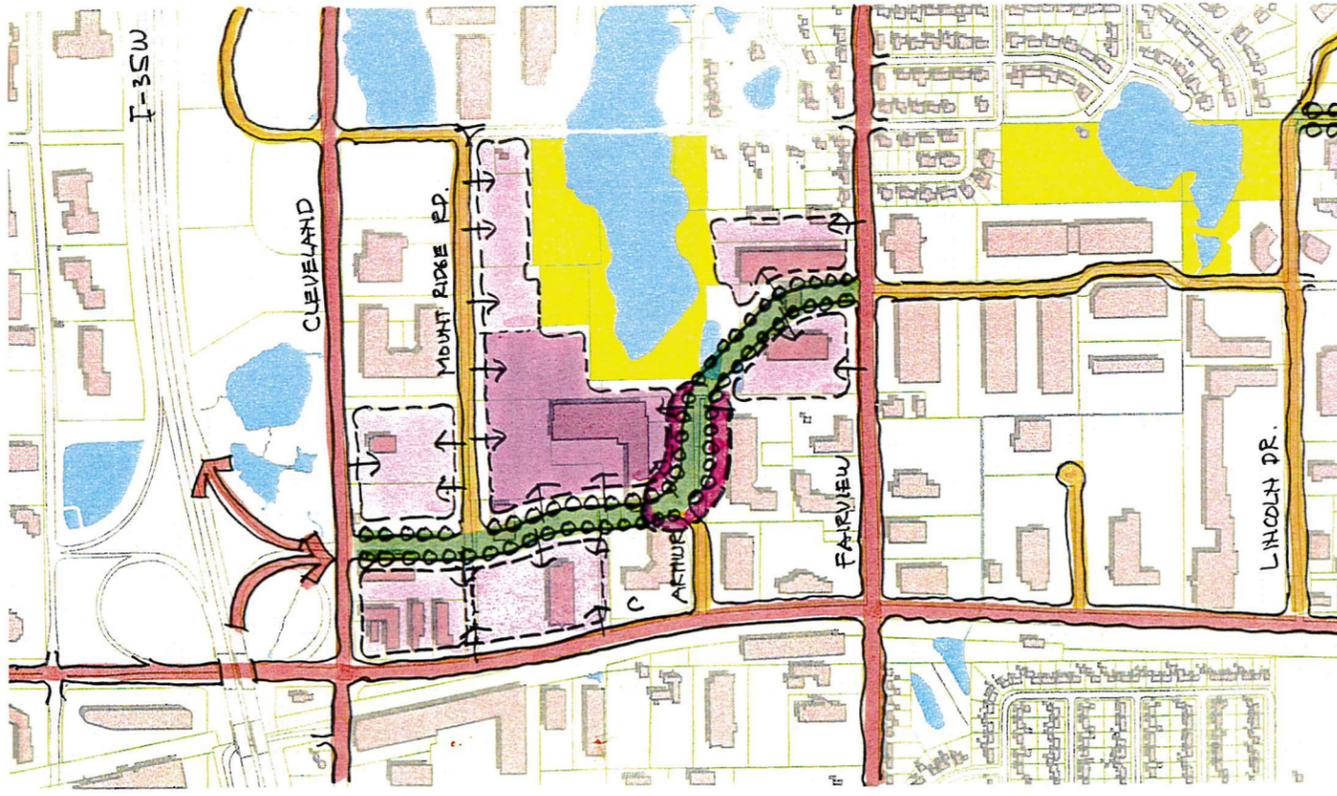
1. **Stage 1.** Construct the Twin Lakes Parkway between Cleveland Avenue and Arthur Street.
2. **Stage 2.** In Stage 2, the Twin Lakes Parkway would be completed between the end of the existing Arthur Street and the Parkway link-up at Fairview Avenue. This would allow the redevelopment of the parcels along the Stage 2 segment of the Parkway.
3. **Stage 3.** Stage 3 would consist of reconstruction of a part of Arthur Street and completion of the Twin Lakes Parkway west of Fairview Avenue. This stage, because it would severely impact the southeast corner of the Hyman



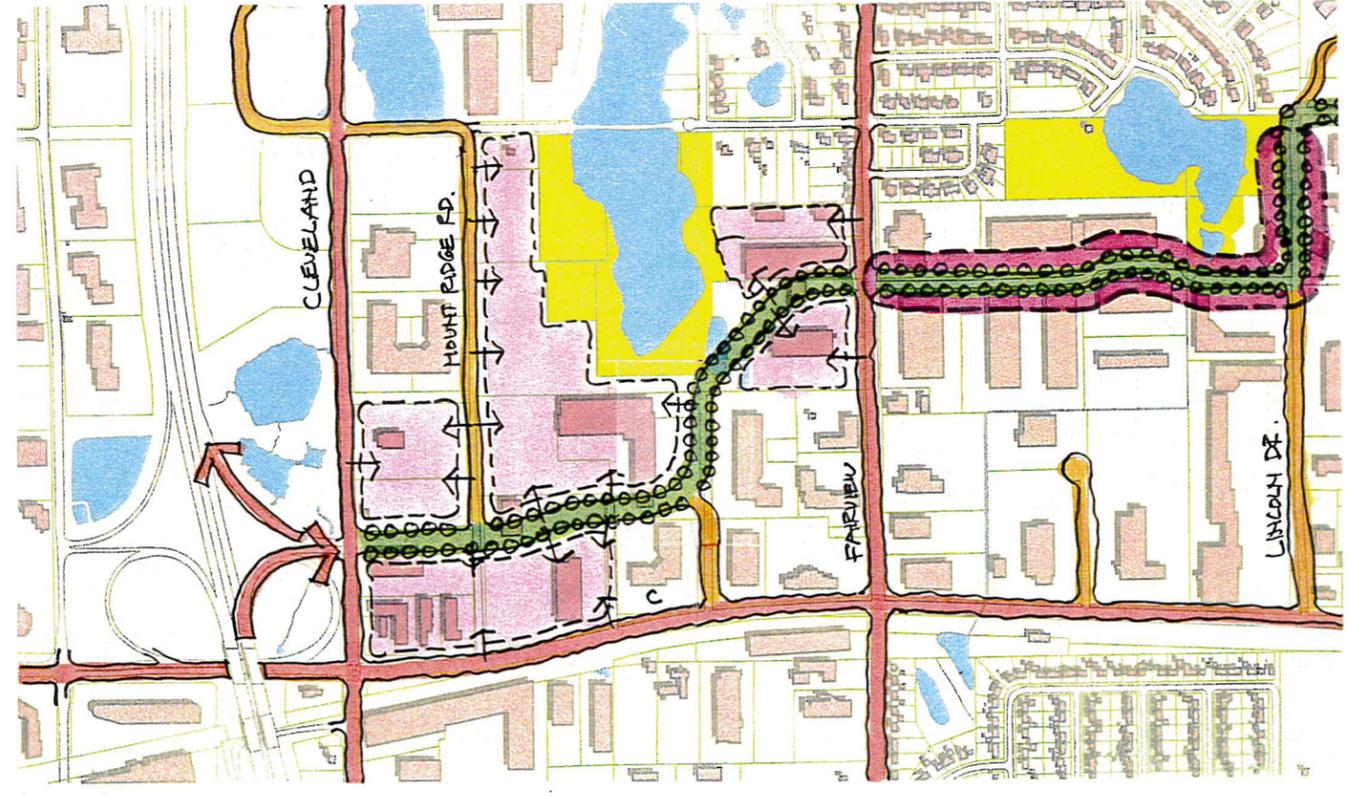
Stage 1



Stage 2



Stage 3



Stage 4

Figure 6  
Parkway Staging Options

September 30, 1996



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### III. Framework Plan

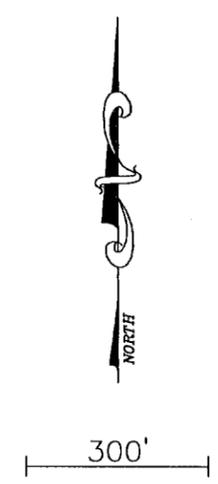
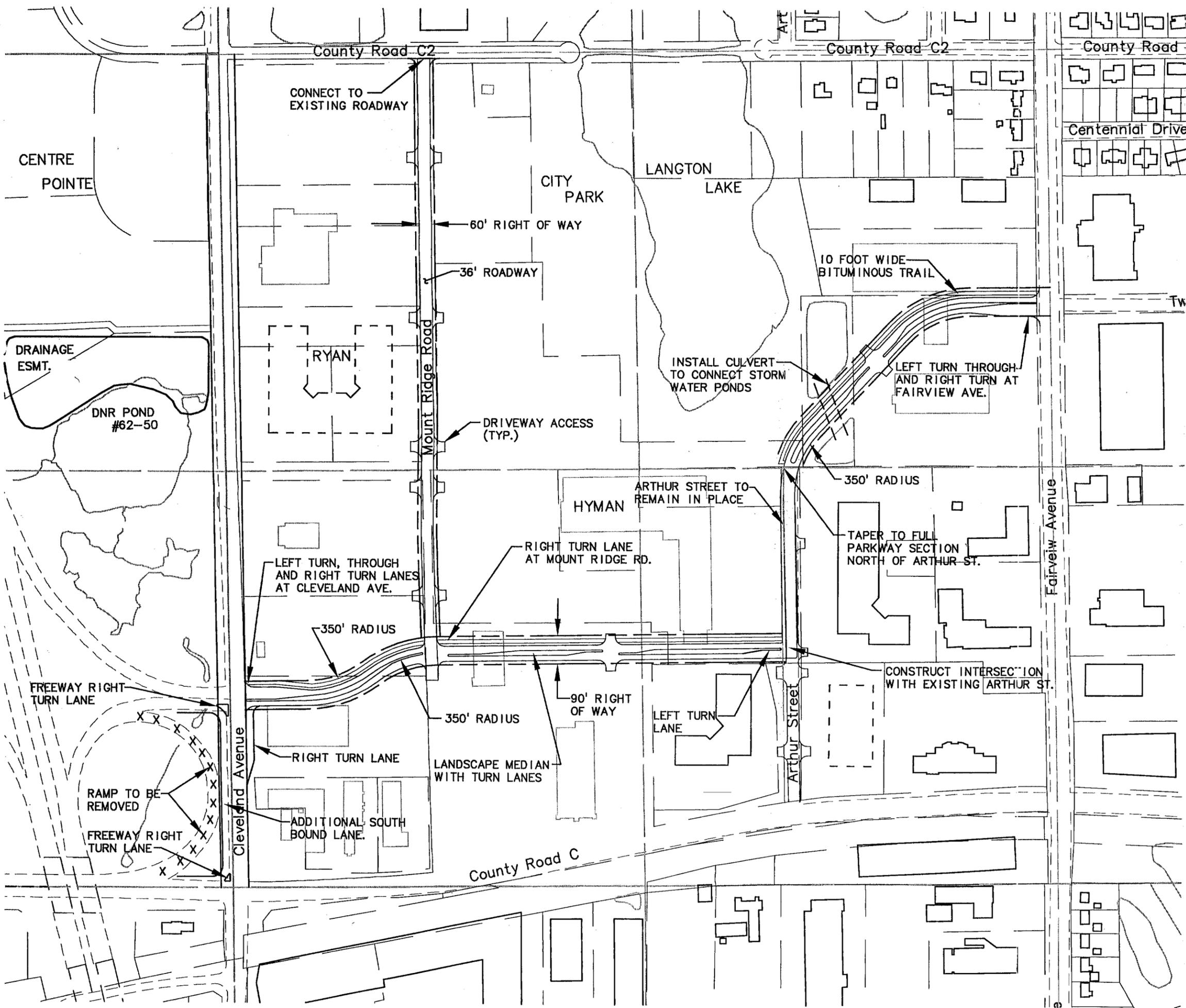
property, would most likely only be undertaken when the Hyman property becomes available for redevelopment.

4. **Stage 4.** The last stage, even though this stage could precede some of the other stages, would consist of completing the reconstruction and upgrading of the existing Parkway east of Fairview Avenue to the standards of the rest of the Twin Lakes Parkway.

Figures 7 and 8 represent layouts of two stages of the proposed Twin Lakes Parkway. Figure 7 shows the Parkway at the completion of Stage 2. Figure 8 shows the Parkway at the completion of Stage 3.

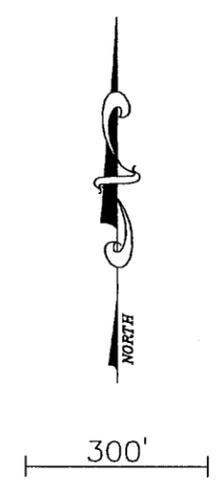
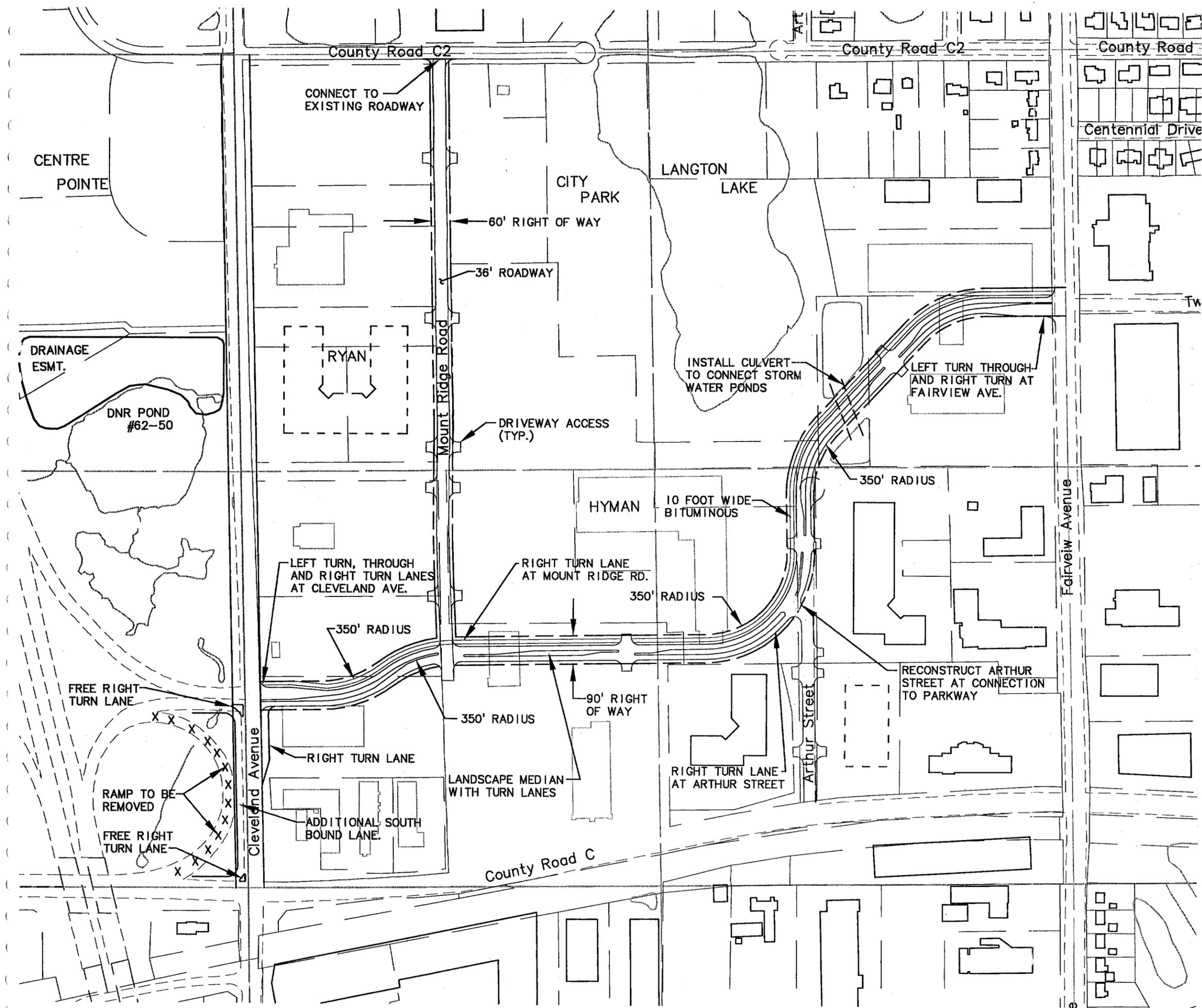
Figure 7  
**Recommended Parkway Plan  
 Stage 2**

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**Figure 8**  
**Recommended Parkway Plan**  
**Stage 3**

September 30, 1996



## IV. Urban Design Enhancements \_\_\_\_\_

This section establishes the cross-section and design treatments for the Twin Lakes Parkway and it identifies all additional urban design and landscaping enhancements which should be included in the total Twin Lakes district redevelopment and upgrading program.

### A. TWIN LAKES PARKWAY DESIGN

The issues that need to be resolved for the Twin Lakes Parkway are:

- Number of traffic lanes required and provisions for turning movements
- Trails and walkways
- Overall cross-section
- Urban design and landscaping treatments

1. **Traffic Lanes and Turn Lanes.** The first issue that needs to be addressed are the traffic circulation characteristics for the proposed Parkway. How many driving lanes should be provided and what provisions should be made for turning movements? An assessment of the proposed land uses in the district and the corresponding trips generated by these uses shows that the Average Daily Trips (ADT) on the Twin Lakes Parkway is forecast to be approximately 14,500 vehicles a day by the year 2010. A three-lane roadway, meaning a two-lane road with left-turn lanes at all major access points would be sufficient to accommodate the projected traffic volumes.

In terms of additional turn lanes, the recommendation is to provide right-turn lanes at all major cross-streets including Cleveland Avenue, Mount Ridge Road, Arthur Street, and Fairview Avenue.

2. **Trails and Walkways.** In order to enhance the community, provide access to the parks, and interconnect all the various uses and developments, it is

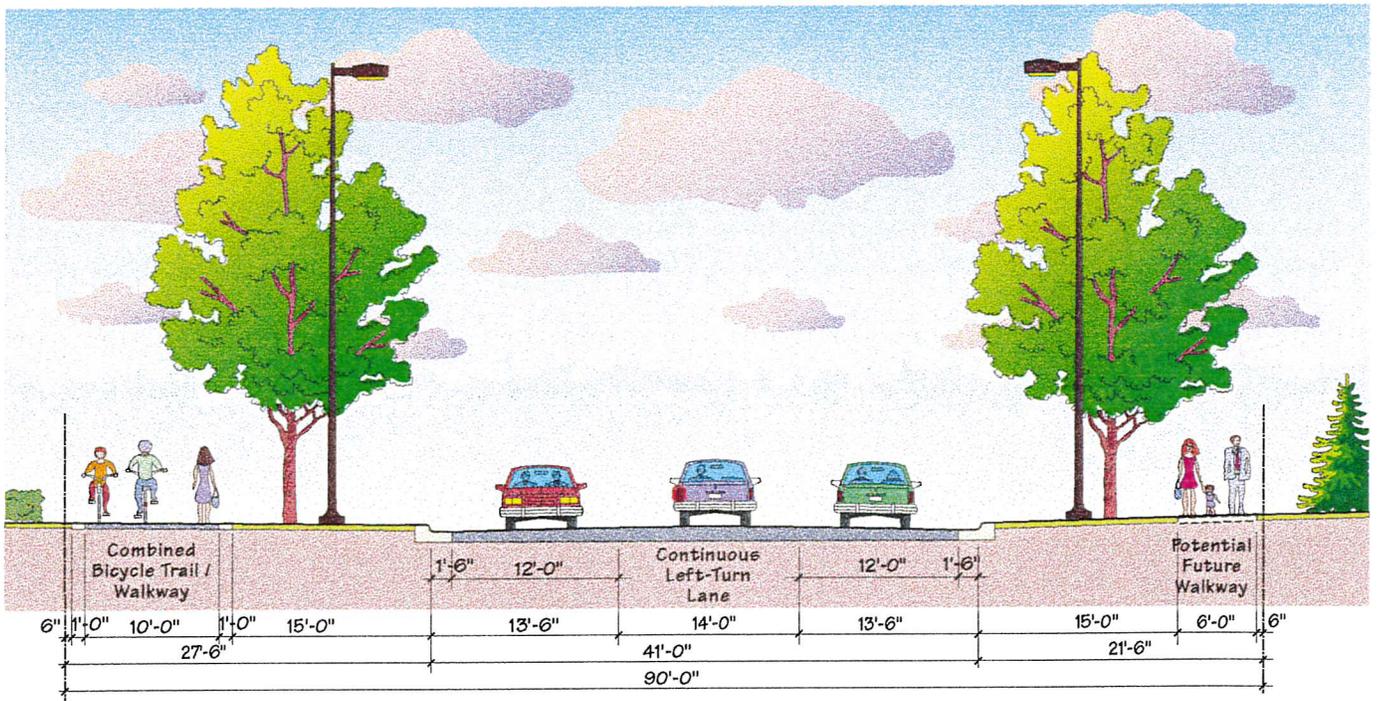
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## IV. Urban Design Enhancements

recommended that at least one type of path be included along all the major roadways in the Twin Lakes district. All paths should be designed as loops, so that no path results in a dead end, and the path system should be integrated and varied, so that users have an opportunity to take different routes and to experience various environments.

Since the uses in the district are primarily large commercial, office, office/showroom, and light industrial developments, which implies a relatively low level of bicyclist/pedestrian use, and in order to accommodate bicyclists as well as pedestrians, the recommendation is to include one combination bicycle trail/walkway along one side of all the major roadways, consistent with the City's Master Trail Plan, which is currently being developed. Further, the recommendation is to construct an eight- to ten-foot wide bituminous path and one-foot wide concrete edge bands on each side for a more finished appearance and easier maintenance.

3. **Parkway Cross-Section.** For the design of the Parkway, three different cross-sections (Figures 9 through 11) were evaluated. Although all three cross-sections are shown with a 90-foot wide right-of-way, there might be options to reduce the width of the required public right-of-way, such as by establishing easements on adjoining properties for the path and boulevard landscaping treatments or by reducing the widths of the boulevards.
  - a. **Cross-Section Concept A.** Concept A represents a two-lane roadway with a continuous left-turn lane. A combined bicycle trail/walkway would be located on one side of the roadway and a wide boulevard would be maintained on the other side, either for extra landscaping or for a future walkway.
  - b. **Cross-Section Concept B.** Concept B represents a true parkway configuration with one-way traffic lanes on each side separated by a landscaped median. The landscaped median would be reduced to a concrete island at all median breaks and cross-streets.
  - c. **Cross-Section Concept C.** Concept C is similar to Concept B, except that it includes a wider median and it would have a narrower boulevard on one side which would not permit the installation of a future walkway, unless the landscaped boulevard is reduced in width. This concept would permit landscaping in the median throughout the



**Typical Section**

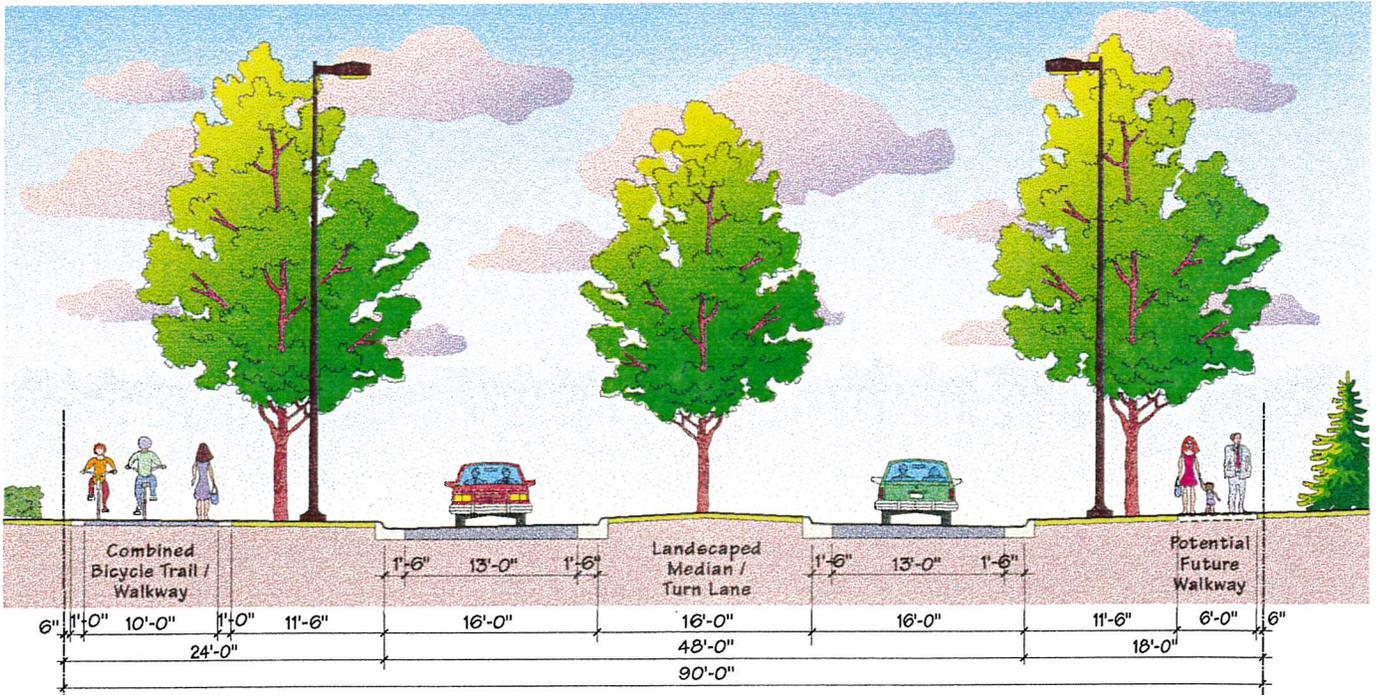
**Figure 9**  
**Parkway Concept A - No Median**

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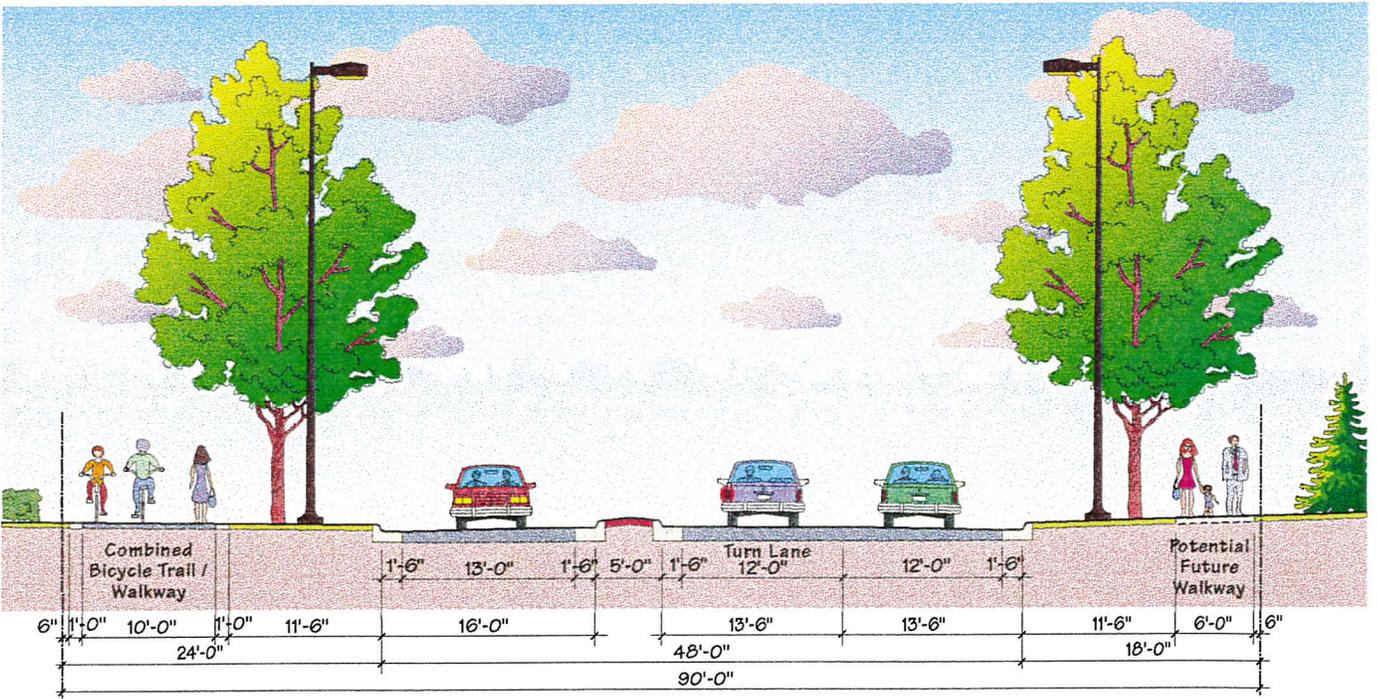
**Twin Lakes Parkway Master Plan**  
CITY OF ROSEVILLE, MINNESOTA

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Typical Parkway Section



Section at Turn Lane

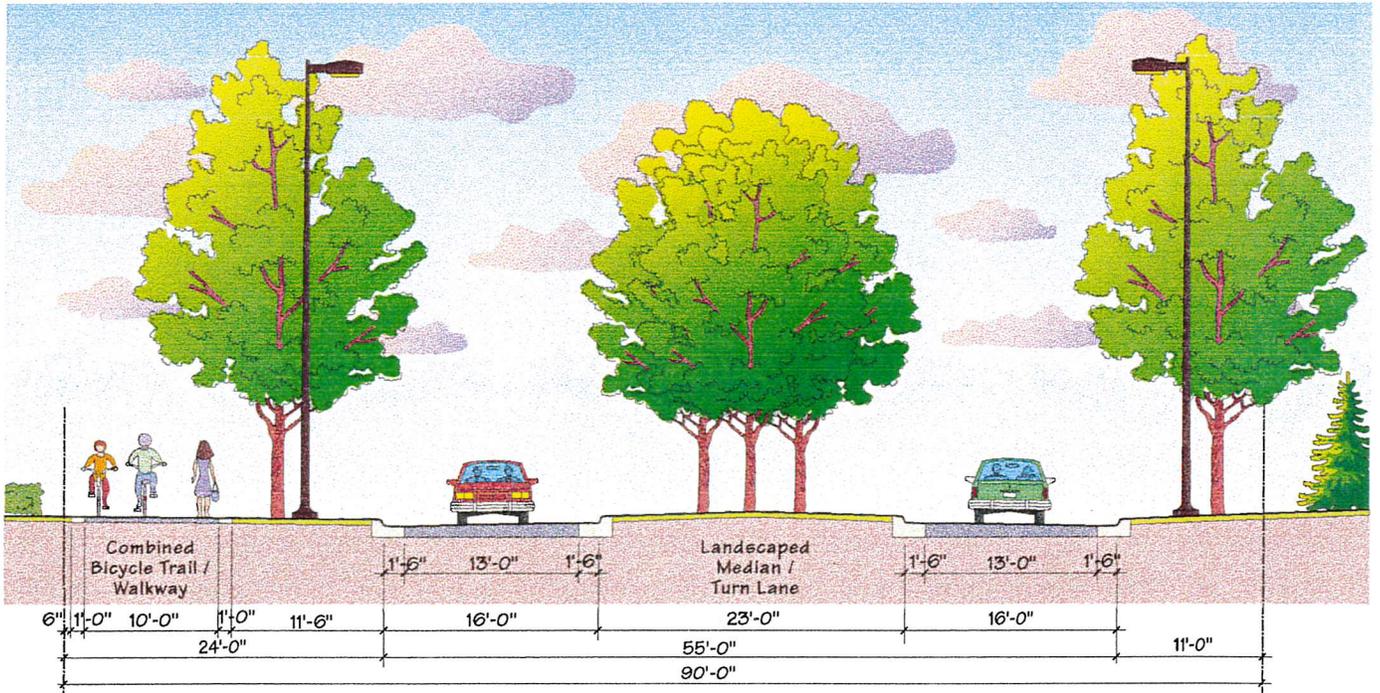
Figure 10  
Parkway Concept B - Narrow Median

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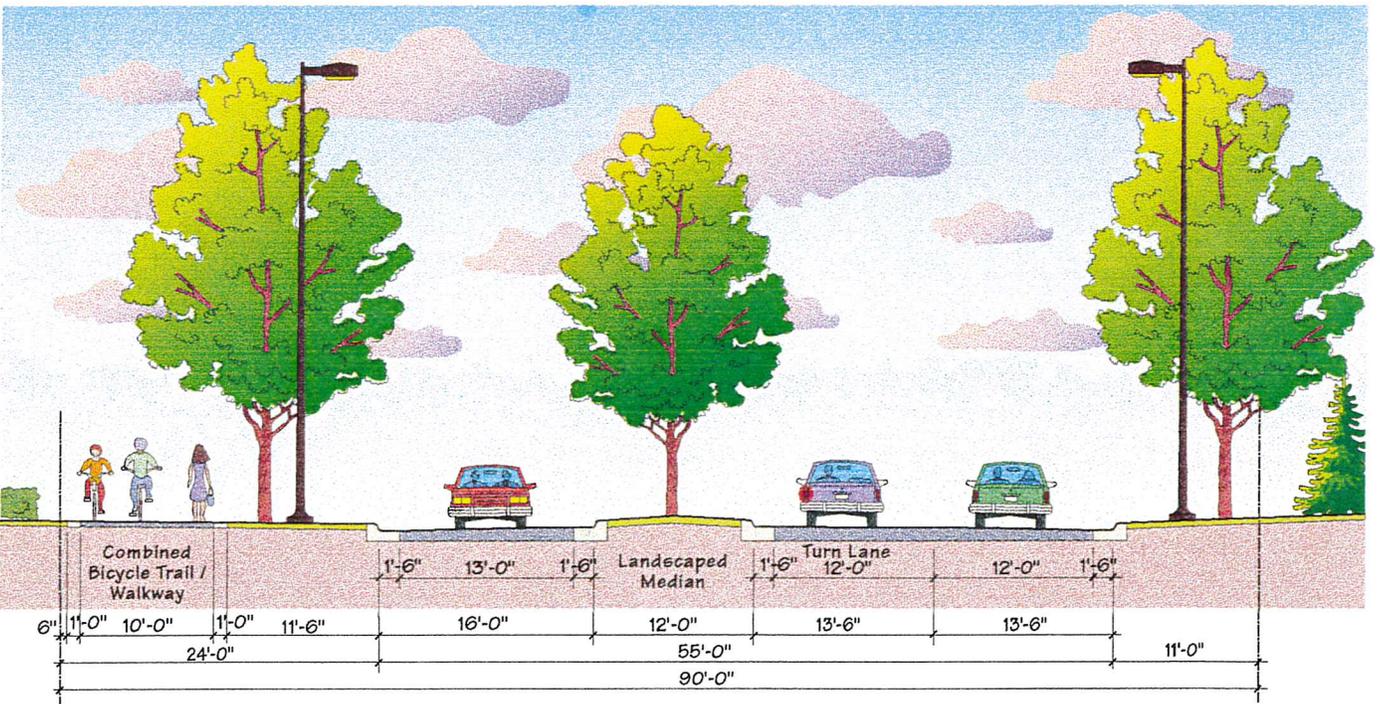
Twin Lakes Parkway Master Plan  
CITY OF ROSEVILLE, MINNESOTA

0 5 10 Feet  
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Typical Parkway Section



Section at Turn Lane

Figure 11  
Parkway Concept C - Wide Median

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#### IV. Urban Design Enhancements

length of the corridor, since even at the turn-lane locations the median would be wide enough to accommodate landscaping.

The two key issues in selecting a cross-section design for the parkway are image/appearance and maintenance.

Since one of the goals of the City is to "...encourage quality design in new developments..." and since the name itself -- "Twin Lakes Parkway" -- implies a higher standard in terms of image and appearance, the optimum choice, consistent with the recommendations in the 1994 Comprehensive Plan that the Parkway be of high quality, would be Concept C, the parkway section with the wide landscaped median. Also, since the Twin Lakes Parkway will serve as an entry and a front door to the City from I-35W, a higher level of enhancement would be appropriate. The implications of this option, however, are that the City would have to assume responsibility for maintaining the median, or establish some method, such as a Special Services District for the median's maintenance.

On the other hand, if the City does not want to assume the responsibilities for upkeep and maintenance of a median, Concept A would be the preferred option. This option, however, even with additional landscaping along the boulevards, would not provide the "parkway" character that Concepts B and C would.

The recommendation is to select Concept C as the preferred option, since Concept C would provide the strongest "parkway" image and since it would add the greatest value to the Twin Lakes redevelopment district and the City. To further enhance the image and character of the Twin Lakes Parkway, it is recommended that the "shoebox" light fixtures, such as the ones already installed in parts of the district, be installed on both sides of the Parkway, as well as along the other major roadways in the district, at approximately 150' on center.

#### B. TWIN LAKES DISTRICT ENHANCEMENTS

In addition to the special treatments recommended for the Twin Lakes Parkway, there are a number of improvements or enhancements which could benefit the whole Twin Lakes district. The Urban Design Enhancement Plan (Figure 12) illustrates all the urban design and landscaping enhancements proposed for the Twin Lakes district. Following is a summary of the proposed enhancements:

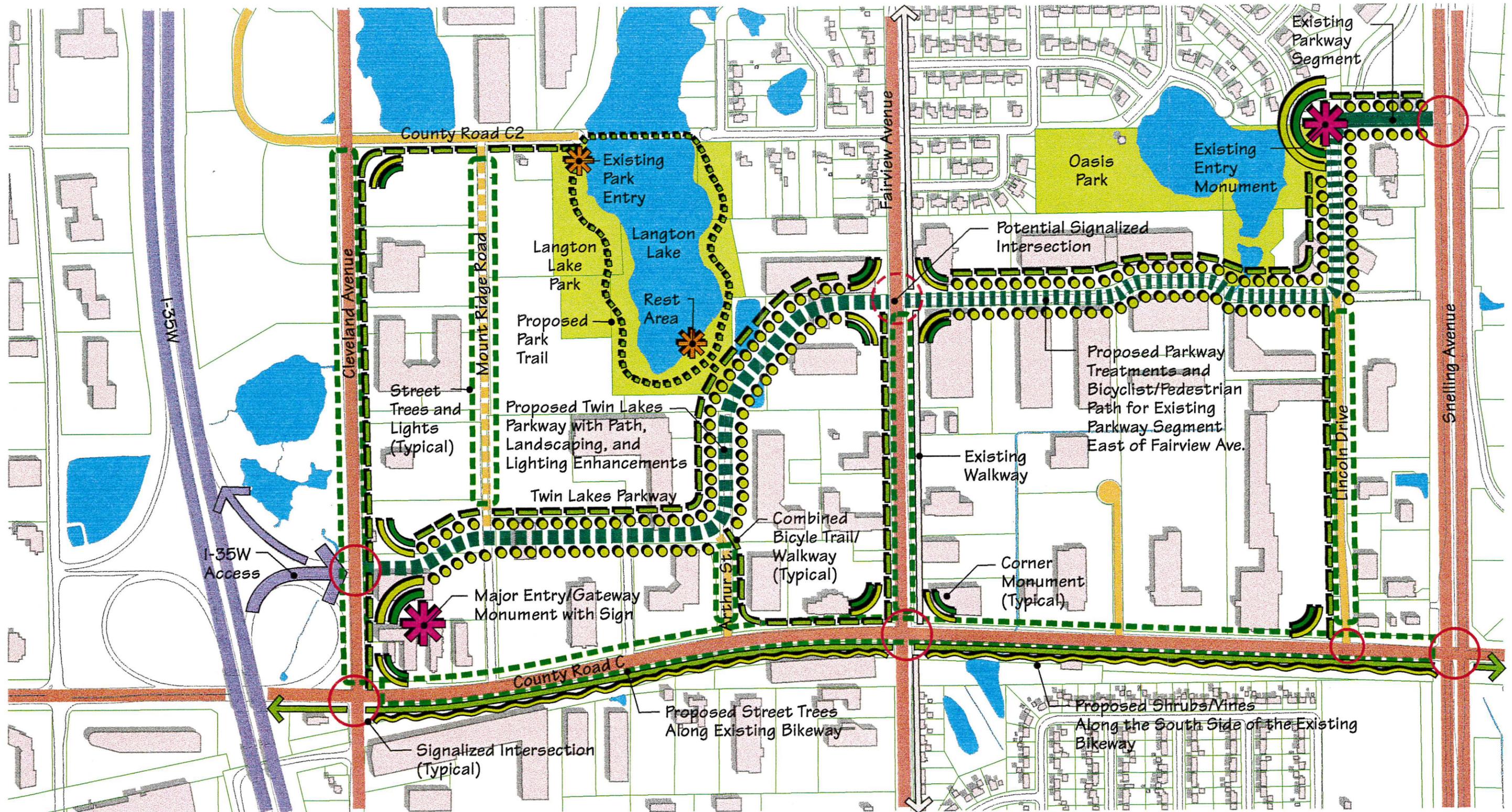


Figure 12  
**Recommended Urban Design Enhancement Plan**

September 30, 1996

**Twin Lakes Parkway Master Plan**  
 CITY OF ROSEVILLE, MINNESOTA



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## IV. Urban Design Enhancements

1. **Parkway.** A parkway design with boulevard landscaping, lighting, and a landscaped median in the segment between Cleveland Avenue and Fairview Avenue. East of Fairview Avenue the existing Parkway should be enhanced with boulevard landscaping and light fixtures.
2. **Path System.** In addition to the existing bicycle trail along the south side of County Road C, the walkway along the east side of Fairview Avenue, and the proposed trail around Langton Lake, a combined bicycle trail/walkway in the following locations:
  - North side of the Twin Lakes Parkway
  - East side of Cleveland Avenue
  - South side of County Road C2
  - East side of Arthur Street
  - A trail link between the Twin Lakes Parkway and the trail around Langton Lake
  - North side of County Road C, between Arthur Street and Fairview Avenue
  - West side of Cleveland Avenue, between Twin Lakes Parkway and County Road C
  - West side of Lincoln Drive
3. **Major Entry/Gateway Monument.** In addition to the existing major entry monument at the intersection of County Road C2 and Lincoln Drive, a second major entry/gateway monument should be developed for the I-35W entry at the intersection of Twin Lakes Parkway and Cleveland Avenue.

This entry/gateway monument treatments would be located in the northeast and southeast quadrants of the intersection. The entry/gateway monuments would include two curving ornamental railings similar to the brick pilaster and wrought iron railings at the existing entry monument, a backdrop of spruces and ornamental trees, and a foreground of ornamental shrubs and flowers. The southeast quadrant would include a solid brick wall segment with the words "Roseville Twin Lakes".

4. **Corner Monuments.** In addition to the major entry monuments, smaller-scale corner monuments would be installed at the following key intersections:
  - SE quadrant of Cleveland Avenue and County Road C2
  - NE quadrant of County Road C and Cleveland Avenue

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#### IV. Urban Design Enhancements

- All four quadrants of Twin Lakes Parkway and Fairview Avenue
- NW and NE quadrants of County Road C and Fairview Avenue
- NW quadrant of County Road C and Lincoln Drive

The corner monuments would include the curving ornamental railings, a background of evergreen trees, and a foreground of ornamental shrubs.

5. **County Road C Trail Enhancements.** In addition to the street trees proposed for all major roadways in the Twin Lakes district, ivy or a row of shrubs should be planted along the fence on the south side of the path to provide screening and to enhance the appearance of the path.
6. **Enhancements for Twin Lakes District Roadways.** In addition to the improvements discussed above, enhancements are proposed for Cleveland Avenue, Mount Ridge Road, Arthur Street, Fairview Avenue, Lincoln Drive, and County Road C. The improvements would include, depending upon the location, street lighting, street trees, and the combined bicycle trail/walkway.

## V. Drainage / Ponding

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The study area includes two major drainage basins which are separated by a drainage divide running north-south located west of Langton Lake and between Prior Avenue and Mount Ridge Road. The eastern drainage basin drains to Langton Lake and can be further subdivided into three subbasins: the northeast subbasin, the north central subbasin and the southeast subbasin. The western drainage basin drains to the wetland complex located between I-35W and Cleveland Avenue. Figure 13 illustrates the boundaries of the drainage basins within the study area along with the proposed trunk storm sewer improvements.

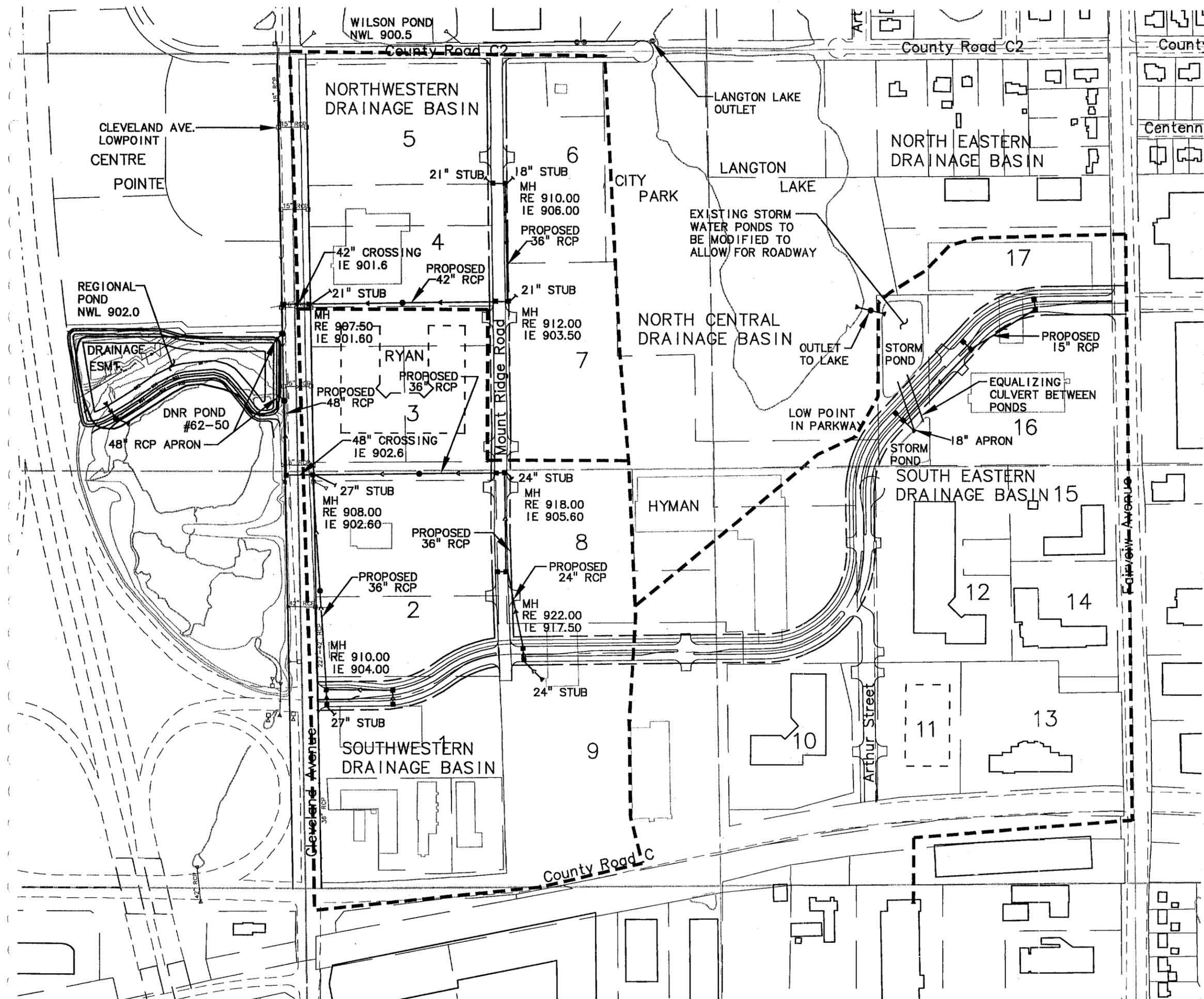
The northeastern drainage subbasin includes existing residential and commercial properties located between County Road C-2 and a drainage divide running east-west approximately 600 feet south of County Road C-2. This subbasin drains directly into Langton Lake by overland flow and/or local storm sewer systems. Redevelopment is not proposed for this area and existing topography is not conducive for the redirection of runoff into a regional pond. Therefore, no storm drainage improvements are proposed for this subbasin.

The north central drainage subbasin includes approximately 18.0 acres of land located west and southwest of Langton Lake that currently drains directly into the lake by overland flow. Approximately 6.0 acres of this subbasin located adjacent to the western shore of Langton Lake is dedicated as City parkland. It is recommended that runoff from the remaining area (the eastern portions of parcels 7 and 8) be directed to the existing treatment ponds located on the southeast shore of Langton Lake. It is estimated that the redevelopment of these parcels would require approximately 1.5 acre-feet of permanent pool volume to meet NURP criteria. Minimal modifications to the existing ponds would achieve the additional volume required for this subbasin.

The southeastern drainage subbasin includes approximately 68 acres of land located within the study area and 20 acres of industrial land located south of County Road C. Run off from this subbasin is collected by existing trunk storm sewer located along County Road C and Arthur Street and interior storm sewer located between Parcels 12, 13, 14 and 15. Existing twin storm water ponds located northeast of the Arthur Street cul-de-sac currently treat runoff

Figure 13  
**Storm Sewer**

September 30, 1996



300'

**LEGEND**

- EXISTING STORM
- STORM SEWER
- CATCH BASIN
- PIPE APRON
- MANHOLE

**Twin Lakes Parkway Master Plan**  
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0 300 Feet



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## V. Drainage / Ponding

from this subbasin prior to discharging into Langton Lake. Storm sewer facilities on the proposed Twin Lakes Parkway extension east of Arthur Street will drain into the existing twin ponds. Storm water runoff from Parcels 14, 15, 16 and 17 would be directed to the existing storm water ponds for treatment (this is substantially true currently). The ponds will require to be reconfigured slightly to allow the construction of Twin Lakes Parkway, which could be accomplished in concert with the redevelopment of parcels 16 and 17.

The western portion of the site includes approximately 56 acres of land which has been divided into the northwestern and southwestern drainage basins for storm sewer network purposes. Currently the runoff from this subbasin drains into a series of wetlands located west of Cleveland Avenue through several culvert crossings on Cleveland Avenue. As a condition for redevelopment in this basin, provisions must be made to treat storm water runoff prior to its discharge into the natural wetlands. The most efficient means of providing the required storm water treatment is through the common utilization of a regional pond for all the Parcels within the redevelopment. The alternative approach of constructing several smaller ponds within the subbasin does produce a savings in storm sewer system costs due to smaller pipe sizes. However, this alternative would require a significantly larger total land area for ponding and would produce an overall poorer quality of water.

The proposed regional ponding site is located within MnDOT right of way between Cleveland Avenue and I-35W on the northern edge of the existing wetland complex. An existing 1.0 acre drainage easement located in the southwest corner of the Centre Pointe development is also proposed to be utilized for the regional pond. This site was chosen due to its proximity to receiving waters for the drainage basin and it requires no funds for acquisition.

A pond site in the southeast quadrant of the intersection of County Road C-2 and Cleveland Avenue was considered but rejected due to the loss of approximately 2.0 acres of developable land. In order to utilize the existing 1.0 acre easement for the Twin Lakes western regional pond, the pond design must incorporate treatment for the runoff from approximately 16.8 acres of land within the Centre Pointe development.

The design parameters for the regional pond assume that approximately 80% of the redeveloped sites will consist of impervious surfaces such as parking lots, roadways and buildings. Based on the requirements of the Rice Creek Watershed District and current Roseville design standards, the regional pond design must meet the requirements of the Nationwide Urban Runoff Program (NURP) for storm water treatment. These requirements include the following design criteria:

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## V. Drainage / Ponding

1. The permanent pool volume below the normal outlet shall be greater than or equal to the runoff from a 2.5 inch rainfall over the entire contributing drainage area assuming full development.
2. The permanent pool average depth shall be greater than or equal to four feet but less than or equal to ten feet.
3. Pond side slopes above the normal water elevation shall be no steeper than 3(horizontal):1(vertical). A ten foot wide basin shelf below the normal water surface with a maximum slope ratio of 10(horizontal):1(vertical) is recommended to enhance wildlife habitat, reduce potential safety hazards and improve access for long term maintenance.

In addition to the NURP recommendations for storm water treatment, the pond should be designed to provide some detention storage. Detention storage should be provided to reduce peak discharges which results in the reduction of the bounce experienced by natural water bodies downstream and reduces flows to downstream storm sewer systems.

Incorporating the basin characteristics and the design requirements described above results in a regional pond with a surface area of approximately 2.1 acres and a total permanent pool volume of 12.5 acre-feet.

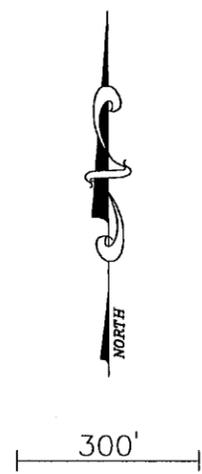
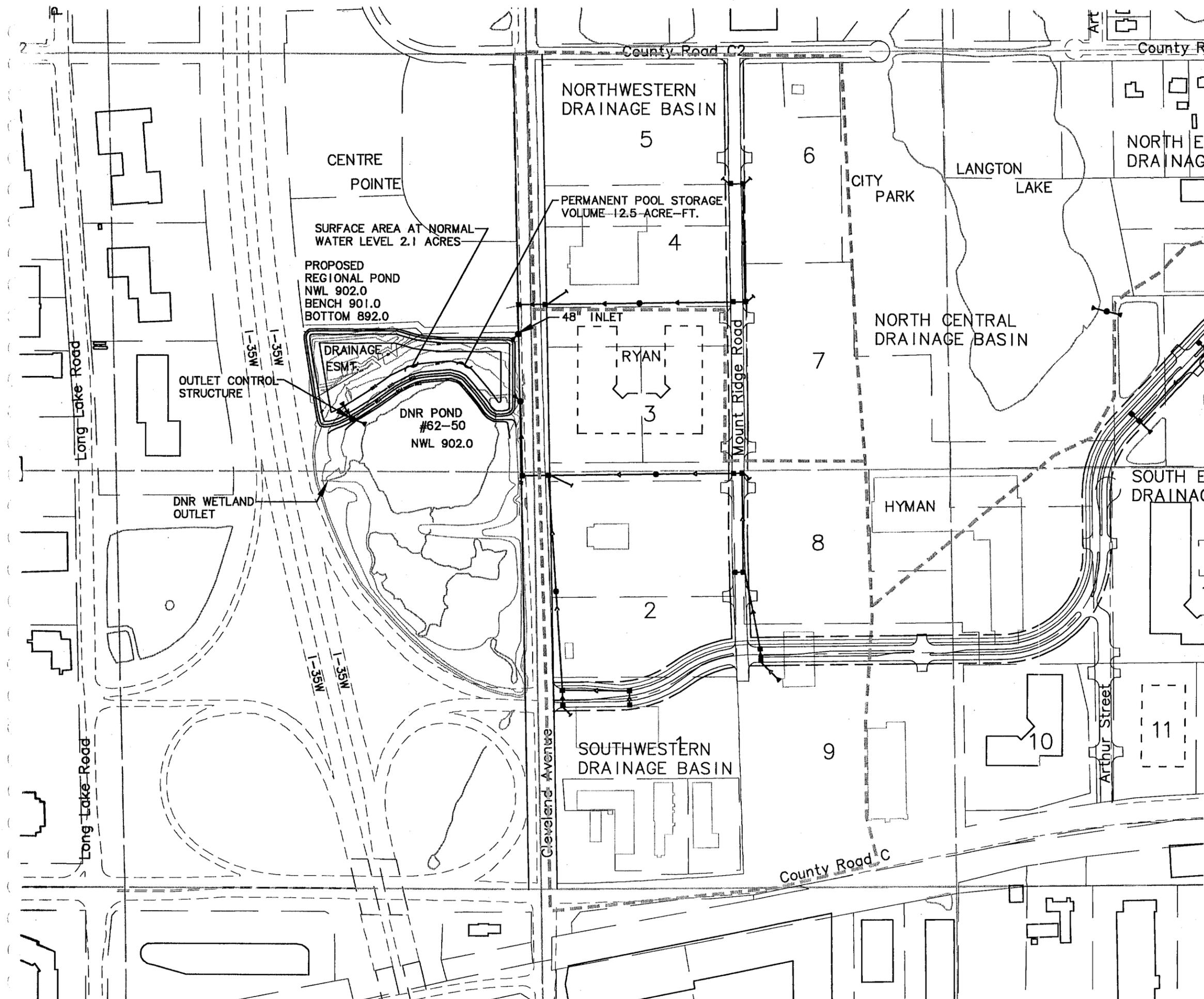
Figure 14 illustrates the proposed regional pond location and shape.

The proposed regional pond includes approximately 0.9 acres of impact to DNR wetland #62-50 located directly to its south. The impact area is a result pond excavation and the construction of an earthen berm to separate the storm water pond from the existing wetland. Several meetings and discussions have taken place between City staff, BRW staff, DNR representatives, Rice Creek Watershed District staff, and the Army Corps of Engineers regarding the proposed impact to DNR wetland #62-50. Impacts to DNR wetlands equal to or greater than one acre require that an Environmental Assessment Worksheet (EAW) be prepared prior to the granting of any permit. The agencies involved strongly recommend that the level of impact be kept below the one acre threshold in order to avoid the potential time delays and costs that could result from the EAW process.

Information regarding the proposed regional pond has been sent to the MnDOT right-of-way staff to request a Limited Use Permit. However, there have been no follow-up discussions about the project to date with MnDOT

Figure 14  
**Regional Pond**

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## V. Drainage / Ponding

right of way staff. It is expected that a Limited Use Permit for the regional pond will be granted by MnDOT since the nature of the property is not conducive for roadway use and the area is currently functioning as a storm water pond.

It is anticipated that the agencies will approve the permits necessary for the regional pond construction contingent on the following items:

1. Limit the total impact to DNR wetland #62-50 to less than 1.0 acre.
2. Provide additional trees and/or shrubbery to be planted around the existing wetland basin in bare areas for wildlife habitat enhancement.
3. Excavate sediment deposits from existing outlets into the wetland complex.
4. Revegetate all disturbed areas and embankments with native grasses which thrive in wetland environments.
5. The foreslope of the berm between the existing wetland and the storm water pond shall not be greater than 5 (horizontal):1 (vertical) and respread muck materials on the slope.

It is anticipated that it will take approximately 2 months to acquire the necessary permits for the construction of the regional pond. The following is a list of the permit agencies and corresponding permits:

- Minnesota Department of Transportation -- Limited Use Permit
- Minnesota Department of Natural Resources -- Protected Watershed Permit
- Army Corps of Engineers -- Nationwide Permit
- Rice Creek Watershed District -- Grading Permit
- Minnesota Pollution Control Agency -- 401 Certification

## VI. Infrastructure Improvements \_\_\_\_\_

### A. ROADWAY

The proposed roadway improvements in the study area include the construction of Mount Ridge Road running north-south on the site and Twin Lakes Parkway running east-west across the site between Cleveland Avenue and Fairview Avenue. Figures 7 and 8 illustrate the proposed roadways in two subsequent phases of construction.

1. **Mount Ridge Road.** Mount Ridge Road is proposed to be a 36-foot wide bituminous roadway with concrete curb and gutter. The proposed roadway extension would be approximately 1900 feet long. Driveways are proposed on Mount Ridge Road to provide access to Parcels 2, 3, 4, 5, 6, 7 and 8. The proposed roadway includes a continuous 8 foot bituminous walk along its entire length.

The proposed pavement section assumed would meet the design requirements for a 10 ton classification.

2. **Twin Lakes Parkway.** Twin Lakes Parkway is proposed to be a divided roadway with two 16-foot through lanes and a 23-foot landscaped median. The proposed roadway extension would be approximately 3400 feet long including a 600 foot long common section with Arthur Street. Driveways are proposed on Twin Lakes Parkway to provide access to Parcels 1, 8, 9, 10, 12, 16 and 17.

The proposed pavement section assumed would meet the design requirements for a 10 ton classification. A ten foot wide bituminous pathway is proposed to be constructed along the entire length of the parkway. Left turn lanes would be provided at all driveway access points. Right turn lanes would be provided at the intersections with Fairview Avenue, Cleveland Avenue, Mount Ridge Road and Arthur Street. Cost estimates also include signal modifications and reconstruction at Cleveland Avenue. Further discussions with MnDOT staff will be scheduled

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## VI. Infrastructure Improvements

regarding the construction of a right-in/right-out access to Snelling Avenue at the east of the study area.

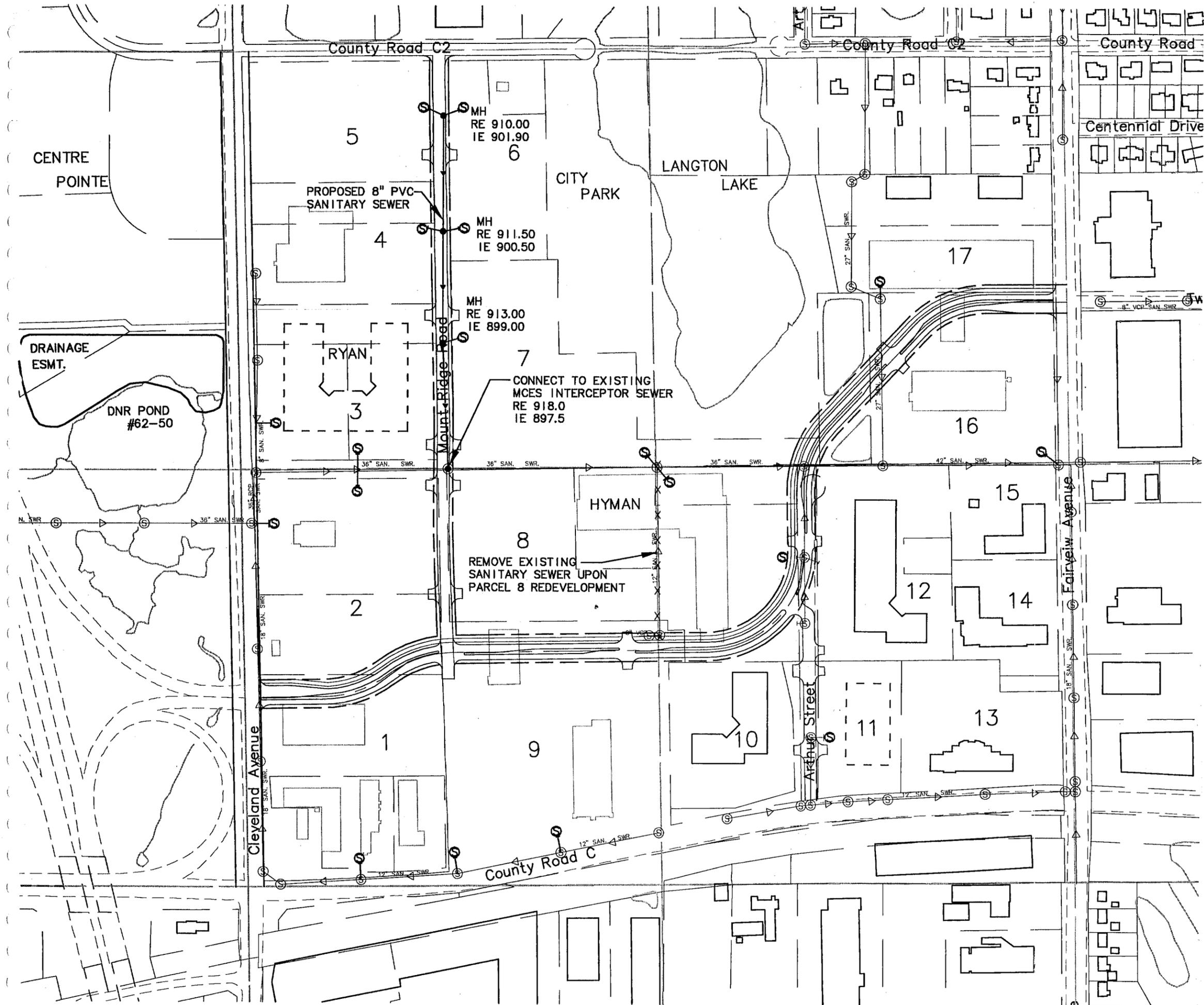
3. **Cleveland Avenue.** Cleveland Avenue would be modified between County Road C and the I-35W interchange. An additional right lane would be added to southbound traffic between the two nodes with traffic channelizing islands at the I-35W exit ramp and County Road C to provide better traffic flow for right turning vehicles at both intersections. The removal of the existing exit loop for westbound County Road C traffic would be necessary prior to the construction of an additional right lane on Cleveland Avenue. A right turn lane for northbound Cleveland Avenue traffic entering Twin Lakes Parkway would also be constructed. The improvements to Cleveland Avenue and modifications to the I-35W ramp could be done in conjunction with the construction of Twin Lakes Parkway or following the construction based on the actual need demonstrated. Striping of Cleveland Avenue between County Road D and the I-35W interchange should be reviewed at the time of the connection of Twin Lakes Parkway to consider changing it from a four lane to a three lane design.
4. **Fairview Avenue.** Fairview Avenue is not expected to warrant improvements at the proposed intersection with Twin Lakes Parkway in the near term, however, periodic review of this intersection would be recommended to respond to changing conditions.
5. **County Road C.** County Road C was not evaluated as a part of this study, however, it is recommended that an upgrade of this arterial roadway be reviewed and programmed if warranted.

### B. SANITARY SEWER

The study area includes an extensive sanitary sewer network with trunk mains along Cleveland Avenue, County Road C, and Fairview Avenue and several shorter lateral sewers throughout the interior and perimeter of the site. All of the sanitary sewer facilities flow into an existing Metropolitan Council Environmental Services (MCES) interceptor sewer which bisects the study area from west to east along the Iona Lane right of way and dedicated easements. The interceptor sewer increases in size from 36 inches in diameter on the western half of the site to 42 inches in diameter east of Arthur Street. Figure 15 illustrates the existing sanitary sewer infrastructure and the proposed additions

**Figure 15**  
**Sanitary Sewer**

September 30, 1996



300'

**LEGEND**

- EXISTING SANITARY SEWER
- EXISTING MANHOLE
- ⊙ PROPOSED SANITARY SEWER SERVICE POINT
- PROPOSED SANITARY SEWER

**Twin Lakes Parkway Master Plan**  
CITY OF ROSEVILLE, MINNESOTA

0 300 Feet  
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## VI. Infrastructure Improvements

to the system. Redevelopment parcels have been numbered to assist in describing service locations.

Parcel 1 is served by existing sanitary sewer located along County Road C and Cleveland Avenue. Parcels 2, 3 and 4 are served by existing sewer along Cleveland Avenue. Parcels 5 and 6 do not have existing sewer available and would require that sewer be extended from the MCES trunk sewer to the north. The proposed extension would require the construction of approximately 1100 feet of 8" PVC sewer beginning south of County Road C-2 and running to the MCES trunk sewer. This extension would also provide additional service for parcels 4 and 7. Parcels 7 and 8 are served by the MCES trunk sewer situated between them. Parcels 9, 10, 11, 12, 13, 14 and 15 are served by existing sewer located in County Road C, Arthur Street and Fairview Avenue. Parcels 16 and 17 are served by existing sewer located in an easement on the western edge of their properties running south from County Road C-2 to the MCES interceptor sewer.

The existing sanitary sewer located in Parcel 8 would be removed upon the redevelopment of that parcel. Construction of the proposed 8-inch sanitary sewer extension would be accomplished in conjunction with the construction of Mount Ridge Road.

Estimated construction costs for the sanitary sewer extension described above and shown on Figure 14 are included in Section VII. The estimated costs do not include the construction of sanitary sewer stubs from existing manholes to redevelopment parcels.

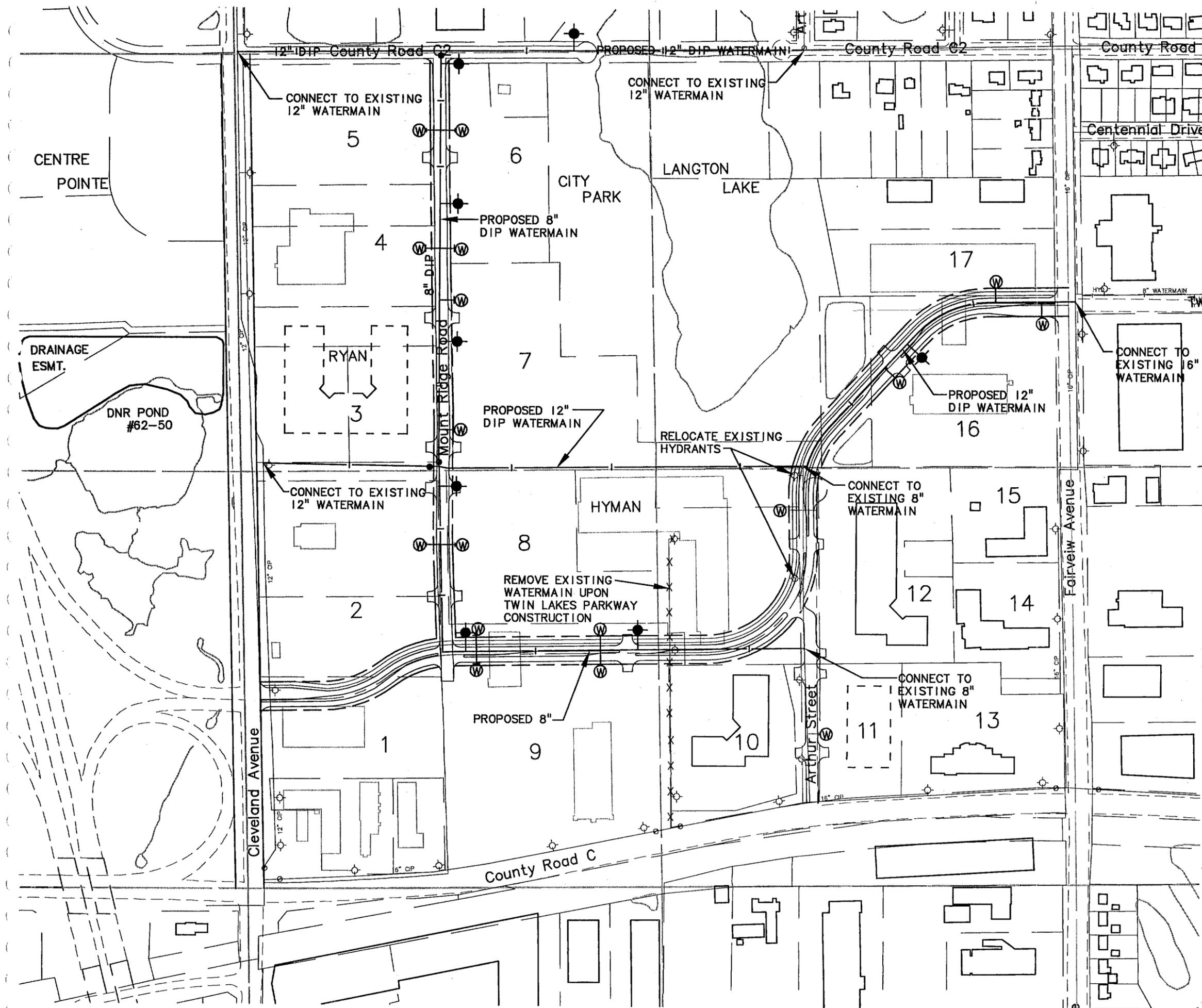
### C. WATERMAIN

The study area also includes an extensive network of watermains with 16 inch diameter mains running along Fairview Avenue and County Road C and a 12-inch main running along Cleveland Avenue. A 12-inch main extends west of Fairview along County Road C-2 to Arthur Place. In addition, Arthur Street and Prior Avenue include 8-inch watermains which both extend approximately 1100 feet north of County Road C and dead end. Figure 16 illustrates the existing watermain infrastructure and the proposed additions to the system.

All parcels with the exception of parcels 7 and 8 currently have adequate watermain service available from the existing network. The watermain infrastructure improvements recommended in this study include the necessary

Figure 16  
**Watermain**

September 30, 1996



300'

**LEGEND**

- EXISTING WATERMAIN
- EXISTING HYDRANT
- PROPOSED WATERMAIN SERVICE POINT
- PROPOSED HYDRANT
- PROPOSED WATERMAIN

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0 300 Feet



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## VI. Infrastructure Improvements

system extensions required to serve parcels 7 and 8, improve service to the remaining parcels and would also provide continuous watermain “loops” for the watermain grid.

A properly “looped” system provides several important qualities for a water distribution system. By providing numerous loops and redundant paths in the pipe network, water quality is improved, system maintenance is simplified due to the availability of additional bypass routes and water pressures and flows may increase in some areas thereby improving fire fighting capacity. For these reasons it is desirable to construct a “looped” system where ever possible.

An 8-inch watermain is proposed to be constructed along the entire length of Mount Ridge Road from County Road C-2 to Twin Lakes Parkway. This watermain would include hydrants for fire protection and services for parcels 2, 4, 5, 6, 7 and 8. Parcel 3 is currently under construction and is scheduled to be served from a proposed 12-inch watermain to its south. An 8-inch main is proposed to be constructed along Twin Lakes Parkway between the proposed 8-inch watermain in Mount Ridge Road and an existing 8-inch watermain located in Arthur Street. This watermain will also include hydrants and services to parcels 8 and 9.

Two 12-inch watermains are proposed to be constructed in the redevelopment area. A 12-inch watermain is proposed to be constructed along County Road C-2 connecting an existing 12-inch watermain in Cleveland Avenue and the 12-inch watermain extension at Arthur Place. This watermain connection would provide a “looped” network for the proposed 8-inch watermain in Mount Ridge Road and would provide a connection between existing trunk watermains on Cleveland and Fairview Avenues approximately one-half mile north of County Road C. Currently, there is a one mile separation of connecting watermains between the two arterial roadways.

The second proposed 12-inch watermain would be installed along the existing MCES sanitary sewer between Cleveland Avenue and Arthur Street then follow the alignment of Twin Lakes Parkway east to Fairview Avenue. The proposed 12-inch watermain would be connected to the proposed 8-inch watermain in Mount Ridge Road and the existing 8-inch watermain in Arthur Street. The existing 8-inch watermain in Arthur Street is currently a “dead end” line and would become “looped” with the connection to this watermain. The proposed 12-inch watermain would also provide an additional trunk connection between the 12-inch watermain on Cleveland Avenue and the 16-inch watermain on Fairview Avenue approximately one quarter mile north of County Road C.

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## VI. Infrastructure Improvements

The existing watermain located along the Prior Avenue Right of Way would be removed to County Road C in the event that the City vacates the Prior Avenue Right of Way.

Both 8-inch watermains and the 12-inch watermain east of Arthur Street would be constructed in conjunction with the construction of Mount Ridge Road and Twin Lakes Parkway. The first segment of 12-inch watermain extending east of Cleveland Avenue along the MCES easement is proposed to be constructed in conjunction with the development of Parcel 3 which is scheduled for completion in 1997. The segment of 12-inch watermain between Mount Ridge Road and Arthur Street could be done as an independent project if desired or combined with other public improvements in the area. This segment should require minimal easement acquisition due to its proximity with the existing MCES sewer. The 12-inch watermain extension along County Road C-2 could be completed as a separate project as funding allows, however, it is recommended that the segment between Mount Ridge Road and Cleveland Avenue be completed in conjunction with the construction of Mount Ridge Road in order to avoid a long dead end line in Mount Ridge Road.

Estimated construction costs for the watermain extensions described above and shown on Figure 16 are included in Section VII. The estimated costs do not include the construction of watermain service stubs from existing watermain.

### D. STORM SEWER

Preliminary design of storm sewer facilities required as a part of the Twin Lakes redevelopment has been completed for this report. The design parameters utilized are based on a 10 year frequency storm event for pipe sizing and catch basin location. Extensive storm sewer facilities are located throughout the eastern half of the study area. The western drainage area currently includes minimal interior storm sewer facilities with several culvert crossings of Cleveland Avenue from west to east. Proposed storm sewer improvements include lateral and trunk storm sewer ranging from 12 inches to 48 inches in diameter. Figure 13 illustrates the existing and proposed storm sewer facilities in the study area.

Storm sewer facilities are proposed to be included in Mount Ridge Road, Twin Lakes Parkway and three easement areas located within the site's western drainage area. Twin Lakes Parkway would include three sets of catch basins between Cleveland Avenue and the intersection with Mount Ridge Road. Additional catch basins would be required along the parkway in the vicinity of

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## VI. Infrastructure Improvements

Arthur Street and Parcel 16 which would discharge into the existing storm water ponds.

Mount Ridge Road would include four sets of catch basins to collect runoff entering the roadway. Trunk sewer serving both roadway drainage and drainage from Parcels 3, 8 and 9 would run north along Mount Ridge Road to the Iona Lane Easement, turn west then run to the proposed regional pond via a 48-inch pipe crossing on Cleveland Avenue. Trunk storm sewer serving Parcels 1 and 2 and a portion of Twin Lakes Parkway would travel parallel to Cleveland Avenue from Twin Lakes Parkway to the Iona Lane Easement then connect into the 48-inch pipe crossing draining to the regional pond. Trunk storm sewer serving Mount Ridge Road and Parcels 4, 5, 6, and 7 would run south along Mount Ridge Road and turn west along a proposed easement along the property line of Parcels 3 and 4. This trunk sewer would cross Cleveland Avenue in a 42-inch pipe then drain into the proposed regional pond.

The two trunk sewer crossings on Cleveland Avenue are to be installed in conjunction with the Ramsey County overlay project for Cleveland Avenue scheduled to be completed in 1996. Parcel 3 would utilize an existing 15" culvert crossing of Cleveland until a permanent outlet to the regional pond is constructed for the 48-inch pipe crossing. Remaining storm sewer infrastructure is recommended to be constructed in conjunction with the construction of the two roadways, however, portions of sewer proposed for easement areas could be completed prior to the roadway construction if necessary.

## VII. Capital Costs

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Following is a summary of the preliminary cost estimates for the proposed improvements and enhancements for the Twin Lakes district. Detailed, itemized cost estimates of each category are included in the Appendix. The cost estimates are based on the concept plans presented in this report and will need to be refined at the time more detailed plans are prepared.

The preliminary cost estimates, presented here, include construction costs for the following items:

- Sanitary Sewer
- Water Main
- Storm Sewer
- Regional Pond
- Interchange Modifications
- Roadway Construction
- Roadway Enhancements
- Urban Design Enhancements

Cost for acquisition of rights-of-way for the roadways and enhancements has not been included in this cost estimate.

VII. Capital Costs

Table 1  
 Cost Estimate Summary of  
 Improvements and Enhancements Construction

Table (Appendix)	Item	Amount
2	Sanitary Sewer	\$60,340
3	Water Main	\$431,560
4	Storm Sewer	\$548,320
5	Regional Pond	\$270,560
6	I-35W Interchange Modifications	\$1,026,730
7A	Roadway -- Cleveland Ave. Turn Lanes	\$135,530
7B	Roadway -- Mount Ridge Road	\$398,590
7C	Roadway -- Twin Lakes Parkway	\$985,970
8A	Roadway Enhanc. -- Twin Lakes Parkway Cleveland Ave. To Fairview Ave.	\$374,500
8B	Roadway Enhanc. -- Twin Lakes Parkway Fairview Ave. To Snelling Ave.	\$242,200
8C	Roadway Enhanc. -- Cleveland Avenue	\$269,920

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VII. Capital Costs

Table (Appendix)	Item	Amount
8D	Roadway Enhanc. -- Mount Ridge Road	\$126,000
8E	Roadway Enhanc. -- Arthur Street	\$43,400
8F	Roadway Enhanc. -- Fairview Avenue	\$157,500
8G	Roadway Enhanc. -- Lincoln Drive	\$157,500
8H	Roadway Enhanc. -- County Road C	\$417,900
9A	Corner Monuments	\$233,910
9B	Major Entry Monument	\$68,370
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	Total Estimated Construction Cost	\$5,948,800

# Appendix

**Table 2  
Sanitary Sewer Construction**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 0503.603	8" PVC	LF	1300	\$25	\$32,500
2 0506.602	Standard Manhole (48" Dia.)	EA	3	\$2,000	\$6,000
3 0506.602	Construct Manhole (72" Dia.) Over Existing 36" RCP	EA	1	\$4,000	\$4,000
4 2105.543	Stabilizing Aggregate	Ton	50	\$12	\$600
Subtotal					\$43,100
Design and Administrative Costs @ 30%					\$12,930
Contingencies @ 10%					\$4,310
<b>Total Estimated Construction Cost Sanitary Sewer</b>					<b>\$60,340</b>

**Table 3  
Water Main Construction**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 0504.602	Connect to Existing Water Main	EA	6	\$1,500	\$9,000.00
2 0504.603	6" DIP Water Main	LF	650	\$22	\$14,300
3 0504.603	8" DIP Water Main	LF	3200	\$25	\$80,000

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
4 0504.603	12" DIP Water Main	LF	4700	\$32	\$150,400
5 0504.602	6" Gate Valve and Box	EA	15	\$700	\$10,500
6 0504.602	8" Gate Valve and Box	EA	7	\$850	\$5,950
7 0504.602	12" Gate Valve and Box	EA	9	\$1,000	\$9,000
8 0504.620	DIP Fittings	LBS	5000	\$2.50	\$12,500
9 0504.602	Hydrant and Gate Valve	EA	8	\$2,000	\$16,000
10 2105.543	Stabilizing Aggregate	TON	50	\$12	\$600
Subtotal					\$308,250
Design and Administrative Costs @ 30%					\$92,480
Contingencies @ 10%					\$30,830
<b>Total Estimated Construction Cost Water Main</b>					<b>\$431,560</b>

**Table 4  
Storm Sewer Construction**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 0506.602	Connect to Existing Storm Sewer	EA	2	\$500	\$1,000
2 2503.541	12" RCP	LF	250	\$23	\$5,750
3 2503.541	15" RCP	LF	550	\$26	\$14,300

## Appendix

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
4 2503.541	18" RCP	LF	350	\$28	\$9,800
5 2503.541	21" RCP	LF	90	\$30	\$2,700
6 2503.541	24" RCP	LF	400	\$32.50	\$13,000
7 2503.541	27" RCP	LF	100	\$35	\$3,500
8 2503.541	30" RCP	LF	300	\$40	\$12,000
9 2503.541	36" RCP	LF	1700	\$65	\$110,500
10 2503.541	42" RCP	LF	750	\$85	\$63,750
11 2503.541	48 " RCP	LF	500	\$120	\$60,000
12 2506.508	Construct Manholes (48" Dia.)	EA	14	\$1,800	\$25,200
13 2506.508	Construct Manholes (60" Dia.)	EA	1	\$2,000	\$2,000
14 2506.508	Construct Manholes (72" Dia.)	EA	2	\$3,500	\$7,000
15 2506.508	Construct Manholes (84" Dia.)	EA	8	\$4,000	\$32,000
16 2506.508	Construct Special Structure for Storm Sewer	EA	2	\$7,500	\$15,000
17 2501.515	18" RC Pipe Apron	EA	1	\$750	\$750
18 2501.515	48" RC Pipe Apron	EA	2	\$1,200	\$2,400
19 0501.602	Trash Guard for 18" Aprons	EA	1	\$500	\$500
20 0501.602	Trash Guard for 48" Aprons'	EA	2	\$1,800	\$3,600

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
21 2511.501	Riprap	CY	60	\$55	\$3,300
22 2105.543	Stabilizing Aggregate	TON	300	\$12	\$3,600
Subtotal					\$391,650
Design and Administrative Costs @ 30%					\$117,500
Contingencies @ 10%					\$39,170
<b>Total Estimated Construction Cost Storm Sewer</b>					<b>\$548,320</b>

**Table 5  
Regional Pond Construction**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 2105.501	Common Excavation	CY	25,000	\$3.50	\$87,500
2 2105.501	Muck Excavation	CY	10,000	\$6	\$60,000
3 2503.541	30" RCP	LF	100	\$40	\$4,000
4 2501.515	30" RC Pipe Apron	EA	2	\$900	\$1,800
5 0501.602	Trash Guard for 30" Apron	EA	2	\$1,000	\$2,000
6 2506.508	Outlet Control Structure	EA	1	\$8,000	\$8,000
7 2511.501	Riprap Class 3	CY	15	\$50	\$750
8 2571.502	Deciduous Tree	Tree	50	\$300	\$15,000

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
9 2571.502	Shrubbery	Unit	150	\$20	\$3,000
10 2573.505	Erosion Control	LS	1	\$10,000	\$10,000
11 2575.501	Seeding	Acre	3	\$400	\$1,200
Subtotal					\$193,250
Design and Administrative Costs @ 30%					\$57,980
Contingencies @ 10%					\$19,330
<b>Total Estimated Construction Cost Regional Pond</b>					<b>\$270,560</b>

**Table 6  
I-35W Interchange Modifications Construction**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 2021.501	Mobilization	LS	1	\$50,000	\$50,000
2 2101.501	Clearing	ACR E	2	\$2,000	\$4,000
3 2101.506	Grubbing	ACR E	2	\$1,500	\$3,000
4 2104.501	Remove Curb and Gutter	LF	4,530	\$3	\$13,590
5 2104.501	Remove Concrete Pavement	SY	11,100	\$3.50	\$38,850

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Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
6 2105.501	Common Excavation	CY	65,000	\$2	\$130,000
7 2105.513	Muck Excavation	CY	20,000	\$5	\$100,000
8 2105.522	Select Granular Borrow (36" Depth)	CY	5,600	\$9	\$50,400
9 2211.501	Aggregate Base Class V (100% Crushed Limerock)	CY	622	\$10	\$6,220
10	Concrete Pavement (9" Depth)	SY	6,200	\$15	\$93,000
11	Guardrail	LF	900	\$10	\$9,000
12 2531.501	Concrete Curb and Gutter Design B624	LF	3,260	\$7.50	\$24,450
13	HOV Signalization	LS	1	\$40,000	\$40,000
14	F & I Sign Panels Type B	LS	1	\$50,000	\$50,000
15	F & I Sign Panels Type C	LS	1	\$10,000	\$10,000
16	Pavements Striping	LS	1	\$5,000	\$5,000
17	Street Lights (150 FT Spacing)	EA	14	\$3,000	\$42,000
18	Concrete Median Barrier	LF	200	\$10	\$2,000
19	Traffic Control	LS	1	\$20,000	\$20,000
20	Storm Sewer MHs and Pipe	LS	1	\$26,500	\$26,500
21 2575.501	Seeding With 4" Topsoil	AC	5	\$500	\$2,500
22 2573.502	Silt Fence	LF	2,820	\$3.50	\$9,870

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
23 2575.501	Sodding	SY	1,000	\$3	\$3,000
	Subtotal				\$733,380
	Design and Administrative Costs @ 30%				\$220,010
	Contingencies @ 10%				\$73,340
	<b>Total Estimated Construction Cost I-35W Interchange Modificatons</b>				<b>\$1,026,730</b>

**Table 7A  
Roadway Construction -- Cleveland Avenue Turn Lanes**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 2021.501	Mobilization	LS	1	\$5,000	\$5,000
2 2101.501	Clearing	ACR E	1	\$2,000	\$2,000
3 2101.506	Grubbing	ACR E	1	\$2,000	\$2,000
4 2104.501	Miscellaneous Removals	LS	1	\$3,000	\$3,000
5 2105.501	Common Excavation	CY	1,300	\$3.50	\$4,550
6 2105.522	Select Granular Borrow	CY	900	\$9	\$8,100
7 2211.501	Aggregate Base Class V 100% Crushed Limerock	TON	350	\$10	\$3,500
8 2340.514	2331 Type 31 Base Course Mixture	TON	300	\$26	\$7,800

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Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
9 2340.508	2331 Type 41 Wear Course Mixture	TON	150	\$28	\$4,200
10 2531.501	Concrete Curb and Gutter Design B624	LF	1,100	\$7.50	\$8,250
11 2464.601	Signing and Striping	LS	1	\$1,500	\$1,500
12	Traffic Control	LS	1	\$10,000	\$10,000
13	Storm Sewer	LS	1	\$30,000	\$30,000
14 2575.501	Sodding With 4" Topsoil	SY	1,000	\$3	\$3,000
15 2575.501	Seeding With 4" Topsoil	AC	1.5	\$500	\$750
16 2573.502	Silt Fence	LF	800	\$3.50	\$2,800
17 2573.501	Bale Check	EA	60	\$6	\$360
Subtotal					\$96,810
Design and Administrative Costs @ 30%					\$29,040
Contingencies @ 10%					\$9,680
<b>Total Estimated Construction Cost</b>					<b>\$135,530</b>
<b>Roadway -- Cleveland Avenue Turn Lane</b>					

**Table 7B**  
**Roadway Construction -- Mount Ridge Road**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 2021.501	Mobilization	LS	1	\$15,000	\$15,000
2 2101.502	Clearing	TREE	5	\$150	\$750
3 2101.507	Grubbing	TREE	5	\$150	\$750
4 2104.501	Miscellaneous Removals	LS	1	\$3,000	\$3,000
5 2105.501	Common Excavation	CY	10,000	\$3.50	\$35,000
6 2105.507	Subgrade Excavation	CY	6,300	\$3.50	\$22,050
7 2105.522	Select Granular Borrow	CY	6,300	\$9	\$56,700
8 2211.501	Aggregate Base Class V 100% Crushed Limerock	TON	3,900	\$10	\$39,000
9 2340.514	2331 Type 31 Base Course Mixture	TON	1,500	\$26	\$39,000
10 2340.508	2331 Type 41 Wear Course Mixture	TON	1,000	\$28	\$28,000
11 2357.502	Bituminous Material for Tack Coat	GAL	400	\$1.50	\$600
12 2531.501	Concrete Curb and Gutter Design B624	LF	3,800	\$7.50	\$28,500
13 2575.501	Sodding With 4" Topsoil	SY	4,000	\$3	\$12,000
14 2575.501	Seeding With 4" Topsoil	AC	1	\$500	\$500

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
15 2573.502	Silt Fence	LF	1,000	\$3.50	\$3,500
16 2573.501	Bale Check	EA	60	\$6	\$360
Subtotal					\$284,710
Design and Administrative Costs @ 30%					\$85,410
Contingencies @ 10%					\$28,470
<b>Total Estimated Construction Cost Roadway -- Mount Ridge Road</b>					<b>\$398,590</b>

**Table 7C  
Roadway Construction -- Twin Lakes Parkway**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1 2021.501	Mobilization	LS	1	\$25,000	\$25,000
2 2101.502	Clearing	TREE	5	\$150	\$750
3 2101.507	Grubbing	TREE	5	\$150	\$750
4 2104.501	Miscellaneous Removals	LS	1	\$5,000	\$5,000
5 2105.501	Common Excavation	CY	20,000	\$3.50	\$70,000
6 2105.507	Subgrade Excavation	CY	12,700	\$3.50	\$44,450

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Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
7 2105.522	Select Granular Borrow	CY	12,700	\$9	\$114,300
8 2211.501	Aggregate Base Class V 100% Crushed Limerock	TON	7,700	\$10	\$77,000
9 2340.514	2331 Type 31 Base Course Mixture	TON	2,500	\$26	\$65,000
10 2340.508	2331 Type 41 Wear Course Mixture	TON	1,700	\$28	\$47,600
11 2357.502	Bituminous Material for Tack Coat	GAL	700	\$1.50	\$1,050
12 2531.501	Concrete Curb and Gutter Design B624	LF	13,000	\$7.50	\$97,500
13 2575.501	Sodding With 4" Topsoil	SY	16,000	\$3	\$48,000
14 2575.501	Seeding With 4" Topsoil	AC	1	\$500	\$500
15 2573.502	Silt Fence	LF	2,000	\$3.50	\$7,000
16 2573.501	Bale Check	EA	60	\$6	\$360
17	Traffic Signal at Cleveland Avenue	LS	1	\$100,000	\$100,000
Subtotal					\$704,260
Design and Administrative Costs @ 30%					\$211,280
Contingencies @ 10%					\$70,430
<b>Total Estimated Construction Cost Roadway -- Twin Lakes Parkway</b>					<b>\$985,970</b>

**Table 8A**  
**Roadway Enhancements Construction**  
**Twin Lakes Parkway -- Cleveland Ave. To Fairview Ave.**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Lights @ 150' O.C. Including Wiring & Feed Points	EA	40	\$3,000	\$120,000
2	Street Trees; 3" Cal.; @ 40' O.C.; Boulevards and Medians	EA	225	\$300	\$67,500
3 2521.511	10' Bituminous Walk with Concrete Edge Strips	LF	3200	\$25	\$80,000
Subtotal					\$267,500
Design and Administrative Costs @ 30%					\$80,250
Contingencies @ 10%					\$26,750
<b>Total Estimated Construction Cost</b>					<b>\$374,500</b>
<b>Roadway Enhancements -- Twin Lakes Parkway Cleveland Ave. to Fairview Ave.</b>					

**Table 8B**  
**Roadway Enhancements Construction**  
**Twin Lakes Parkway -- Fairview Ave. to Snelling Ave.**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Lights @ 150' O.C. Including Wiring & Feed Points	EA	20	\$3,000	\$60,000
2	Street Trees; 3" Cal.; @ 40' O.C.; Boulevards and Medians	EA	160	\$300	\$48,000

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
3 2521.511	10' Bituminous Walk with Concrete Edge Strips	LF	2,600	\$25	\$65,000
	Subtotal				\$173,000
	Design and Administrative Costs @ 30%				\$51,900
	Contingencies @ 10%				\$17,300
	<b>Total Estimated Construction Cost</b>				<b>\$242,200</b>
	Roadway Enhancements -- Twin Lakes Parkway Fairview Ave. to Snelling Ave.				

**Table 8C**  
**Roadway Enhancements Construction -- Cleveland Avenue**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Lights @ 150' O.C. Including Wiring & Feed Points	EA	34	\$3,000	\$102,000
2	Street Trees; 3" Cal.; @ 60' O.C.; Boulevards	EA	86	\$300	\$25,800
3 2521.511	10' Bituminous Walk with Concrete Edge Strips	LF	2,600	\$25	\$65,000
	Subtotal				\$192,800
	Design and Administrative Costs @ 30%				\$57,840
	Contingencies @ 10%				\$19,280
	<b>Total Estimated Construction Cost</b>				<b>\$269,920</b>
	Roadway Enhancements -- Cleveland Avenue				

**Table 8D**  
**Roadway Enhancements Construction -- Mount Ridge Road**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Lights @ 150' O.C. Including Wiring & Feed Points	EA	24	\$3,000	\$72,000
2	Street Trees; 3" Cal.; @ 60' O.C.; Boulevards	EA	60	\$300	\$18,000
Subtotal					\$90,000
Design and Administrative Costs @ 30%					\$27,000
Contingencies @ 10%					\$9,000
<b>Total Estimated Construction Cost</b>					<b>\$126,000</b>
<b>Roadway Enhancements -- Mount Ridge Road</b>					

**Table 8E**  
**Roadway Enhancements Construction -- Arthur Street**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Trees; 3" Cal.; @ 60' O.C.; Boulevards	EA	20	\$300	\$6,000
2 2521.511	10' Bituminous Walk with Concrete Edge Strips	LF	1,000	\$25	\$25,000
Subtotal					\$31,000
Design and Administrative Costs @ 30%					\$9,300
Contingencies @ 10%					\$3,100
<b>Total Estimated Construction Cost</b>					<b>\$43,400</b>
<b>Roadway Enhancements -- Arthur Street</b>					

**Table 8F  
Roadway Enhancements Construction -- Fairview Avenue**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Lights @ 150' O.C. Including Wiring & Feed Points	EA	20	\$3,000	\$60,000
2	Street Trees; 3" Cal.; @ 60' O.C.; Boulevards	EA	50	\$300	\$15,000
3 2521.511	10' Bituminous Walk with Concrete Edge Strips	LF	1,500	\$25	\$37,500
Subtotal					\$112,500
Design and Administrative Costs @ 30%					\$33,750
Contingencies @ 10%					\$11,250
<b>Total Estimated Construction Cost Roadway Enhancements -- Fairview Avenue</b>					<b>\$157,500</b>

**Table 8G  
Roadway Enhancements Construction -- Lincoln Drive**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Street Lights @ 150' O.C. Including Wiring & Feed Points	EA	20	\$3,000	\$60,000
2	Street Trees; 3" Cal.; @ 60' O.C.; Boulevards	EA	50	\$300	\$15,000
3 2521.511	10' Bituminous Walk with Concrete Edge Strips	LF	1,500	\$25	\$37,500
Subtotal					\$112,500
Design and Administrative Costs @ 30%					\$33,750
Contingencies @ 10%					\$11,250
<b>Total Estimated Construction Cost Roadway Enhancements -- Lincoln Drive</b>					<b>\$157,500</b>

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
5	Miscellaneous (Edger, etc..)	LS	1	\$2,000	\$2,000
Subtotal					\$18,560
Design and Administrative Costs @ 30%					\$5,570
Contingencies @ 10%					\$1,860
<b>Total Estimated Construction Cost Corner Monument (Typical)</b>					<b>\$25,990</b>
<b>Total for All Corner Monuments</b>		<b>EA</b>	<b>9</b>	<b>\$25,990</b>	<b>\$233,910</b>

**Table 9B**  
**Urban Design Enhancements -- Major Entry Monument**

Seq. No./ Mn/DOT No.	Item	Unit	Qty.	Unit Price	Amount
1	Railing Brick Pilasters	EA	20	\$1,000	\$20,000
2	Metal Ornamental Railing	LF	144	\$60	\$8,640
3	Evergreen Trees; 10' to 14' Ht.	EA	18	\$400	\$7,200
4	Shrubs/Flowers	EA	300	\$20	\$6,000
5	Brick Sign Wall Including Letters & Lighting	LS	1	\$5,000	\$5,000
6	Miscellaneous (Edger, etc..)	LS	1	\$2,000	\$2,000
Subtotal					\$48,840
Design and Administrative Costs @ 30%					\$14,650
Contingencies @ 10%					\$4,880
<b>Total Estimated Construction Cost Corner Monument (Typical)</b>					<b>\$68,370</b>