Como Regional Park Transportation Implementation Plan

Prepared for:

SAINT PAUL

Como Park Zoo & Conservatory

Prepared by:

Kimley-Horn and Associates, Inc.

May 2011

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Acknowledgements

This project would not have been possible without the valuable assistance of many groups and individuals that attended meetings, provided input, and helped guide the development of the plan.

Project Advisory Committee

Glenn Baron, Lancer Catering (Como Town)

Triesta Brown, District 6 Representative

Michelle Furrer, Como Park Zoo and Conservatory Director/Campus Manager

Don Ganje, City of Saint Paul Parks and Recreation, Design Section

Steve Grans, Minnesota State Fair

Samantha Henningson, City of Saint Paul Ward 4 Council Office

Karen Misiewicz, City of Saint Paul Parks and Recreation, Operations

Bryan Murphy, City of Saint Paul Parks and Recreation, Design Section

Ann Olson, City of Saint Paul Ward 5 Council Office

Dennis O'Rourke, District 10 Representative

Paul Prior, City of Saint Paul Parks and Recreation, Special Services

Jackie Sticha, Como Friends

Elizabeth Stiffler, City of Saint Paul Public Works Department

Mary Wawru, District 6 Alternate

Sally Worku, District 10 Alternate

1. Introduction

1.1 Purpose of the Study

Como Regional Park, located in Saint Paul, Minnesota, is a world class facility that functions as both a neighborhood park and a regional attraction, featuring one of the only remaining free zoos in the country. First established in 1873, the amenities and attractions of the park attracted a record number of more than 3 million visitors in 2009. Como Park, shown in **Figure 1.1**, is set in a primarily residential neighborhood. Over the past several decades the City of Saint Paul has completed master planning and project-specific design efforts to plan for transportation and parking facilities while recognizing the need to balance infrastructure with the natural environment.

While some recommendations of past plans have been implemented, others either failed to gain public support or didn't have sufficient funding to move forward. Following the implementation of the Como Shuttle, which was first recommended in the 1984 Como Park Master Plan, the City of Saint Paul recognized the need for a current comprehensive plan to address the park's transportation and parking issues and direct future planning efforts and resources.

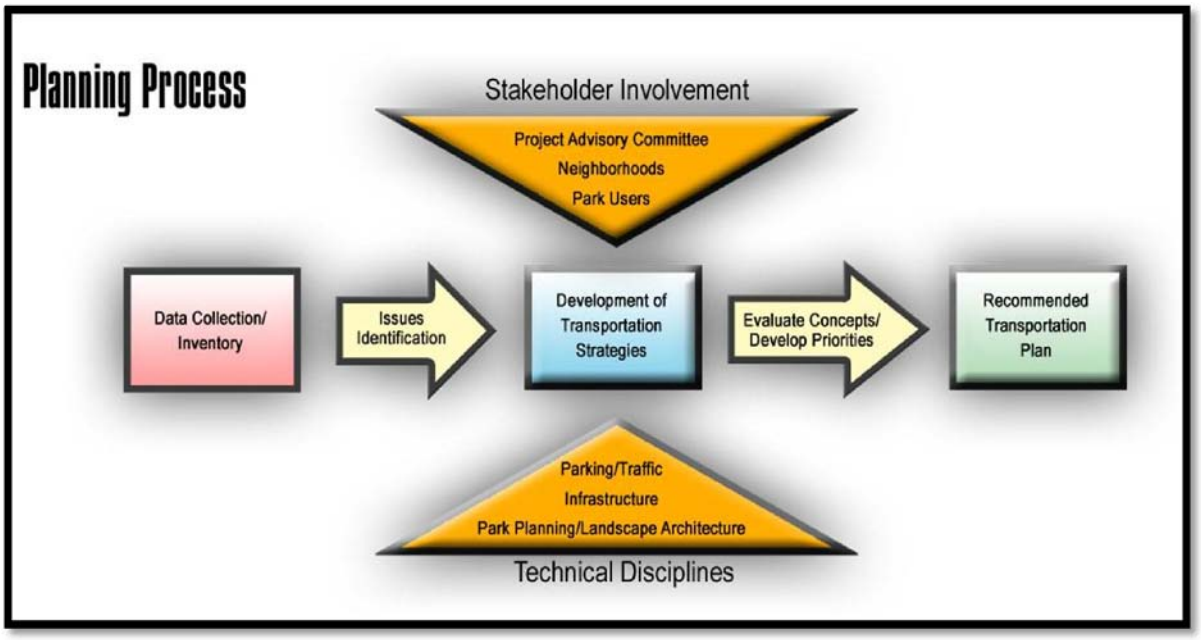
The purpose of this study was to develop a comprehensive transportation and parking plan that addressed all modes and identified priorities and phasing. Implementation was a critical consideration of the study, as the desired outcome of the study is not just a plan, but a feasible strategy for accomplishing short-term and long-term projects to improve the operations and safety of Como Regional Park.

2. Study Process

2.1 Project Overview

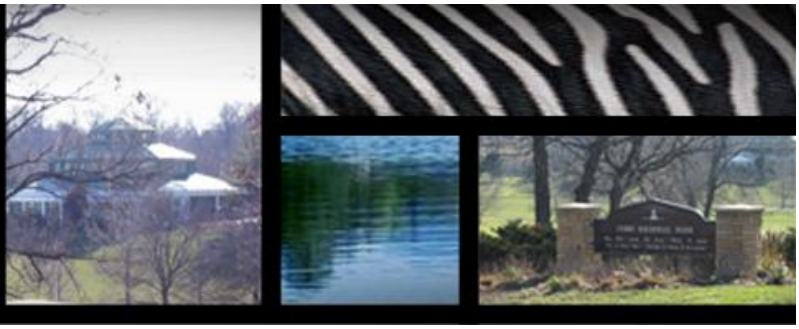
The overall work program for developing the TIP was divided into three phases: 1) Data Collection and Inventory; 2) Development of Transportation Strategies; and 3) Recommended Transportation Implementation Plan.

The graphic below illustrates each phase of the planning process, and the steps in between. As illustrated, the bulk of stakeholder involvement was focused on the development of transportation strategies; however, public involvement activities were an integral part of each phase of the project. The sections that follow discuss the role of the Project Advisory Committee, and walk through how public involvement played a role in progressing through the steps of the planning process.



2.2 Role of the Project Advisory Committee

The role of the Project Advisory Committee was to provide input and guidance that is representative of the various groups sitting on the committee, but that also worked toward collaborative solutions that



balanced the interests of the park with the interests of the surrounding neighborhoods. The PAC played a key role in project decision-making by providing input and guidance throughout the project process.

The PAC met nine times between February 2010 and September 2010 (monthly, and twice in the month of July) to review project progress and provide input into decisions at hand. PAC member roles and expectations were clearly defined and agreed upon at the first meeting. PAC members were to serve as a communication link between the PAC and the specific group they represent. Specifically, PAC representatives were expected to keep their respective groups apprised of project progress and status, and bring input from their groups back to the PAC for consideration.

Specific expectations of PAC members were as follows:

- Commit to attend and participate in all PAC meetings;
- Be respectful of the opinions and issues of other PAC members;
- Act as agents of the project at public open house workshops;
- Report information back to their respective groups;
- Share info at PAC meetings that is reflective of the interests of their respective groups; and
- Work to develop group consensus on issues within their respective groups, and within the PAC.

The PAC consisted of 15 members, including representatives from various departments of the City of St. Paul Parks and Recreation, Como Campus, Minnesota State Fair, Como Friends, Lancer Catering/Como Town, District 6 Neighborhood, District 10 Neighborhood, St. Paul Ward 4, and St. Paul Ward 5, as listed in the Acknowledgements. This diverse group of interests provided input into project issues identification, the development of concepts and priorities, and other project components, while also representing the issues and priorities of their respective groups.

2.3 Public Involvement Process

The public involvement process worked in concert with each phase of the project, and offered opportunities for the PAC and the general public to provide input into project development. The public involvement process is presented by project phase in the following sections.

Phase 1 – Data Collection

The objective of the Data Collection phase was to review previous studies and document existing conditions in the park (discussed in Chapters 3 and 4, respectively); but also to engage the PAC and the public in a process of identifying their particular issues and concerns. This phase of the study began in February 2010.

Issues Identification and Prioritization

At the very first PAC meeting in February 2010, members participated in an issues prioritization exercise, starting with ten broad issues developed by the consultant team. An eleventh issue was added by the PAC. Once the issues were established and explained, each PAC member was given five poker chips that represented $20 each ($100 total). The PAC member was asked to "spend" their money on the issues they deemed most important. This was demonstrated by dropping chips into a basket labeled with each issue. Members could drop all chips into one basket, or split over several. The purpose of this exercise was to give the consultant team and the PAC an idea of the primary issues of concern to the group. The eleven issues and their definitions are listed below.

- Parking supply – Concerns about the number of parking spaces in or near the park, and the location of parking spaces
- Parking demand – Concerns about the number of people that drive to the park and need a parking space
- Traffic congestion – Back-ups at intersections, congestion due to on-street parking maneuvers
- Green space – Protecting existing green space and natural areas
- Wayfinding/signing – How visitors are directed to the park from freeways and other major highways
- Pedestrian/bike facilities – Safety, roadway crossings, connectivity of pedestrian/bike facilities
- Historic elements – Protecting historic components of the park, such as the Conservatory
- Transit service – Bus routes in or near the park, bus frequency, bus stop locations, shuttle service operations
- Traffic safety – Crashes at intersections, speeding vehicles
- Cut-through traffic – Traffic using local streets or park roadways to short-cut through the neighborhood or the park, instead of using roadways outside the park
- Arterial routes – Operations and connectivity of main traffic routes around the park, and related needs for improvements

In order of the priority, the PAC recognized parking supply, parking demand, traffic congestion, and transit service as the highest priority transportation issues for Como Park. More detailed results of the exercise can be found in **Appendix A.**

On April 12, 2010, the first public open house for the TIP was held. Approximately 100 people were in attendance, consisting primarily of neighborhood residents. The meeting consisted of a brief project overview presentation, and then offered the opportunity for attendees to fill out a survey, which concluded with a repeat of the issues priority exercise conducted with the PAC (see **Appendix A**). The survey was also made available online through the end of April 2010, and on-site surveys were conducted in vicinity of the Como Campus/Como Town. The results of the survey and issues exercise for each of these three sample sets are summarized below. The complete survey results can be found in **Appendix A.**

Open House Surveys

- 81 responses
- 97.5% resident of St. Paul
- Most visit the park for recreational purposes (77.7%)
- 76.5% visit once per week or more
- Como Lake/trails is the area most often visited
- Most highly ranked issues:
    1) Green space
    2) Parking supply
    3) Parking demand
    4) Transit service

Online Surveys

- 1,816 responses
- 65% non-St. Paul resident, 35% resident of St. Paul

- Most visit the park for attractions (77%)
- 42% visit 6 or less times/year; 26% 6-11 times/year
- Zoo is area most often visited, followed by Conservatory
- Most highly ranked issues:
  1) Parking supply
  2) Parking demand
  3) Green space
  4) Historic elements

On-Site Surveys

- 379 responses
- 67.8% non-St. Paul resident, 32.2% resident of St. Paul
- 49.1% visit the park to visit attractions, closely followed by recreational uses at 40.6%
- 44.9% visit 6 or less times/year; 25.4% 6-11 times/year (70.3%)
- Zoo is area most often visited, followed by Como Town
- Most highly ranked issues:
  1) Parking supply
  2) Parking demand
  3) Traffic congestion
  4) Traffic safety

In general, survey respondents and PAC members were in agreement that parking supply and parking demand are an issue within Como Park. This was a recognition that there are a lot of people driving to the park, and therefore a high demand for parking spaces; and once they get to the park, there aren't enough parking spaces in areas where people would most like to park. Green space was an overwhelming priority for those in attendance at the open house, and was also a high priority among online survey respondents. Traffic congestion and traffic safety were issues for those on-site, most of whom had driven to the park that day and had presumably faced those particular challenges. Transit was a high-ranking issue for PAC members and neighborhood residents at the open house meeting.

<u>Phase 2 – Development of Transportation Strategies</u>

The objective of Phase 2 was to analyze the existing conditions information, synthesize the public and PAC input, and start to develop concepts for resolving the identified issues.

Issue Refinement

The survey also offered an opportunity for open-ended comments, which were pulled into a comment database. Added to these comments were specific comments and questions raised by open house attendees, who marked their comments on large aerial photographs of the park and surrounding area. This information helped to further refine the eleven issues and get into greater detail about specific areas of the park. Following analysis of these comments, the eleven issues were refined to the following categories:

- Roadway
- Parking
- Pedestrians/Bicycles
- Transit/Shuttle
- Signing/Wayfinding

These became the five categories which represented the primary transportation issues in the park, and under which concept improvements would be developed. It was recognized that other issues such as green space, historic elements, and traffic-related issues were inherently related to each of these categories, and would be considered in the development of concepts. The key needs and issues in each category are summarized in **Section 4.7**.

Concept Development

The concept development process began with a brainstorming exercise with the PAC, which took place over two meetings in July 2010. Each category was posted on a flip chart, and PAC members were asked to offer ideas for how to address the issues within these categories. No idea was too big or too small, and ranged from policy improvements (revise the park website) to larger scale construction projects (underground parking ramps). All ideas were compiled into a list by category. The PAC was also provided with a list of improvements that had been proposed under previous studies, but never implemented (see discussion in **Chapter 3** and **Appendix B**).

The consultant team took this comprehensive list of ideas and improvements and came up with initial improvement concepts for each category. These concept drawings were reviewed and discussed with the PAC, St. Paul Public Works, and brought to a standing meeting of St. Paul Parks Managers for review and feedback. It was at this time that the PAC also developed a list of project goals, as discussed in **Section 5.1**.

On August 12, 2010, a second public open house was held to get feedback on the concepts under consideration. Approximately 65 people attended this meeting, most of them residents from nearby neighborhoods. A presentation on project status and background analysis was given, and attendees

were invited to visit five stations, each representing one of the five improvement categories: roadway, parking, pedestrian/bicycle, transit/shuttle, and signing/wayfinding. Staff was available at each station to answer questions, and attendees were invited to fill out a brief survey listing all improvements under that category, and to simply check *like, don't like, undecided*, or *no opinion* for each. The concept drawings and surveys for each category were also provided online through the end of August. Detailed results of the surveys are included in **Appendix A**.

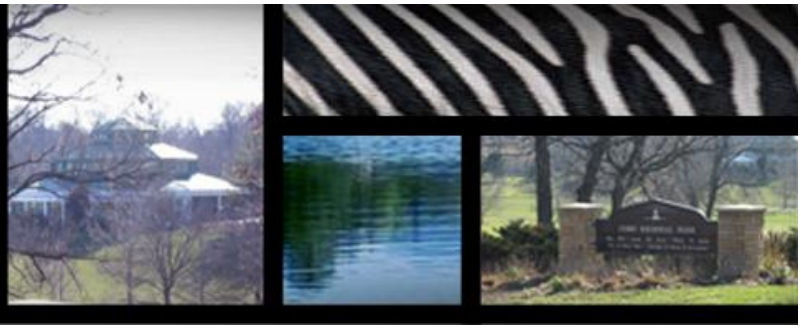
Phase 3 – Transportation Implementation Plan

Based on the feedback received, Kimley-Horn developed a preliminary list of recommended transportation improvements for Como Park, which also included timeframes for how the improvements should be phased. The preliminary information was discussed with the PAC and also shared with the District 10 Neighborhood Relations Committee, in a meeting on September 9, 2010. With this input in mind, and in consideration of the technical analysis completed, Kimley-Horn finalized its recommendations, which are included in **Chapter 6** of this plan.

The Tip was presented to the stakeholders as follows:

- October 2010 – Neighborhood District Board Meetings
- October 13, 2010 – Parks Commission Meeting
- November 17, 2010 – City Council Meeting

The approved TIP serves as a blueprint for future transportation improvements to the park.



3. Background

3.1 Summary of Previous Studies

As part of the current study, 27 past documents and study reports were reviewed to provide context of how the park has evolved over time, strategies/ideas that have previously been evaluated, and recommendations that have not yet been implemented. A complete resource list of these documents, along with a summary of the key recommendations or findings of each document, is provided in **Appendix B**.

Brief summaries of the major planning documents that guided the analysis and results of this study are provided on the following pages.

Traffic Planning for Como Park (1981)

This study was begun in 1979 as a comprehensive look at the parking and transportation system in and around the park, as part of planned improvements to the overall park. The report was incorporated into the 1984 Como Zoo and Conservatory Master Plan, and many of the major recommendations for roadway changes were implemented in the decade following its completion, including:

- Realignment of Lexington Parkway through the park
- Removal of Como Avenue from the Hamline Ave/Horton Avenue intersection
- Removal of Beulah Lane between Midway Parkway and Como Avenue
- Conversion of East Lake Como Drive to one-way traffic

There were several other major roadway concepts that have not been implemented, such as elimination of Midway Parkway south of Estabrook Drive, removal of Nason Place in front of the Conservatory, removal of Kaufman Drive, and conversion of West Lake Como Drive to a one-way roadway.

In terms of parking, the study documents 2,139 parking spaces within Como Park (on-street and parking lots). However, the study assumed the future removal of all on-street parking within the park and consolidation of 1,000 spaces to the area immediately in front of the Zoo and Conservatory. While incremental parking changes have occurred over the years, with an overall decrease of spaces nearest the Zoo/Conservatory and the addition of employee parking behind the zoo, the overall parking supply and location has not radically changed over the past 30 years.

Shuttle and Remote Parking Study (1980)

Completed in conjunction with the 1981 traffic planning study, the feasibility of a trolley-style shuttle service was evaluated to connect remote parking in Como Park to the most-used areas of Como Park. The proposed system would operate on fixed rails at an average speed of 10 miles per hour (mph), with a looped route, major stops at McMurray Fields and the Zoo/Conservatory, and minor stops at the picnic grounds and lakeside pavilion. The shuttle was proposed to run only during weekends, holidays, and special events.

Como Zoo and Conservatory Master Plan (1984)

The Master Plan study was initiated as part of an overall program for revitalization of and improvements to Como Park. A number of roadway, parking, and transit options were evaluated to better improve traffic flow and accommodate peak parking demand during the summer peaks. The study incorporated the recommendations from the traffic planning and shuttle studies, as well as the removal of all on-street parking and the construction of a 400-space parking ramp in the area current occupied by Como Town and the Wolf Lot. Finally, construction of a visitor resource center was recommended as a single entry point to the Zoo and Conservatory.

Como Park Master Plan Completion (1996)

The purpose of the Master Plan Completion study was to guide the completion of remaining improvements that had not yet been completed from the 1984 Como Park Master Plan. Several of the recommendations varied from the original Master Plan, the most significant of which was the construction of an underground parking structure in front of the Zoo and Conservatory, rather than in the Amusements area along Midway Parkway. The closure of Kaufman Drive at Lexington Parkway, the return of Estabrook drive to two-way traffic, creation of a new parking lot next to the group picnic pavilion, and the construction of a pedestrian bridge over Lexington Parkway are significant improvements implemented since the study, but the parking structure did not gain sufficient support to move forward.

Source: Como Park Master Plan Completion

Como Park Traffic Analysis (1997)

The traffic analysis was conducted in coordination with the Master Plan Completion study and included only the park areas west of Lexington Parkway. The recommendations were generally consistent with those of the 1984 Master Plan, but recommended against the shuttle system due to costs and against the removal of on-street parking due to the need to replace those spaces elsewhere. In addition, the location of the proposed parking ramp was recommended to be underground and moved from the Como Town and Wolf Lot area to the front of the Zoo and Conservatory. The study recommended that 1,720 spaces be provided in the park west of Lexington Parkway, which was expected to accommodate all time periods except summer weekends.

The City Itself A Work of Art: A Historical Evaluation of Como Park (1997)

An evaluation was completed for all features of Como Regional Park that were potentially historically significant, which includes some of the original landscapes and features of the park, as well as components built as part of the Work Progress Administration (WPA). The following six landscapes and sixteen elements were determined to be historically significant:

Landscapes

- West Picncic Grounds
- East Lakefront Area
- Early Recreational Area – Floral Display
- Early Recreational Area – Active Recreation
- Streetcar Entrance Area
- East Picnic Grounds

Features

- Zoological Building
- Comfort Station
- Ball Fields
- Council Rings
- Midway Parkway and Gates
- East Como Lake Drive
- Aquarium (original Lily Pond) and bridge
- Mannheimer Memorial
- Schiller Monument
- Lily Pond (Frog Pond)
- Conservatory
- Estabrook, Nason, and Kaufman Drives
- Streetcar Station
- Bridge 92247 (Lexington Avenue)
- Bridge L-5853 (foot bridge)
- Schiffman Fountain

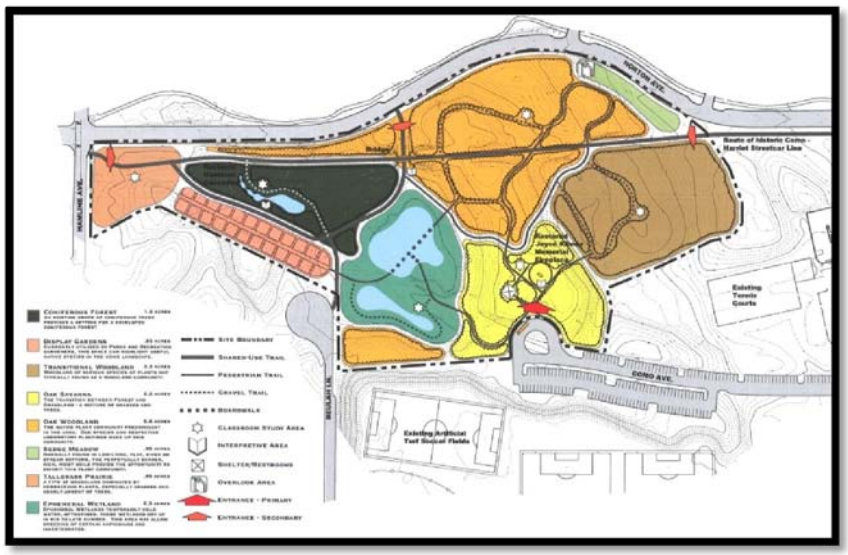
Creating A Campus: Framework Plan (1998)

The framework plan addresses improvements or replacement of Zoo exhibits, as well as reiterating the need for an education resource center as a single entry point and an underground parking ramp in front of the Zoo and Conservatory. A new recommendation of this study was construction of a bus drop-off on Midway Parkway. The concept plan subsequently completed in 2003 also showed the construction of a Central Maintenance Facility at the site of the existing overflow parking lot (old golf course lot).

In addition to the major studies and master plan efforts completed, two recently adopted studies also propose significant changes to the roadway network south of Horton Avenue.

Como Woodland Outdoor Classroom Master Plan (2008)

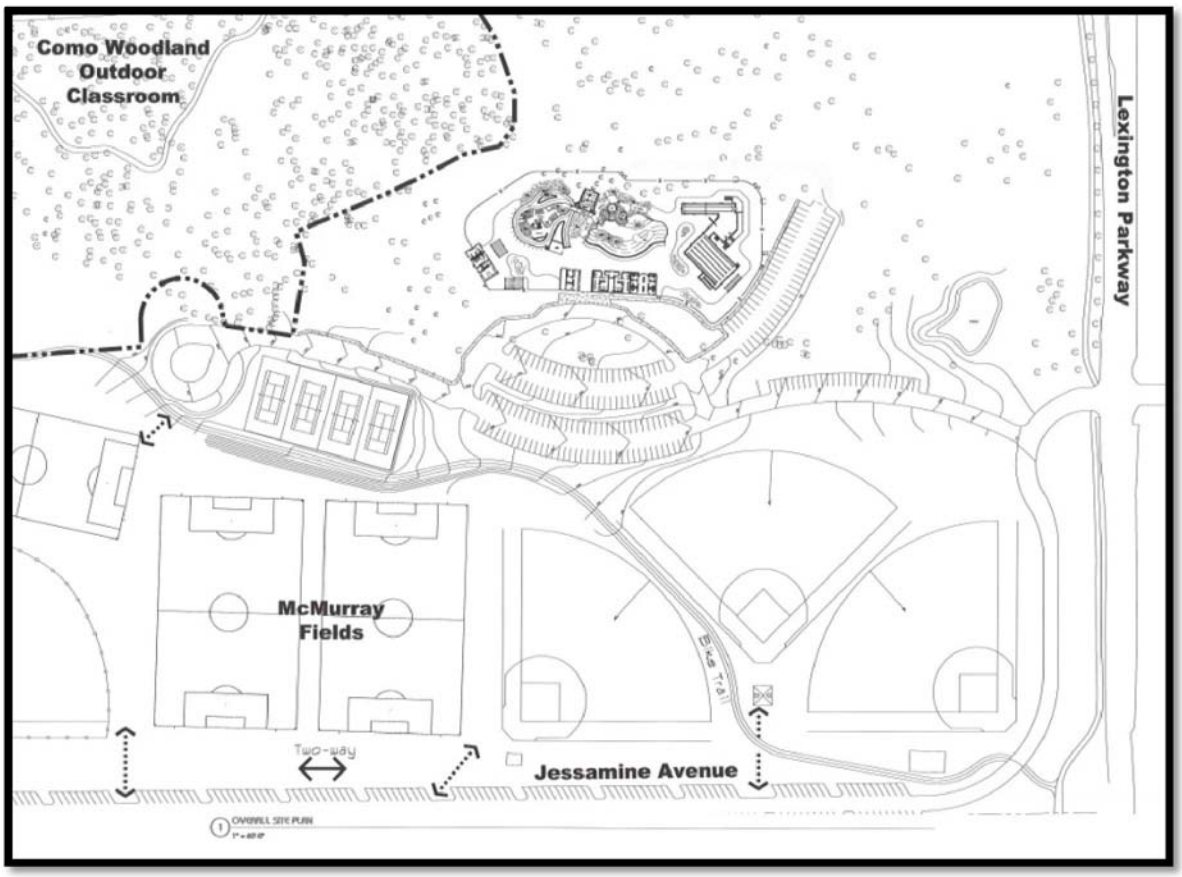
The Woodland Outdoor Classroom studied the restoration of the woodland south of Horton Avenue for educational and recreational uses. The site plan shows the removal of the Beulah Lane/Como Avenue intersection, with turnarounds at the ends of each roadway and the woodland expanded into the area where roadways current exist.



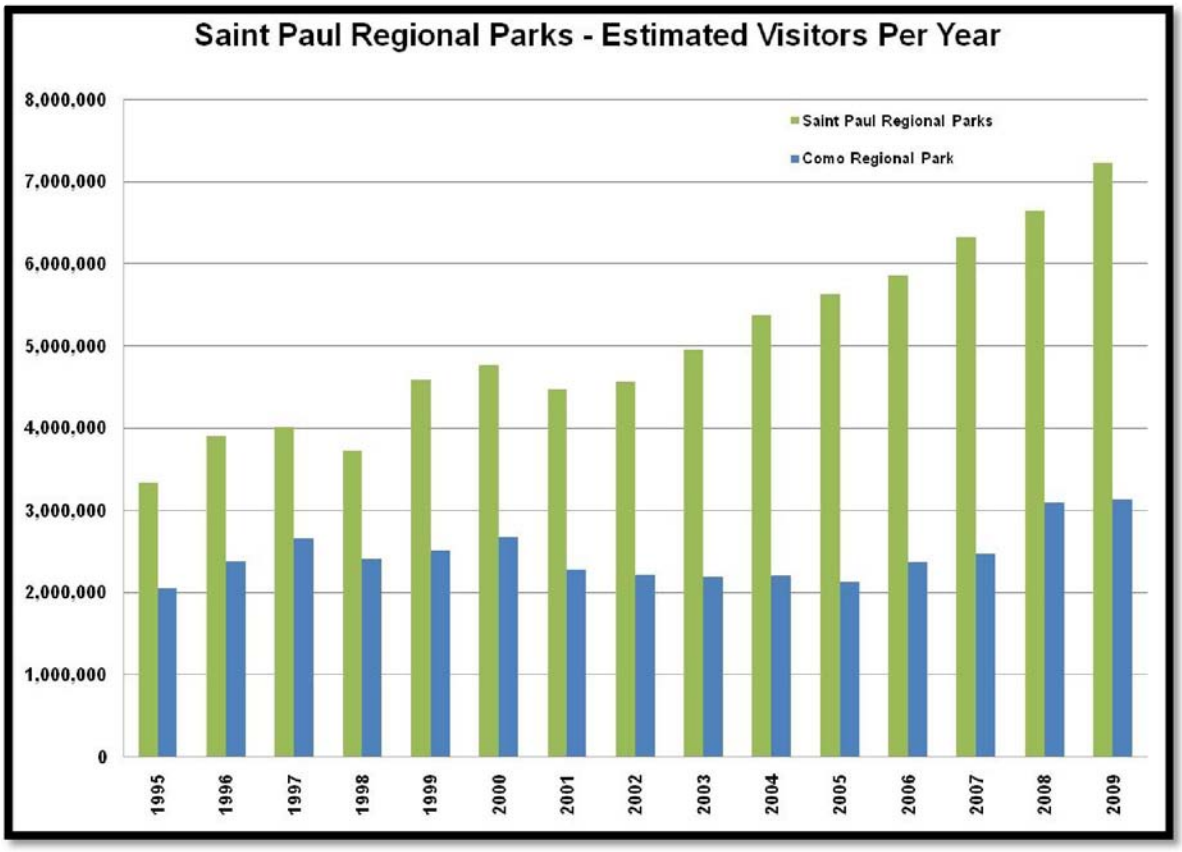
Source: Como Woodland Outdoor Classroom Master Plan

Como Regional Pool Plan (2009)

The Como Pool plan was primarily focused on the programming of the pool area, but also incorporated a number of roadway changes to the final site plan, including the removal of the Lexington Parkway/Jessamine Avenue intersection, and the creation of Jessamine Avenue as a two-way roadway with angled parking on both sides. The construction planned to begin in 2010 includes the pool facilities and parking lots, but not the roadway realignments.



Source: Como Regional Park Pool Replacement



Data Source: Metropolitan Council

In addition to the studies completed specifically for Como Park, since 1995 the Metropolitan Council has prepared yearly attendance estimates for all regional parks. The estimated attendance figures for Como Regional Park are shown in the chart at right, as well as the number of visitors to all Saint Paul regional parks over the same period.

The Metropolitan Council also conducts user surveys of the regional parks approximately every 10 years, which are used to establish how the parks are being used by visitors and how visitors arrive at the parks. The most recent survey was completed in 2008 and the relevant data for Como Park, as used in this study, are shown in **Tables 3.1 - 3.3**

Table 3.1 - Saint Paul Regional Park User Survey Data – Primary Activity

Activity	Walking/ Hiking	Biking	Swimming	Picnic	Jogging/ Running	Dog Walking	Relaxing	Zoo	Other
Saint Paul Regional Parks	30%	25%	1%	5%	8%	6%	4%	19%	15%
Como Regional Park	6%	0%	1%	7%	2%	1%	3%	79%	13%

Source: Metropolitan Council Regional Parks and Trails Survey 2008
Note: Percentages total greater than 100% because respondents could choose more than one activity.

Table 3.2 - Saint Paul Regional Park User Survey Data – Travel Modes

Mode of Travel To Park	Walk/ Ran/ Inline Skate	Bicycle	Auto, Truck, RV, or Van	Metro Transit Bus or LRT	Charter Bus	Other	Average Persons Per Vehicle
Saint Paul Regional Parks	25%	21%	51%	1%	1%	1%	2.96
Como Regional Park	5%	1%	92%	1%	1%	1%	3.61

Source: Metropolitan Council Regional Parks and Trails Survey 2008
Note: Percentages may not total 100% due to rounding.
Survey taken prior to start of Como Shuttle.

Table 3.3 - Saint Paul Regional Park User Survey Data – Origin of Visit

Visitor Origin	Saint Paul	Minneapolis	Ramsey County	Remaining Seven County Metro Area	Greater Minnesota	Outside Minnesota	Outside United States	Unknown
Saint Paul Regional Parks	50%	7%	8%	25%	3%	5%	1%	1%
Como Regional Park	15%	11%	10%	39%	9%	16%	1%	1%

Source: Metropolitan Council Regional Parks and Trails Survey 2008
Note: Percentages may not total 100% due to rounding.

4. Existing Conditions

4.1 Park Facilities

Como Regional Park encompasses 450 total acres and nine major usage areas, as described below and shown in **Figure 4.1**:

- Zoo, Conservatory, and Como Town – Includes the Zoo grounds, the Marjorie McNeely Conservatory, Visitor Center, Bonsai Gallery, Japanese Gardens, Cafesjain's Carousel, and Como Town amusement area.
- Golf Course – An 18-hole golf course and clubhouse, which is also very popular as a cross-country ski course during the winter season.
- Picnic Grounds – South of the Zoo and Conservatory, the picnic area includes the group picnic pavilion (Como Pavilion) at Midway Parkway/Horton Avenue (East Picnic Grounds), a smaller picnic shelter near Midway Parkway/Hamlin Avenue (West Picnic Grounds), and the picnic tables and areas in between, south of Midway Parkway.
- Pool – The Como Pool was closed in 2008, but construction of a new lap pool, wading pool, and lazy river will begin in fall 2010, with scheduled completion in 2012.
- Woodland Outdoor Classroom – Wooded area with a multitude of paved and unpaved trails, planned for educational programming.
- McMurray Fields – 6 softball fields (4 ice rinks in winter), 1 baseball field, 3 soccer fields, and 4 tennis courts used throughout the year for recreational and competitive league sports.
- Lake Como – In addition to the lake itself, this area also features the Lakeside Pavilion, Historic Streetcar Station, and fishing piers.
- Open Space – Unprogrammed space in the park, the largest of which are the open fields bounded by Estabrook Drive, Lexington Parkway, Horton Avenue, and the Como Pavilion.

- Maintenance Facility – This site serves as the Central Maintenance Facility for the entire City of Saint Paul Parks and Recreation Department, including equipment maintenance and storage and stockpiling of materials.

Based on visitor and attendance data, as well user surveys and observation, the Zoo, Conservatory, and Como Town are the most-visited areas of the park.

4.2 Traffic Volumes

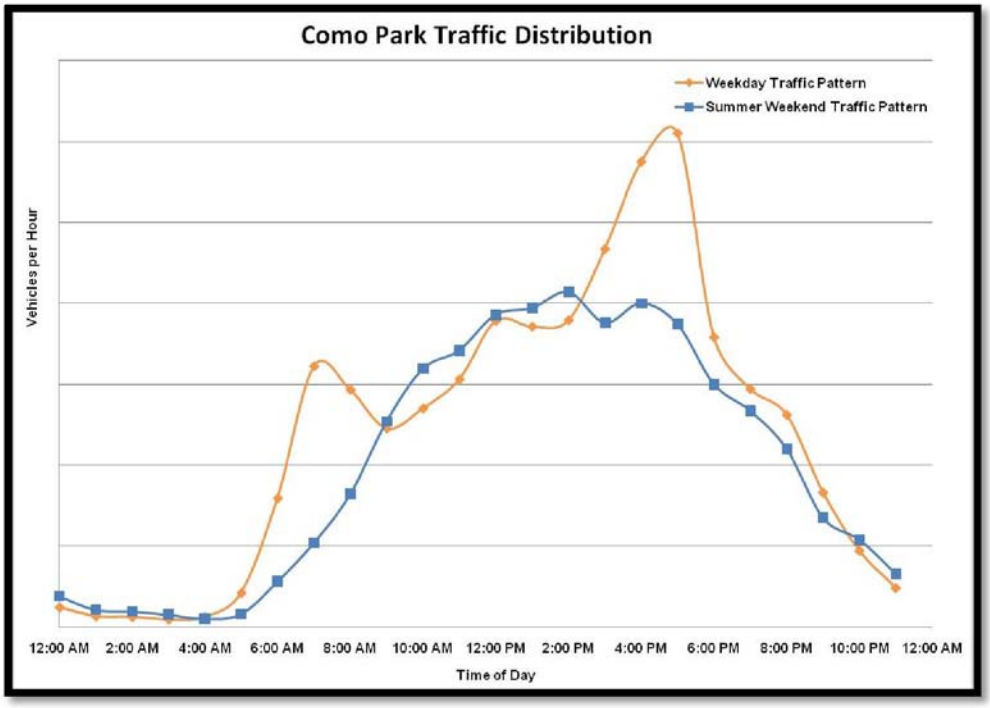
Daily traffic volumes on the roadways surrounding the park over the past 20 years were provided by City of Saint Paul Public Works and additional data was pulled from past study reports and traffic volume maps published by the Minnesota Department of Transportation. As is common for traffic data collection, the past counts were all conducted on weekdays, with some counts during the summer and others during the school year. Due to the seasonal nature of traffic volumes at Como Park, the traffic count and the month the data was collected is shown on **Figure 4.2**.

As part of this study, mechanical traffic counts were conducted at 8 locations from 12:00 AM on Saturday (6/26/2010) until 12:00 AM on Monday (6/28/2010), for a total of 48 hours. The key findings from the historic weekday and current weekend traffic volumes are summarized as follows:

- The traffic counts show that the roadway capacity is not being exceeded at any of the count locations during either weekday or weekend peak periods.
- The difference between the Saturday (6/26) count and the Sunday (6/27) count was 0-5%. Therefore, the value shown on the map is an average of the two days.
- Six of the count locations – Como Avenue, Hamline Avenue, E Como Lake Blvd, and Lexington Parkway (2 locations) – had weekend daily traffic volumes that were lower than the most recent weekday count. These locations are highlighted in green on the map. This means that the traffic volumes on these roadways during an average weekday are greater than a summer weekend day. Therefore any traffic or operations issues at these locations are primarily due to regular commuter or neighborhood traffic.
- Two of the count locations – both on Midway Parkway – had weekend daily traffic volumes that are higher than the most recent weekday count. These locations are highlighted in orange on the map. This means that summer weekend traffic is greater than during an average weekday, which is partially due to traffic to and from Como Park.
- Based on the weekday counts on Midway Parkway between Estabrook Drive and Horton Avenue, there is an estimated cut-through volume of 250 vehicles on Midway Parkway from 7:00 AM to 9:00 AM. The assumption of cut-through traffic volume is based on the fact that the Zoo, Conservatory, and Como Town do not open until 10:00 AM and therefore little of the traffic volumes on Midway Parkway would be associated with visitors or employees of the park.

However, it is not possible to distinguish cut-through traffic during the PM peak period because the Zoo, Conservatory, and Como Town are open until 6:00 PM, which is the end of the PM peak.

- Of the eight locations where traffic data was collected, the peak hourly traffic volume on the weekend was between 12:00 PM and 2:00 PM. Comparing the hourly volumes to the weekday volumes at the same eight locations, the weekend peak hourly volumes were lower than the weekday peak volumes. However, the distribution of traffic throughout the weekend day showed there was a sustained level of traffic throughout the midday hours, as shown in the chart below.



Data Source: City of Saint Paul Public Works and Kimley-Horn and Associates, Inc.

4.3 Parking Inventory

An inventory of all parking spaces within Como Regional Park was conducted in May 2010. A total of 2,188 parking spaces were counted including both all parking lots and on-street spaces, which are shown in **Figure 4.3**. [1] Parking spaces on streets outside the park boundary, such as Hamline Avenue,

[1] *Note: Parking lots that do not currently have a name designation were given a name for the purposes of this study, in order to distinguish the data collection results. On-street parking areas were assigned a letter designation. These names are not suggestions or recommendations for future naming or signing, but were only for the analysis purposes of this study.*

Lexington Parkway, and the residential east and west of the park, were not included in the inventory or the parking counts. A comparison of the Como Park parking supply in 1980 and 2010 are shown in **Table 4.1.**

Table 4.1 - Como Park Existing and Historic Parking Supply

Year	Parking Location	Zoo, Conservatory, Como Town	Picnic Grounds/ Open Space	Pool	Staff/ Volunteer	McMurray Fields	Lake Area	Golf Course
1981	Parking Lots	431	50	100	0	172	317	60
	On Street	398	284	0	0	215	112	0
	Total	**829**	**334**	**100**	**0**	**387**	**429**	**60**
2010	Parking Lots	363	242	95	107	72	259	152
	On Street	245	173	0	20	400	60	0
	Total	**608**	**415**	**95**	**127**	**472**	**319**	**152**

Source: Traffic Planning for Como Park (1981) and Kimley-Horn and Associates, Inc.

The number of parked vehicles in the park were counted at eight time points throughout the day (9:00 AM, 10:30 AM, 12:00 PM, 1:30 PM, 3:00 PM, 4:30 PM, 6:00 PM, and 7:30 PM) on Thursday, June 24 and Saturday, June 26. In addition, partial license plates were recorded in four of the parking lots to determine the average length of time that the vehicles were parked (Palm Lot, Wolf Lot, north Lakeside Pavilion Lot, and Group Picnic Pavilion Lot). The license plate data was also used to estimate how many different vehicles parked in each space over the course of the day (i.e., turnover).

The results of the parking occupancy counts for each time period are shown in **Appendix C** and summarized below. The background conditions on the days when data was collected, such as weather and event rentals, are also provided in the appendix.

<u>Weekday (Thursday, June 24)</u>

- The parking areas closest to the Zoo and Conservatory were effectively full from 10:00 AM to 4:00 PM.
- The parking areas near McMurray Fields and Como Lake were, on average, less than 25 percent full before 4:00 PM, but were close to fully utilized in the evening for sports and concert events.
- Lakeside Lot B (southeast side of the lake) is well-used throughout the day.
- The Golf Course Lot was generally less than 50 percent full throughout the day.
- More vehicles park in the Staff/Volunteer permit areas than there are designated spaces.

- More vehicles park in the Streetcar Lot than there are designated spaces.
- The peak number of vehicles counted was 1,466 at 12:00 PM, representing 66 percent of the available parking spaces.
- The average parking duration was longest in the Wolf Lot (2.9 hours) and shortest in the Lakeside Pavilion Lot A (1.8 hours). The parking duration for the Palm Lot and Picnic Pavilion Lot were both close to the average of 2.4 hours.
- The average parking lot turnover was 3.3 times per day. The Lakeside Pavilion Lot A had the highest turnover at 4.7 times per day.

<u>Weekend (Saturday, June 26)</u>

- The parking areas closest to the Zoo and Conservatory were effectively full from 10:00 AM to 6:00 PM. More parking areas further from the Zoo/Conservatory campus were full during this time, compared with the weekday count.
- The parking areas around McMurray Fields were, on average, 30 percent full throughout the day.
- The parking areas around Como Lake were, on average, 50 percent full throughout the day, but with significant spikes in parking during events.
- The Golf Course Lot was generally less than 50 percent full throughout the day.

- More vehicles park in the Staff/Volunteer permit areas than there are designated spaces.
- More vehicles park in the Streetcar Lot than there are designated spaces.
- The peak number of vehicles counted was 1,502 at 1:30 PM, representing 69 percent of the available parking spaces.
- The average parking duration was longest in the Wolf Lot (2.6 hours) and shortest in the Lakeside Pavilion Lot A (2.0 hours). The parking duration for the Palm Lot and Picnic Pavilion Lot were both close to the average of 2.4 hours. The overall average duration was the same for both Thursday and Saturday.
- The average parking lot turnover was 3.8 times per day. The Lakeside Pavilion Lot A had the highest turnover at 4.9 times per day. The higher turnover rates on Saturday compared to Thursday is reflective of a higher number of overall visitors.

The maximum parking utilization observed was approximately 70 percent on Saturday afternoon. In comparison, the parking occupancy study conducted on a June weekend in 1979 showed a maximum parking utilization of 50 percent and a 1995 June weekend parking count west of Lexington Parkway showed a maximum of 80 percent utilization.

4.4 Shuttle/Transit

The Como Shuttle, which was first recommended in the 1980s, was implemented in May 2009. During the 2009 summer season, the shuttle operated on weekends and provided direct shuttle service between a stop on Estabrook Drive in front of the Visitor Center and a remote parking lot located on the Minnesota State Fairgrounds along Como Avenue. The remote lot has a parking capacity of about 450 spaces, but is unavailable during major events at the Fairgrounds, such as the annual Minnesota Hot Rod Association Back to the Fifties weekend in June and the 12-day Minnesota State Fair in late August and early September. The shuttle makes stops at the remote lot and the Visitor Center continuously from 9:30 AM to 6:30 PM. During events at the Fairgrounds, either the parking lot at Midway Stadium (1771 Energy Park Drive) or the Saint Paul School District Central Facility lot (1930 Como Avenue) is used. **Figure 4.4** shows the current Como Shuttle route and stops for normal operations from the Como Avenue lot at the Minnesota State Fairgrounds.

The shuttle buses can accommodate a maximum of 28 seated passengers and 12 standing passengers (total 40 passengers) and there are a total of three buses that currently serve the park. An additional two buses are planned to be added to the fleet within the next 2.5 years, for a total of five operating buses.

In 2009 the Como Shuttle operated on weekends only, and the maximum single day usage in 2009 was 1,762 riders[2]. The Como Shuttle was expanded to a daily service starting in June 2010, which has resulted in a greater number of total visitors using the shuttle service. However, the typically lower attendance on weekdays resulted in wide variations in the number of riders per day on weekend days compared to weekdays. The shuttle was generally underused on all weekdays, with an average capture rate of 2.2 percent of visitors, whereas on a busy weekend day the shuttle had average ridership that equated to 5.5 percent of visitors. The maximum single day usage was 1,966 riders (11 percent capture). The shuttle ridership for 2009 and 2010 are summarized in **Table 4.2** and **Table 4.3** below. The lower average weekend ridership in 2010 appears to be due to very low ridership the first three weekends after the shuttle opened in the spring and low ridership the last three weekends of the season, when attendance was low due to the unseasonably cool and rainy weather.

Table 4.2 – Como Shuttle Average Daily Ridership

Year	Dates	Average Number of Shuttle Riders						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2009	May 16 - Sept 27 Weekends Only	-	-	-	-	-	650	611
2010	April 24 - Sept 26	268	62	138	196	256	477	498

Table 4.3 – Como Shuttle Ridership Trends

Year	Number of Days			
	0-199 Riders	200-499 Riders	500-999 Riders	>1,000 Riders
2009	8	2	6	5
2010	45	23	13	7

[2] In this context, one passenger is equal to one visitor. Therefore each passenger makes two trips on the shuttle – one from the shuttle lot to the park and one return trip. This method of calculating ridership is different than a general transit service where the passenger is counted each time the bus is boarded.

Given the current number and capacity of the shuttle buses, as well as the frequency of the routes, the maximum capacity of the shuttle system is 3,240 passengers per day. Therefore the weekday shuttle service is operating at approximately 10 percent of capacity and the weekend shuttle averages 25 to 30 percent of capacity.

4.5 Pedestrian and Bicycle Network

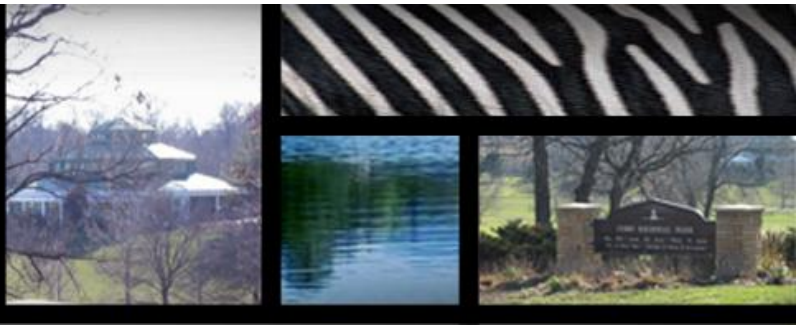
Como Regional Park has a network of pedestrian-only sidewalks and paths, shared pedestrian/bicycle paths, bicycle-only trails, on-street bike lanes, and designated on-street bike routes (Share The Road), as shown in **Figure 4.5**. Although some of the alignments were changed, the sidewalk and trail network envisioned in the 1984 Como Park Master Plan has essentially been completed with the exception of a shared pedestrian/bike path on Hamline Avenue between Arlington Avenue and Como Avenue.

4.6 Parking Management

Staff and volunteer parking spaces in Como Park are signed for permit only, but the remaining parking supply is free and unrestricted at all times. The City of Saint Paul does not currently have paid or time-limited parking in any of the parks in the City.

In 2009, residents of the neighborhood west of Como Park submitted a petition to City of Saint Paul Public Works to establish a Residential Permit Parking (RPP) area near the Midway Parkway/Hamline Avenue entrance to the park for May through September. The petition included 14 block faces and was submitted while a parking study of the area was ongoing. The study included 22 total block faces bounded by Como Avenue to the south, Hamline Avenue to the east, Arlington Avenue to the north, and Pascal Street to the west. The timing also coincided with the start of the Como Shuttle weekend service. Public Works collected parking data for all 22 blocks for three time periods – weekend before shuttle, weekend after shuttle, and holiday weekend after shuttle.

The study showed that the parking on seven block faces were more than 75 percent utilized (which was defined as full) on weekend days even after the implementation of the shuttle. These blocks were on Hamline Avenue between Frankson Avenue and Como Avenue and the south side of Frankson Avenue



and Canfield Avenue between Hamline Avenue and Albert Street.[3] However, because the current transportation study was planned to begin in 2010, Public Works recommended that implementation of permit parking be delayed for a year or implemented on a one-year trial basis so that the broader recommendations of the transportation and parking study could be considered. In addition, alternative solutions to permit parking were recommended, including greater incentives for shuttle usage, widening Hamline Avenue to allow parking on both sides of the street, and time limited zones.

4.7 Current Issues

As described in Chapter 2, an extensive survey process was used to gather input on the existing parking and transportation issues at Como Park in addition to the parking and traffic data collected in June 2010. The major issues of concern, which became the impetus for the development of potential improvements, were classified into five major areas: Roadway, Parking, Shuttle/Transit, Pedestrian/Bicycle, and Signing/Wayfinding. The key needs and issues in each area are summarized below.

Roadway

- Traffic congestion at the intersections of Lexington Parkway/Horton Avenue, Midway Parkway/Horton Avenue, Midway Parkway/Estabrook Drive and Hamline Avenue/Midway Parkway.
- Need for drop-off area for the Zoo, Conservatory, and Como Town.

Parking

- Need for greater supply of convenient parking for the Zoo, Conservatory, and Como Town for both peak and off-peak seasons.
- Vehicles circulating in search of parking add to congestion.
- Park visitors parking in the neighborhood.

Shuttle/Transit

- Promotion of the shuttle to potential and arriving visitors needs to be increased.
- Incentives are needed to increase utilization of the shuttle.
- Transit enhancements (stops and routes) are needed to make it a more attractive mode of travel to and from the park.

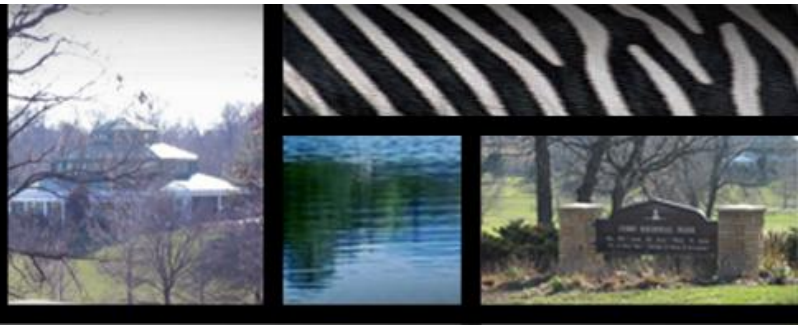
[3] Although not mentioned in the permit parking study report, the significantly higher parking utilizations on the south side of Frankson Avenue and Canfield Avenue, compared with the north side, are presumably due to the direction of travel into the neighborhood (i.e., from Snelling Avenue).

Pedestrian/Bicycle

- Pedestrian crossings of Lexington Parkway, Midway Parkway, and Horton Avenue.
- Pedestrian/vehicle conflicts in high activity areas, such as in front of the Visitor Center and Conservatory.
- Lack of north-south bicycle connections to Como Park.
- Lack of connectivity between regional bicycle facilities and facilities within Como Park.

Signing/Wayfinding

- All freeway signs direct visitors to Lexington Parkway.
- Lack of comprehensive wayfinding for all activity areas of Como Park, including parking areas.
- Few pedestrian-oriented wayfinding signs within the park to guide visitors from parking areas to attractions.



5. Transportation and Parking Strategies

5.1 Goals and Objectives

In addition to the transportation and parking issues, the need for the transportation plan to fit within the context of the natural and historic resources of Como Park was also a consistent theme of the study. A list of overall project goals and objectives were needed to aid in the evaluation and prioritization of the potential solutions. The following primary and secondary project goals were informed by past project goals and formalized through discussion with the Project Advisory Committee. The numbering of the goals does not indicate priority, but was only for the purposes of discussion.

Primary Goals

1. Preserve green space to the greatest extent possible
2. Meet parking demand of existing and planned park facilities[4] for Average Summer Peak
3. Increase mode share of transit, pedestrian, and bicycle to the park and increase capture rate (percentage of total visitors) using remote parking/shuttle

Secondary Goals

1. Balance impacts on community, park users, and road users, and cost to public
2. Minimize impacts to historic landscapes and features
3. Add to or maintain buffers between the park and residential areas
4. Minimize circular traffic patterns (vehicles circulating through the park in search of parking)
5. Increase effectiveness of communication of parking, traffic and wayfinding information to visitors
6. Decrease non-residential traffic and parking in surrounding residential areas
7. Decrease intersection congestion
8. Maintain or improve intersection safety
9. Provide pedestrian facilities between parking, bus/shuttle stops and activity areas of the park (sidewalk, trail, overpass/underpass, etc)
10. Provide commuter bicycle connections through the park (north/south and east/west)
11. Minimize vehicle conflict and vehicle/pedestrian/bicyclist conflict areas
12. Implement a tiered cost approach to improvements

[4] Planned facilities include Como Pool, Woodland Outdoor Classroom, new African Hoofed Stock Building, and expanded Gorilla and Primate Buildings.

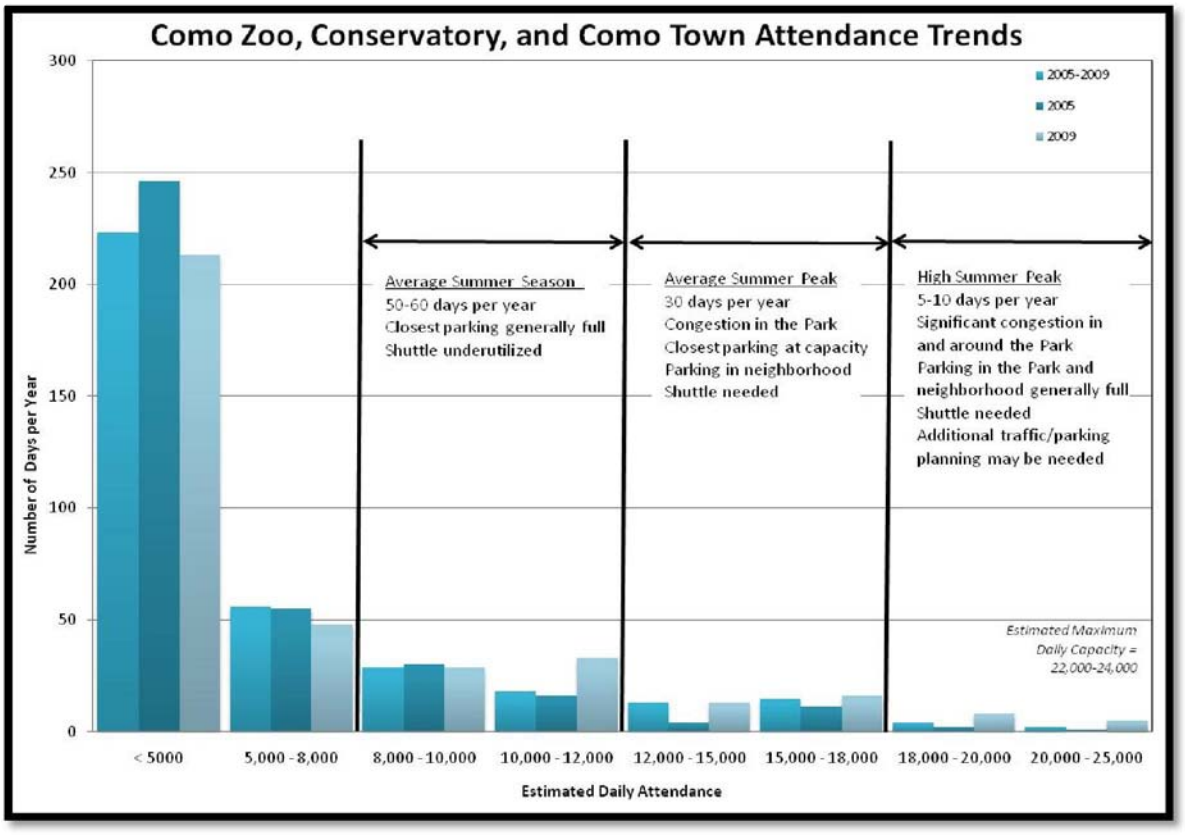
In addition to the goals, all solutions must meet minimum design standards for city streets and must continue to meet the zoo accreditation standards.

5.2 Parking Analysis

There are currently 2,188 parking spaces within Como Regional Park, but based on the parking data the spaces near the Zoo, Conservatory, and Como Town are the only areas that are consistently full during summer weekdays and weekend days. A radius of ¼ mile (about a 5-minute walk) was used as a measure of convenient parking for the Zoo, Conservatory, and Como Town. This is a commonly accepted "convenient" walk distance when there is heavy demand for parking, such as for events or in a downtown area. A total of 547 public parking spaces in Como Park currently fall within the radius, which would be adequate to support about 8,000 visitors[5] per day assuming the current turnover rates, mode share, vehicle occupancy, and shuttle usage. It should be noted that none of the on-street parking spaces outside the park on Hamline Avenue, Lexington Parkway, and the neighborhood streets were included in this number. However, there are competing interests for the 547 spaces (such as for the picnic grounds) so the number of convenient spaces available in the park for visitors to the Zoo, Conservatory, and Campus Town would often be less than 547. On days with attendance greater than about 8,000 visitors, observations show more parking south of Horton Avenue (leading to mid-block pedestrian crossings), vehicles circulating through the park looking for a close parking space (leading to congestion and sometimes gridlock within the park), and heavy parking demand in the neighborhoods (leading to resident inconvenience and frustration).

To begin the assessment of the parking demand, attendance data gathered from February 2005 through December 2009 was analyzed to determine how frequently the parking demand was exceeding the convenient parking supply. The chart on the following page shows the number of days per year at various attendance levels in 2005, 2009, and an average of the four-year period. As shown previously in Figure 3.1, there were nearly one million additional visitors to Como Regional Park in 2009 compared to 2005. However, the number of "capacity" days with attendance of 20,000 or greater was not significantly different in those two years. In fact, the one million additional visitors are primarily captured in a greater number of days with 10,000 to 15,000 days.

[5] Visitors in this section refer only to the Como Zoo, Como Conservator and Como Town because those are the only areas that collect and maintain daily attendance estimates. In addition, the parking occupancy study showed that these were the only areas where parking demand routinely exceeded parking supply.

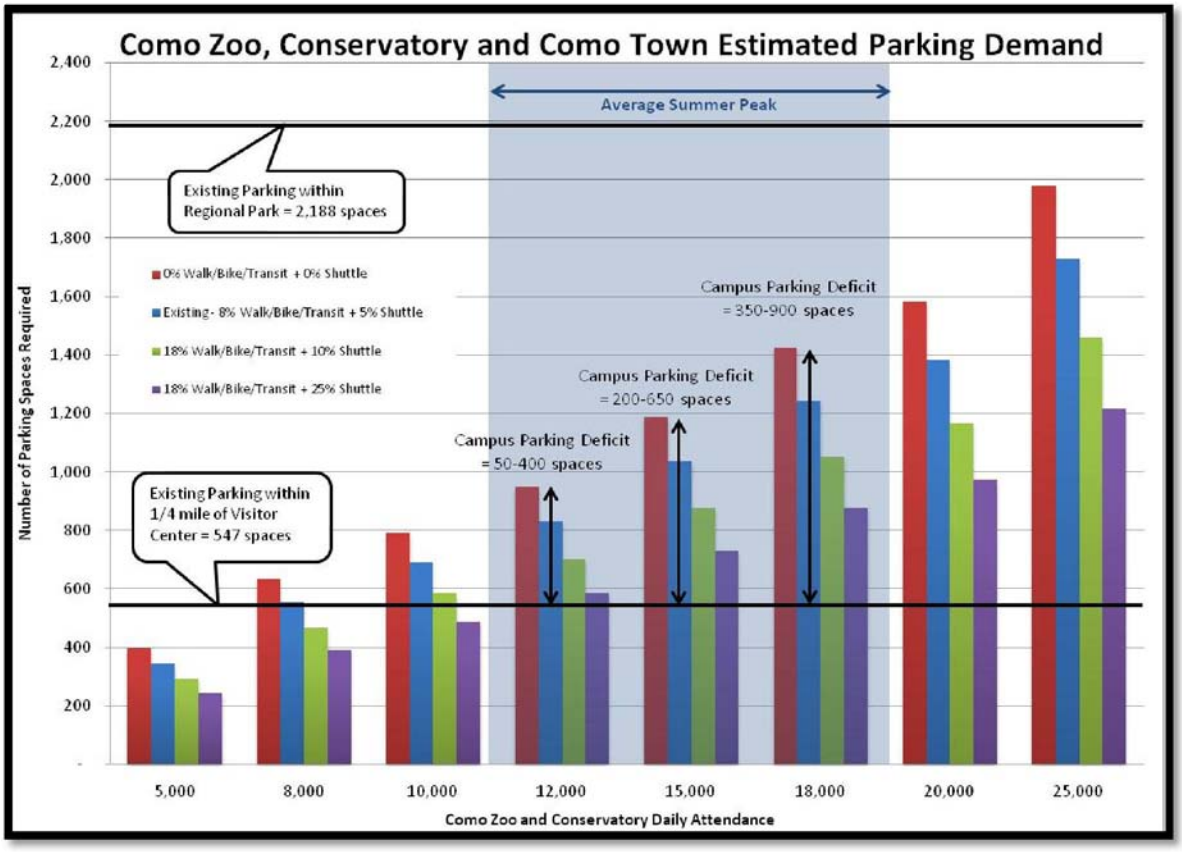

Como Zoo, Conservatory, and Como Town Attendance Trends
Number of Days per Year
300
250
200
150
100
50
0
2005-2009
2005
2009
Average Summer Season
50-60 days per year
Closest parking generally full
Shuttle underutilized
Average Summer Peak
30 days per year
Congestion in the Park
Closest parking at capacity
Parking in neighborhood
Shuttle needed
High Summer Peak
5-10 days per year
Significant congestion in and around the Park
Parking in the Park and neighborhood generally full
Shuttle needed
Additional traffic/parking planning may be needed
Estimated Maximum Daily Capacity = 22,000-24,000
< 5000
5,000 - 8,000
8,000 - 10,000
10,000 - 12,000
12,000 - 15,000
15,000 - 18,000
18,000 - 20,000
20,000 - 25,000
Estimated Daily Attendance

Going the next step and relating parking demand to attendance, the parking supply needed to meet various levels of daily attendance was analyzed. Each of the bars in the chart on the next page represents various levels of mode share (transit, walk, and bike) and shuttle usage. The parking demand under existing conditions, with 8 percent mode share and 5 percent shuttle use, is represented by the blue bar. As a comparison, Minnehaha Regional Park, which is located directly on the Grand Rounds and adjacent to the Hiawatha LRT line, has a transit, walking and biking mode share of 32%. In the next 20 years it is unlikely that Como Park will have a regional trail and LRT line at its front door, so an achievable goal for transit, walking, and biking mode share would be to increase by 10% (more than double the current usage). Similarly, an achievable goal for use of the shuttle would be about 10% of visitors that arrive by personal vehicle (about double the current usage).

The parking demand assuming 18 percent mode share and 10 percent shuttle use is shown as the green bar and under this scenario, the "convenient" parking supply is reached at attendance levels of about 10,000 visitors. Even assuming 25 percent shuttle usage[6], the parking supply near the Zoo and Conservatory would be exceeded when attendance reaches 12,000 visitors, which occurs approximately 35 to 40 days a year (i.e., both days of every weekend from May to September). It should be noted that 12,000 visitors per day represents only about half the daily capacity of the Zoo, Conservatory, and Como Town.

Even with these (or greater) increases in the number of visitors using alternative modes, there remains a gap between the parking demand and the parking supply that is convenient to the areas of the park with the greatest number of visitors.

[6] The Minnesota State Fair reports that approximately 25 percent of their visitors arrive by bus or shuttle.



Data Source: Como Park Zoo and Conservatory

The analysis shows that it is not economically feasible to build enough parking to meet the highest daily parking demand that would ever be expected, but also, ***relying on mode share and shuttle use alone will not solve the current parking and resulting traffic and congestion issues.*** Given that the Average Summer Peak accounts for virtually every weekend between May and September, a combination of solutions is needed that increases the number of convenient parking spaces while also expanding utilization of the Como Shuttle and use of transit, walking, and biking.

5.3 Evaluation of Strategies and Solutions

Based on the review of past studies and recommendations, the input from the public and the PAC, and technical analysis of the existing parking and transportation conditions, draft recommendations were developed to address the roadway, parking, transit/shuttle, pedestrian/bicycle, and signing/wayfinding needs of the park. The following summarizes the basis for the recommendations:

- Reduce or eliminate intersection conflicts and congestion

- Provide a convenient designated loading/unloading location for visitors, school buses, and the Como Shuttle.
- Distribute traffic on the roadways in and around the park by providing more than one option to access an area.
- Provide additional parking spaces within a 5-minute walk radius of the Zoo/Conservatory/Como Town to meet the parking demand during the Average Summer Peak.
- Implement paid parking in the most heavily used parking areas, with free parking at the shuttle lot and other less-used parking areas
- Provide parking information to visitors to reduce vehicles circulating to find parking
- Parking for Como Park should be located within the park to maximize its use.
- Convert the current shuttle into a circulator to serve the busiest areas of the park.
- Provide connections between Metro Transit bus stops and future Como Shuttle stops
- Provide convenient and safe pedestrian/bicycle facilities between bus/shuttle stops, the sidewalk/trail system, and the major attractions of the park
- Provide improved north/south and east/west bicycle and pedestrian facilities through the park and provide connections to the regional trail/bikeway network in the area
- Provide wayfinding and parking information for vehicles and pedestrians for all major areas of the park
- Direct visitors to the park via multiple routes to distribute traffic among various routes

The concepts that moved forward as recommendations were developed further and are summarized in Chapter 6 of this report. The concepts that were subsequently eliminated from consideration are briefly described below, along with the reasons why they were determined to be infeasible.

- **Midway Parkway south of Estabrook Drive**
  Three concepts were considered for this segment of roadway, including removal of the roadway, which was a recommendation of past studies, conversion of the segment to one-way northbound, or restricting the access at Midway Parkway/Horton Avenue to right-in/right-out only. The first two options would improve traffic flow through Como Park by eliminating conflicts at the Midway Parkway/Estabrook Drive intersection and both the second and third options would eliminate some or all the left-turn conflicts at the Midway Parkway/Horton Avenue intersection. However, these changes would also force as many as 6,000 additional vehicles per day onto Hamline Avenue and Lexington Parkway, which would only relocate the conflicts and congestion on the roadways at the perimeter of Como Park.

- **Drop-Off on Midway Parkway**
  A loading/unloading and bus drop-off was considered on Midway Parkway near Como Town, which was also a recommendation of a past study. This location is convenient to the Como Town

entrance into the Zoo, Conservatory, and Como Town. However, with on-street parking and a large number of pedestrian crossings of Midway Parkway, the addition of bus and vehicle drop-off traffic would contribute to the number of conflicts and the potential congestion on Midway Parkway.

- **Parking Ramp at Beulah Lot**
  A two- or three-story parking ramp could be provided on top of the existing parking lot located on the former Beulah Lane. The advantage of this concept is that it would have very little, if any, impact on green space and above grade structured parking is considerably less costly to construct compared with below grade structures. However, an above ground structure would impact the West Picnic Grounds landscape, which is considered historically significant. In addition, the soils analysis completed as part of the 1984 Master Plan study identified most of the area just south of Midway Parkway, including the existing parking area, as having "soils not suitable for development".

Source: Como Park Master Plan, 1984

- **Pedestrian/Bicycle Crossing of Burlington Northern Santa Fe (BNSF) Railroad**
  The active railroad on the southern boundary of Como Park acts as a barrier to north/south pedestrian and bicycle traffic. Currently, crossings are provided at Lexington Parkway (trail underpass), the University of Minnesota Transitway (bike and bus bridge), and Raymond Avenue (sidewalk and roadway underpass). While Snelling Avenue also has an overpass of the rail line, no sidewalk or trail is provided along the roadway, so pedestrians and bicyclists would be forced to use the shoulder. However, when evaluating an additional crossing of the railroad between Lexington Parkway and Hamline Avenue, it became clear that there was not any logical connection on the Energy Park Drive side of the crossing due to the locations of the buildings and public streets and the lack of any bike or pedestrian facilities on those streets. Feedback from the PAC also indicated that such a crossing would not benefit users of the park, who primarily use the existing crossing on Lexington Parkway. Given the cost of constructing an

underpass of an operating railroad, the lack of any potential connections on the south side of the railroad, and the small number of potential users of the crossing, this concept was eliminated from further consideration.

- **Shuttle Parking Lot at Central Facilities Site**
  Several different locations within Como Park were considered as potential permanent sites for the Como Shuttle, including the current Saint Paul Parks and Recreation Central Facilities site at Hamline Avenue/Jessamine Avenue. The major advantages of this site are the proximity to McMurray Fields, making it convenient for the Como Shuttle as well as league sports and tournaments, and it would have no impacts on green space. In addition, a 400-space parking lot would have a smaller footprint than the existing buildings on the site, which would make it possible to actually add green space or buffer between the parking and the residences on Hamline Avenue. However, this alternative would require acquisition of an existing site and building or construction of a new facility within the City, at an expected cost of more than $30 million. The feasibility of this concept even as a long-term option is limited due to the significant costs associated with the relocation of the existing services and facilities.

6. Implementation Plan

The project phasing is integral to the successful implementation of the plan; therefore the recommended improvements have been categorized as short-term, mid-term, and long-term. Reference maps of the locations and priorities of the recommended improvements are provided in **Figure 6.1** and **Figure 6.2**, as well as a phased list of improvements with estimated cost information in **Table 6.1**. Each of the recommendations is described and discussed below according to priority, but are also shown on **Figure 6.3 – 6.11** according to issue area (Roadway, Parking, Shuttle/Transit, Pedestrian/Bicycle, and Signing/Wayfinding).

Table 6.1 – Como Regional Park Transportation Implementation Plan

Recommendation Number	Description	Estimated Costs*
Short-Term Improvements (0-2 Years)		
P9	Agreement for off-site shuttle lot for 2011-2012	-
S1	Shuttle/circulator stop at Como Town	$5,000
P3	Lot Full sign system	$250,000
W3	Parking lot naming and destination wayfinding signing	$40,000
W4	Information kiosks	$50,000
B1	Bike sharing hubs	$50,000
B2	Bike parking - standard and with trailers	$10,000
T1	Transit shelters at bus stops in the park	$25,000
P7	Initiate negotiations with BNSF Railroad for right-of-way along Jessamine Avenue	-
R7	Rename Horton Avenue and Como Avenue between Lexington Parkway and Hamline Avenue	$5,000
		Total Cost $410,000
Net parking change = 0 spaces. Shuttle usage goal = 8% Walk/Bike/Transit mode share goal = 10%		
Other Short-Term Recommendations		
Alternative mode information and maps on Como website (walk, bike, transit)		-
Provision of alternative mode and shuttle information through group permit process		-
Map of shuttle lot location(s) on website, in addition to schedule		-
Mid-Term Improvements (2-4 Years)		
P9	Agreement for off-site shuttle lot for 2013-2020	*Dependent on property owner negotiation*
P1	Shuttle lot within Como Park	$1,000,000
P10	Permit parking	$15,000
P2	Paid parking	$50,000
S3	Shuttle/circulator stop at Como Pool	$5,000
S2	Shuttle/circulator stop at Lakeside Pavilion	$5,000
B6	Trail connection from Como Pool to Horton Avenue	$100,000
R6	Roundabout at Horton Avenue/Midway Parkway	$800,000
R5	Turnaround and driveway closure at group picnic pavilion	
P6	Additional parking spaces in group picnic pavilion lot	
B5	Pedestrian crossing at Horton Avenue/Midway Parkway roundabout	
B4	Pedestrian crossing improvements - Lexington Parkway	$250,000
		Total Cost $22,225,000
Net parking change = +885 spaces. Shuttle usage goal = 10%. Walk/Bike/Transit mode share goal = 10%		

* Estimated costs include construction and engineering/administration costs. Does not include any potential right-of-way costs.

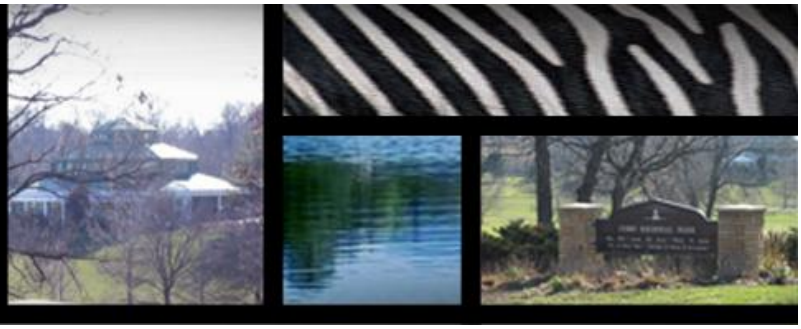


Table 6.1 (continued) – Como Regional Park Transportation Implementation Plan

Recommendation Number	Description	Estimated Costs*
Mid-Term Improvements (5-10 Years)		
P4	Underground ramp at Visitor Center	$20,000,000
R2 R1 P5	Shuttle/visitor drop-off at Visitor Center Turnaround at Conservatory Bus/vehicle staging on Nason Place	$800,000
B3	Bike/pedestrian path on Hamline Avenue	$300,000
B7	Bike/pedestrian path from McMurray Fields to Horton Avenue	$200,000
W1 W2	Freeway guide signs at Snelling Avenue for eastbound traffic Guide signs on Lexington Parkway and Snelling Avenue	$600,000
R8	Lexington Parkway/Horton Avenue intersection	$700,000
R9	Como Avenue/Wynne Avenue realignment, Como Pool to Beulah Lane	$800,000
		Total Cost $25,625,000
Net parking change = -80 spaces. Shuttle usage goal = 10%. Walk/Bike/Transit mode share goal = 14%		
Other Mid-Term Improvements		
Opportunities for medians and landscaping to direct pedestrians, provide median refuge, and discourage mid-block crossings		*Dependent on size and number of locations*
Long-Term Improvements (10-20 Years)*		
P8	Permanent off-site shuttle parking lot	*Dependent on property owner negotiations*
R4	Roundabout at Midway Parkway/Estabrook Drive	$400,000
R10 P7	Jessamine Avenue realignment and two-way traffic Angled parking on Jessamine Avenue	$1,500,000
R9	Como Avenue/Wynne Avenue realignment from Beulah Lane to Hamline Avenu	$600,000
W3	Destination signing to Como Park on Regional Bicycle Network	$50,000
R3	Midway Parkway/Hamline Avenue intersection	$500,000
B8	Trail connection on Roselawn Avenue, Lexington Parkway to Hamline Avenue	$300,000
B9	Trail connection on Lexington Parkway, Larpenteur Avenue to Nebraska Avenu	$300,000
B10	Trail connection on Lexington Parkway, Jessamine Avenue to Minnehaha Aver	$500,000
		Total Cost $4,150,000
Net parking change = +100 spaces. Shuttle usage goal = 12%. Walk/Bike/Transit mode share goal = 18%.		
Other Long-Term Improvements		
Opportunities for underused parking lots to be removed or rebuilt as pervious surface or reinforced turf		*Dependent on treatment, size, and number of locations*

* Estimated costs include construction and engineering/administration costs. Does not include any potential right-of-way costs.

6.1 Short-Term Improvements and Phasing (0-2 Years)

The improvements identified for short-term implementation are generally actions that are relatively low cost, do not require policy changes, and have the goal of increasing shuttle ridership, usage of other remote parking areas within the Park, and mode share. The implementation of these projects will not change the overall parking supply in Como Park, but can help to decrease the parking demand and decrease congestion. The projects listed below are listed in order of priority within the two-year timeframe.

- **P9 - Agreement for off-site shuttle lot for 2011-2012**

The highest priority action following the completion of this study should be to establish a location for the remote shuttle lot for at least a two-year time period. The Minnesota State Fair parking lot on Como Avenue that has been used for the Como Shuttle in 2009 and 2010 is a viable option if an agreement can be negotiated for free or low cost use. There were only five other sites identified that meet the necessary criteria of being located within two miles of Como Park and having a parking capacity of approximately 300 to 400 parking spaces:

  - 1200 Energy Park Drive
  - 1225 Bandana Boulevard W
  - 1015 Bandana Boulevard W
  - 1450 Energy Park Drive
  - 1771 Energy Park Drive (Midway Stadium)

  Several of these sites would have uses on weekdays that would make the lot unavailable for shuttle use and the Midway Stadium site also has events that limit the times it would be available for the shuttle.

  Sites that are further away or have less parking capacity would be expected to reduce the utilization of the Como Shuttle and therefore are not recommended, even in the short term. In

addition, due to the critical nature of the shuttle lot to the reduction in parking demand, it is also recommended that permit parking (discussed in the next section) not be implemented until an agreement with the Minnesota State Fair can be successfully negotiated or until it is determined that an agreement cannot be reached and a different site or on-site lot need to be pursued.

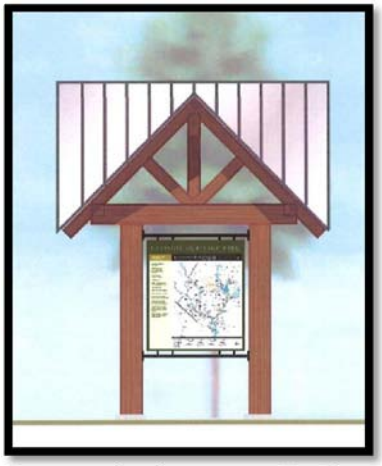
- **S1 - Shuttle/circulator stop at Como Town**
  It is recommended that a stop be added at Como Town for the Como Shuttle. This stop can serve visitors to the Zoo, Como Town, and the West Picnic Grounds.

- **P3 - Lot Full sign system**
  The "Lot Full" signs are designed to provide information about the number and location of available spaces to visitors as they enter the park. The signs would reduce or eliminate vehicles circulating through the park looking for parking and direct visitors to remote lots served by the shuttle/circulator. The signing system does require the installation of loop detectors and small medians and the entrance and exit of each parking lot. A computerized system can then continuously calculate the number of available spaces to update the OPEN/FULL signs at the entrance to each lot and the overall parking availability signs at key locations such as Hamline Avenue/Midway Parkway, Hamline Avenue/Horton Avenue, Lexington Parkway/Como Avenue, and Lexington Parkway/E Como Lake Drive. The P3, W3, and W4 improvements should all be implemented together to maximize their benefit.

Example of a potential design for wayfinding signs

- **W3 - Parking lot naming and destination wayfinding signing**
  Naming all the parking lots within Como Park is important to the success of the parking availability signs on key roadways approaching the park. In addition, an overall plan for wayfinding is needed to direct visitors to all the features of the park. In addition, the existing signing for the shuttle lot is designed to provide the maximum degree of flexibility so that the signs can be moved or covered depending on if the shuttle is operating and where the shuttle lot is that day. However, the signs sit very low to the ground, making them less visible, and additional signing is needed at key locations, such as the exit ramps from Snelling Avenue onto Como Avenue.

- **W4 - Information kiosks**
  As the final component of the signing improvements, information kiosks will orient visitors from parking areas to and from the features of the park. The kiosks should include "You Are Here" maps and be consistent with the prototype already developed by the City of Saint Paul Parks and Recreation Department.



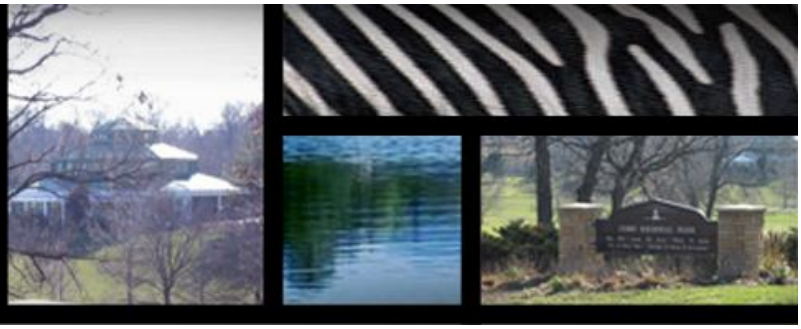
Information kiosk prototype developed by the City of Saint Paul

- **B1 - Bike sharing hubs**
  The purpose of the bike sharing hubs is to facilitate travel from remote parking lots to the attractions with the highest parking demand. The hubs are recommended to be located near the Zoo/Conservatory/Como Town, the Lakeside Pavilion, and McMurray Fields.

- **B2 - Bike parking – standard and with trailers**
  Additional bike racks are recommended to be installed at key locations that currently do not have any bike parking, including McMurray Fields and Como Golf Course. Some of the racks should be installed such that there is adequate space to park bikes with trailers and covered parking should also be considered.

- **T1 - Transit shelters at bus stops in the park**
  Transit amenities are recommended to encourage increased transit mode share to and from the park.

- **P7 - Initiate negotiations with BNSF Railroad for right-of-way along Jessamine Avenue**
  The potential for providing parking spaces on the south side of Jessamine Avenue is dependent on the ability to acquire a 20- to 30-foot strip of right-of-way from the BNSF Railroad corridor. As the negotiations with the railroad would be expected to be a very lengthy process, it is recommended that they be initiated in the short-term because the outcome will affect the



implementation of the other improvements on Jessamine Avenue, Beulah Lane, and Como Avenue.

- **R7 - Rename Horton Avenue and Como Avenue between Lexington Parkway and Hamline Avenue**
  The segments of roadway between Hamline Avenue and Lexington Parkway tend to generate confusion for both visitors and Saint Paul residents. It is recommended that Horton Avenue be renamed as Como Avenue, which will then necessitate the renaming of the existing Como Avenue segment. There are no residential properties or other buildings on this segment of Horton Avenue, so the renaming will not create the need for re-addressing.

- **Other short-term recommendations**
  In addition to the improvements listed above, shuttle and alternative mode information should be provided prominently on the Como Park Zoo and Conservatory, and Como Town websites, as well as providing the information as part of the group rental process.

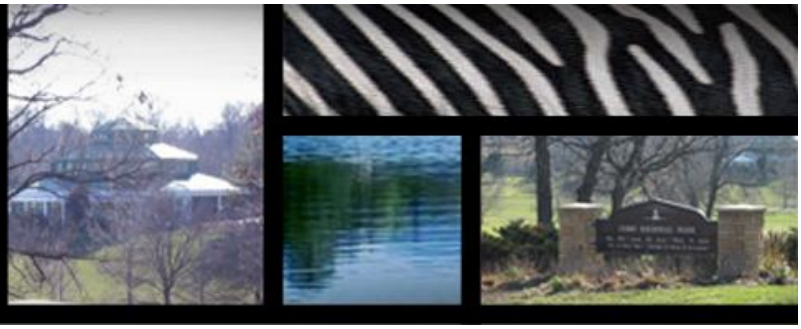
6.2 Mid-Term Improvements and Phasing (2 -10 Years)

The improvements recommended for mid-term implementation are generally projects that require greater funding resources, are coordinated with another project (such as the Como Pool), or will require new policies or procedures. If all of these projects are implemented, the parking supply would be increased by a total of 820 spaces while supporting the mode share goal of 14 percent transit/ walk/bike and 10 percent shuttle capture. The mid-term improvements were broken into two phases in recognition of several of the projects that have greater urgency and need to be completed at the beginning of the eight-year time frame. All of the improvements are listed in order of priority within each phase.

Permit Parking

The importance of permit parking to the Como Park residents west of Hamline Avenue was recognized as part of this study, and permit parking is certainly a component that is recommended as part of the overall plan for parking management in and around Como Park. However, implementation of full permit parking in 2011 would have several negative impacts on the overall transportation and parking system:

- There are existing issues with parking demand exceeding parking supply on summer weekdays and weekends. The implementation of permit parking in 2011 before other improvements can be made, such as improved signing to/from the shuttle and parking availability signs to direct visitors to open and underutilized parking areas, means that there would be nothing to fill the gap in the convenient parking supply. Therefore, the existing parking issues wouldn't be solved,



but would be pushed to other areas – vehicles parking further into the neighborhood and increased traffic due to additional vehicles circulating in the neighborhood and Como Park in search of parking.

- A coordinated implementation of paid and permit parking will be the most effective tool to significantly increase usage of the Como Shuttle as well as alternative modes.
- Based on written communications from the Minnesota State Fair, the implementation of permit parking would jeopardize the continued free use of their parking lot for the Como Shuttle and the daily rental rate would exceed $160,000 for the summer season based on 2010 rates. Even rental of the least expensive parking lots at the north end of the fairgrounds would exceed $80,000 for the summer.
- Either rental or free use of an off-site parking lot requires the willingness of the property owner to negotiate an agreement.

The viability of the Como Shuttle is the most significant impact of the implementation of permit parking in 2011. While there are a few other nearby remote sites that could be explored for the shuttle, those sites are also subject to the willingness of the property owners to negotiate, a process that could not begin until late November 2010. In addition, even with funding for shuttle and parking lot signing in the park, it is unrealistic for construction of all those improvements prior to the City Council approved permit parking start date of May 1, 2011.. In order to build on the increased shuttle usage seen in 2010, it would be beneficial to delay the implementation of permit parking until other improvements have been put into place that can accommodate the shift in parking supply that will occur in the neighborhood.

Phase 1 (2-4 Years)

- **P9/P1 – Agreement for off-site shuttle lot for 2013 to 2020 or construction of a shuttle lot within Como Park**

  The implementation of this recommendation will actually need to start much sooner than two years, but is intended to establish a long-term location for the shuttle lot outside the park or a permanent location within the park. Potential off-site locations that have been identified include several large parking lots on Energy Park Drive between Lexington Parkway and Snelling Avenue as well as Midway Stadium, west of Snelling Avenue. Sites along Pierce Butler Route were also considered, but access to and from Lexington Parkway would undesirable due to the grade differences, connections on residential streets, and lack of visibility of the site. For this reason, the review focused on sites north of the southerly line of the BNSF railroad.

  The major advantages of providing the shuttle lot within the park are flexible use, such as for off-season or off-hour events, proximity to features of the park that can be reached on foot

(without riding the shuttle), and having a permanent location that visitors know how and where to access. The two potential sites identified within the park are the current overflow lot (former golf course lot) near Hamline Avenue/Arlington Avenue and in the golf course area near the current green for hole 5 and tee boxes for holes 6 and 9. The current overflow lot has the advantages of being an existing parking lot, which would result in the least green space impacts, it has the best connections to the park in terms of existing roadway connections and grades, there is the potential for two access points – one internal to the park and one to Hamline Avenue, and is the most cost effective option of all the sites considered within the park.

Concerns have been raised by the neighborhood about green space impacts as well as the need for buffer areas between parking and residential areas. Design treatments such as earth berms and landscape plantings could screen the parking area and pervious pavements can be used to limit some of the stormwater impacts of the additional pavement.

Existing view of the overflow parking lot from the Hamline Avenue/ Arlington Avenue intersection

The golf course option would only be feasible of a significant change was made to the use of the Como Golf Course, independent of the need for a permanent shuttle lot. Only if the golf course were either closed or modified to a 9-hole course should a parking facility be explored in that location.

In terms of weekday operations of the shuttle, the service is currently not cost effective on days with less than about 10,000 to 12,000 visitors because the capture rate is very low (2 to 3 percent of visitors) . This should continue to be monitored over the next two years as improvements are made to direct more visitors to the shuttle and incentives for shuttle

ridership, such as paid parking, are implemented. A balance is needed between satisfying parking demand on busy days and keeping the shuttle cost effective so that it can continue to be operated.

- **P10 – Permit parking**
  Following the negotiation for or construction of a long-term or permanent location for remote shuttle parking, permit parking should be established in the area within 1,500 feet of the Hamline Avenue/Midway Parkway intersection, as recommended in Public Works' 2009 study. Additional areas may also need to be considered that have since met both the petitioning requirements and have parking occupancies greater than 75 percent during the peak summer season. With the implementation of paid parking, permit parking may become an issue for a wider area in the neighborhood west of the park as well as east of Lexington Parkway, but this will ultimately be determined through the City's petition process.

  In addition, it is recommended that the neighborhoods consider alternate restrictions for the permit area, such as time limited parking (such as two hours) except by permit or time limited parking alone. Time limited parking can be very effective in creating turnover that makes parking spaces available for residents and their guests, as well as visitors to Como Park. Permit parking on one side of the street may also be an alternative for ensuring that parking is available for residents while also making the maximum use of the parking supply.

- **P2 – Paid parking**
  The implementation of paid parking is intended primarily to create greater incentives for use of the Como Shuttle, which provide free parking and free rides to the front doors of the major areas of the park. The areas recommended for paid parking are those that were observed to be full for the entire day on both weekdays and weekends, which are shown in **Figure 6.4** and include both on-street and off-street areas.

  Due to the seasonal demand of parking at the Zoo and Conservatory, paid parking could be implemented on a limited basis only when the shuttle was operating. During the off-peak seasons when the average daily attendance to the Zoo and Conservatory is less than 8,000 visitors per day, parking supply is not an issue and the Como Shuttle isn't running, so the option of using the shuttle as a free parking resource isn't available.

  Parking, admission, and provision of remote parking were reviewed at 21 other parks and zoos around North America, including two other free zoos and one regional park in Minneapolis. The findings are summarized in **Table 6.1** on the next page.

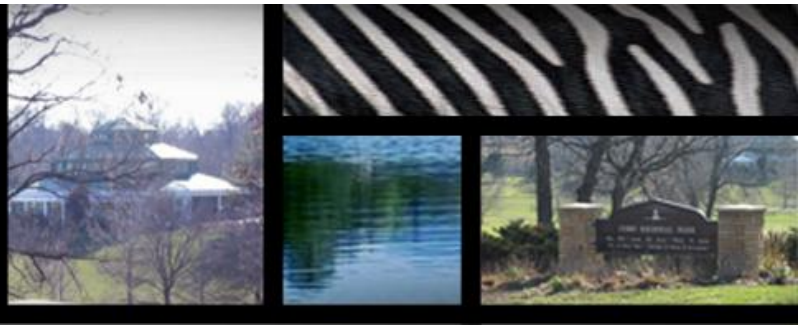


Table 6.1 - Zoo and Park Fee Comparison

Facility	Admission (Adult)	Parking	Shuttle	Notes
Audubon Park and Zoo (New Orleans)	$13.50	Free	Internal between park and zoo	
Bronx Zoo (New York City)	$16.00	$13.00	Internal zoo circulation only - $3	
Calgary Zoo	$19.00	$5.00		1.2 million visitors in 2009 Paid parking implemented 2009
Central Park and Zoo (New York City)	$12.00 (zoo)	No on-site parking available		
Cincinnati Zoo & Botanical Garden	$14.00	$7.00		
Como Park Zoo and Conservatory	Free	Free	Shuttle from remote parking to Zoo/Conservatory	3.4 million visitors in 2009
Denver Zoo	$13.00	Free		Parking ramp constructed 2002
Franklin Park Zoo (Boston)	$14.00	Free	Free shuttle from downtown 3-4 days in summer	
Golden Gate Park (San Francisco)	Free-$25.00, varies for each attraction	$3/hour		
Indianapolis Zoo	$14.50	$6.00		
Lincoln Park Zoo (Chicago)	Free	$17.00		Approximately 3 million visitors per year
Los Angeles Zoo & Botanical Garden	$13.00	Free	Internal zoo circulation only - $4	
Memphis Zoo	$15.00	$5.00		
Minnehaha Regional Park	Free	$0.75/hour		Paid parking implemented 2004
North Carolina Zoo (Asheboro)	$10.00	Free	Internal zoo circulator Shuttle between parking lots	
Oregon Zoo (Portland)	$10.50	$2.00	Shuttle from parking lots to zoo , peak days only	1.6 million visitors in 2009 Paid parking implemented 2004
Philadelphia Zoo	$18.00	$12.00	Circulator among Philadelphia attractions - $2	
Riverbanks Zoo & Garden (Columbia, SC)	$11.75	Free	Internal circulator between zoo and garden - free	
San Diego Zoo	$21.00	Free		
San Francisco Zoo	$10.00	$5.00		
Forest Park/St. Louis Zoo	Free	$11.00	Circulator among St. Louis attractions - $2	3.1 million zoo visitors in 2009
Woodland Park & Zoo (Seattle)	$16.50	$5.00		

The average adult admission price was $12, more than 60 percent of the sites charged for parking, and the average cost of parking was $5. Also, nearly all the facilities that charged for parking used a flat fee system.

There are a number of different paid parking mechanisms that could be used at Como Park, including parking meters, pay on foot, and cashier/automated payment at the entrance or exit to parking lots. If paid parking was seasonal only, then the simplest operations for both Como Park and public would be either payment at the entrance or exit or pay on foot. In addition, it is recommended parking permits also be sold as a yearly/seasonal pass or as part of a Como Zoo and Conservatory membership to make it more convenient for frequent visitors. A flat or metered rate between $2 and $5 would be appropriate for Como Park when paid parking is implemented.

Concerns were raised during the project about the impact that paid parking might have on donations to the Como Zoo and Conservatory, as well as other revenue generators within the park. There are no comprehensive studies that have been done to evaluate the impact that the introduction of paid parking because there are so many variables that influence attendance and spending such as nearby road construction, a new or improved attraction and another park, and the overall economic climate.

However, parking demand relative to rate increases is fairly "inelastic"; that is, parking demand is not significantly impacted based on moderate increases in parking rates or even the implementation of paid parking where it once was "free". The standard parking demand impact factor based on parking rate increases is as low as 0.25 percent. This is most evident for retail businesses and restaurants where there can be significant competition for patrons. However, for Como Regional Park, the popularity or attractiveness of the zoo and park would not be expected to be significantly impacted by paid parking because the zoo and park are unique resources within the Twin Cities.

In terms of implementation, the reasons for implementing a parking charge can be communicated to visitors in ways that will make sense as part of a good overall marketing strategy. Parking is never “free” because there are always costs associated with paving, maintenance, lighting, cleaning, and security. Connecting the parking fees to the Como Shuttle and Como Park’s overall plan for sustainability of the transportation and parking system can become a very positive message.

- **S3/S2 – Shuttle/circulator stop at Como Pool, and shuttle/circulator stop at Lakeside Pavilion**
  Following the opening of the new Como Pool in 2012, the Como Shuttle should use at least one bus as a circulator that makes stops at multiple locations including the Visitor Center, Como

Town, and Como Pool, as well as potential stops at McMurray Fields and the Lakeside Pavilion. The circulator will provide better utilization of parking spaces that are currently unoccupied during much of the day, even on weekends. Other shuttle buses should provide only direct service between the remote parking lot and the Visitor Center so that ridership isn't negatively impacted by the longer route times of the circulator.

- **B6 – Trail connection from Como Pool to Horton Avenue**
  This path is part of the current plans for the Como Pool construction and will connect pedestrians, bicyclists, and transit riders to the pool area.

- **R6/R5/P6/B5 – Roundabout at Horton Avenue/Midway Parkway, turnaround and driveway closure at group picnic pavilion, additional parking spaces in group picnic pavilion lot, and pedestrian crossing at Horton Avenue/Midway Parkway roundabout**
  These improvements are recommended to be implemented together due to their proximity and interrelationship. During off-peak hours the Horton Avenue/Midway Parkway intersection has relatively low turning volumes and operates acceptably. However, during the peak traffic periods of Como Park, the intersection is the source of significant congestion and conflicts due to the large number of left-turning vehicles, and the limited sight lines due to the horizontal curves in the roadway and the vertical curves of the adjacent landscape. In addition, the parking lot next to the group picnic pavilion has a driveway onto Midway Parkway that is located too close to the intersection, contributing to the congestion and allowing vehicles to bypass the intersection by cutting through the parking lot.

  Various options for this intersection have been considered in past studies and as part of the current effort, including the removal of a segment of Midway Parkway, one-way operations on Midway Parkway, all-way stop control, and a traffic signal, but no significant changes have been eliminated and the operations issues have continued. The one-way, roadway removal and right-in/right-out access options were previously eliminated from consideration, as described in Chapter 4. All-way stop control and installation of a traffic signal were also evaluated. While a

full warrant analysis was not conducted, based on the available data the intersection would not meet the necessary warrants for traffic signal installation, as documented in the *Minnesota Manual on Uniform Traffic Control Devices*, and would likely only meet warrants for stop control during the peak periods of the park. Therefore, installation of this type of control would handle peak traffic volumes very well, but would operate very inefficiently, with unnecessary delays, during off-peak times of the day and off-peak seasons of the year. A roundabout is recommended for the intersection because it would eliminate all left-turn conflicts, slow vehicles speeds, and can operate efficiently during both peak and off-peak times.

There have been concerns expressed about a roundabout due to safety concerns for vehicles and pedestrians, as well as potential green space impacts to the slope south of the existing intersection. Studies of roundabouts throughout the United States have shown that they actually reduce crashes at intersections and the crashes that do occur are less severe because they are at lower speeds and do not involve any right-angle collisions. The roundabout would also serve as a pedestrian crossing of Horton Avenue, which is a benefit to pedestrians because vehicles are traveling slower and they can cross one direction of traffic at a time, with a median in the middle. This type of crossing is strongly recommended over any new midblock crossing of Horton Avenue east of Midway Parkway, where drivers are traveling at higher speeds and would be less likely to stop for pedestrians. Finally, removal of the parking lot driveway on Midway Parkway would eliminate the potential for cut-through traffic and also provide a drop-off area near the group picnic pavilion.

The operations and safety of the Horton Avenue/Midway Parkway intersection need to be addressed and the roundabout is recommended as the best option to satisfy those needs, despite some negative feedback from residents. As this project moves toward implementation, public education of how to safely use roundabouts will very likely be necessary, as they are still a relatively new measure in Minnesota and no roundabouts have yet been constructed in the City of Saint Paul.

- **B4 – Pedestrian crossing improvements - Lexington Parkway**
  The existing crosswalk on Lexington Parkway at E Como Lake Drive can be a difficult crossing for pedestrians and bicyclists due to the horizontal and vertical curves of the roadway and the high traffic volumes. Pedestrians also frequently cross Lexington Parkway from the Lakeside Pavilion to the Golf Course/Ski Center where there is no designated crossing. Due to the grade difference on each side of the roadway, as well as the difficulty in making trail connections from a new crossing back to the existing trail, either an overpass or an underpass would be very difficult to construct. Based on the crossing demands in this area and the conflicting traffic volumes and speeds, a study is recommended to be completed in phase 1 of the mid-term time frame to identify and design the most appropriate crossing of Lexington Parkway.

Phase 2 (5-10 Years)

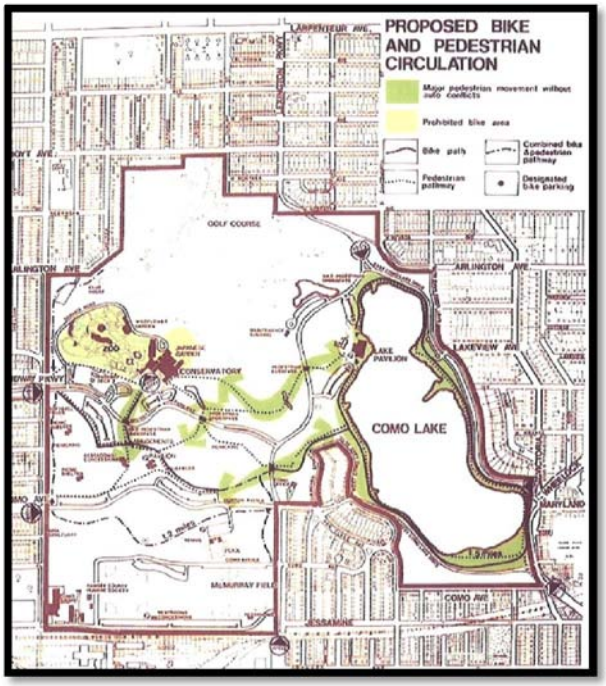
- **P4 – Underground ramp at Visitor Center**
  The priority of the 400-space underground ramp under the location of the existing Palm Lot is based on the need to accumulate significant funding resources. The final location, size and access to an underground ramp will need to be determined to develop a more accurate cost for the project, and it would likely take several years to identify the necessary funding. The location of the ramp as shown in **Figure 6.4** is partially under Estabrook Drive and the shuttle/visitor drop-off based on criteria of providing 400 spaces in a two-level ramp. This supply of parking will meet the need for additional convenient parking for the Zoo, Conservatory, and Como Town.

  The main advantages of the underground structure are little or no impacts on green space, the opportunity for a green roof or formal garden over the structure, and minimizing or eliminating any impacts to historic features of the park. However, the cost is significantly greater than at-grade parking and even above-grade parking structures.

- **R2/R1/P5 – Shuttle/visitor drop-off at Visitor Center, turnaournd at Conservatory, and bus/vehicle staging on Nason Place**
  The need for a drop-off close to the Zoo and Conservatory has been recommended in a number of past plans to better accommodate the needs of families and visitors with limited mobility. Constructing the drop-off in front of the Visitor Center makes it most convenient for the majority of visitors and a portion of the loop should be reserved for shuttle use. In conjunction with the construction of the drop-off, the removal of the Estabrook Drive/Nason Place intersection and the portion of Nason Place in front of the Conservatory are recommended to eliminate the pedestrian and vehicle conflicts at the intersection, which has multiple pedestrian crossings, as well as maximizing the space available for the drop-off. This creates a pedestrian-

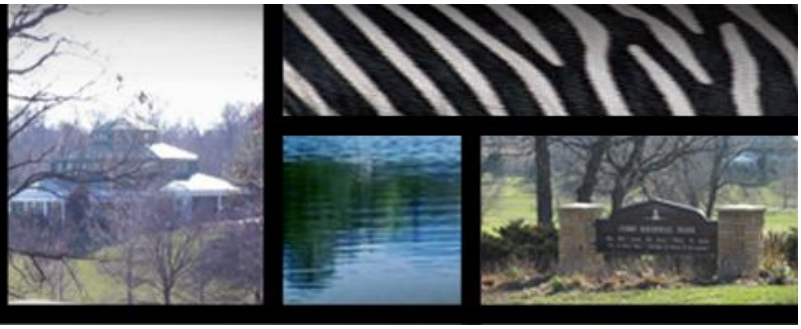
only space in front of the Conservatory, a portion of which could be turned back to green space. However, this requires Nason Place to become a two-way roadway with a turnaround east of the Conservatory. This location is already used for bus drop-off, the turnaround will continue accommodate these vehicles, and the roadway can be widened slightly to provide space for staging of buses or other vehicles, such as limousines. The turnaround would be constructed in the area that currently has handicapped parking spaces and therefore is expected to have minimal impacts on the green space and trees in this area.

To allow for two-way traffic on Nason Place, which is only 30 feet wide, the existing parking (81 spaces) would need to be eliminated or the roadway would need to widened by two feet to accommodate parking on one side, assuming 11-foot traffic lanes, an 8-foot parking lane, and a 2-foot reaction between the curb and the driving lane. It is important that the parking availability signing (recommendation P3) is implemented prior to the turnaround on Nason Place to reduce the potential of vehicles driving down Nason Place looking for parking when there are no spaces available.



Source: Como Park Master Plan, 1984

- **B3 – Bike/pedestrian path on Hamline Avenue**
  Construction of this path represents completion of the one remaining trail segment that was identified in the 1984 Master Plan. This route would provide a direct north/south route along the park on a roadway that carries less vehicle traffic



than Lexington Parkway.

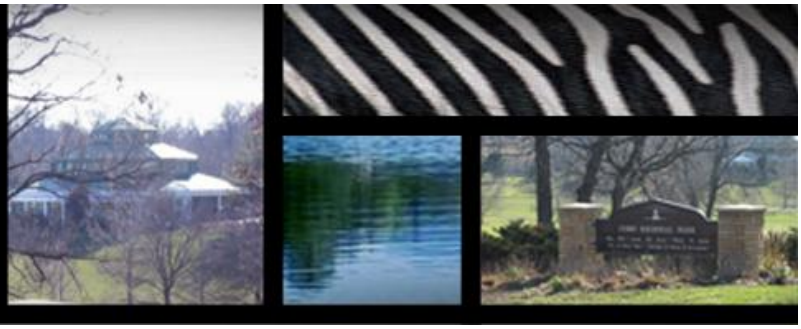
- **B7 – Bike/pedestrian path from McMurray Fields to Horton Avenue**
  Construction of this pathway segment is intended to facilitate walking and biking to all areas of the park and encourage greater utilization of the remote parking areas.

- **W1/W2 – Freeway guide signs at Snelling Avenue for eastbound traffic, and guide signs on Lexington Parkway and Snelling Avenue**
  The existing freeway signing from I-94 and Trunk Highway (TH) 36 to Como Park directs all visitors to Lexington Parkway based on Mn/DOT preference. While this does provide consistency, it would be preferable to direct eastbound vehicles to exit onto Snelling Avenue, which has greater capacity than Lexington Parkway and spreads the traffic demand over several routes. Snelling Avenue can become congested during the AM and PM peak hours, but these times do not coincide with the peak traffic periods of Como Park.

  This recommendation should not be implemented until a long-term or permanent shuttle lot location has been established so that the freeway signing directs users to the appropriate exits to best access the remote shuttle parking.

- **R8 – Lexington Parkway/Horton Avenue intersection**
  During peak time periods at Como Park, the northbound left-turn queue at this intersection can extend beyond Como Avenue and negatively impact the overall traffic flow on Lexington Parkway. In addition, the current northbound lane merge north of Horton Avenue is shorter than a standard lane drop due to the width of the historic bridge over the former streetcar line. The existing right-of-way on Lexington Parkway constrains the potential to lengthen the left-turn lane and the transition from four lanes to two lanes is limited by the bridge width. Therefore, further modeling of this intersection for both weekday and weekend peaks is needed to determine feasible improvements to improve the operations and safety of the intersection.

- **R9 – Como Avenue/Wynne Avenue realignment, Como Pool to Beulah Lane**
  The roadway changes on the site plan shown in the Como Regional Park Pool Plan include the elimination of the Beulah Lane/Como Avenue intersection with turnarounds on each roadway. This part of the pool plan is not part of the construction scheduled to occur in 2010 to 2012, but the traffic analysis completed as part of the pool study showed that the proposed roadway changes will provide adequate capacity to handle the traffic to and from the pool. However, maintaining a connection from Como Avenue to Beulah Lane would be needed to best provide a circulator route to serve Como Pool and achieve better utilization of the parking at McMurray Fields. The roadway connection has potential grading impacts along the existing ridge and may limit potential expansion of the Woodlands Outdoor Classroom into this area, as well as



impacting existing green space, therefore the need for this improvement will need to be evaluated in the future based on traffic flow and parking demand at the pool and the need for circulator stops at both McMurray Fields and Como Pool.

- **Other mid-term improvements – Opportunities for medians and landscaping to direct pedestrians, provide median refuge, and discourage mid-block crossings**
  Specific locations for medians to provide pedestrian refuge or, alternatively, to discourage pedestrian crossings would have the greatest need and benefit on Horton Avenue and Midway Parkway where there are the greatest number of pedestrian crossings, but this type of improvement would also require the removal of some on-street parking. Opportunities for this type of improvement should be considered in coordination with other roadway and parking projects in the park.

6.3 Long-Term Improvements and Phasing (11-20 Years)

The improvements recommended for long-term implementation are generally projects that require significant coordination with other agencies or need further study to define their scope. If all the long-term projects are implemented, the parking supply would be increased by a total of 100 spaces and significant links to the regional bicycle network would be created in support of the mode share goal of 18 percent transit/ walk/bike. The projects below are listed in order of priority.

- **P8 – Permanent off-site shuttle parking lot**
  If the construction of a permanent shuttle lot within Como Park is determined to be infeasible, a permanent off-site location should be acquired, with the site selection guided by the criteria previously established (400 parking spaces within a 2-mile radius).

- **R4 - Roundabout at Midway Parkway/Estabrook Drive**
  The Midway Parkway/Estabrook Drive intersection currently has poor traffic operations and queuing due to the volume of vehicles circulating through the park during peak times and spillback from parking lots onto the roadways. Through the parking lot signing improvements, some of this traffic and congestion may be reduced sufficiently that additional improvements are not needed at the Midway Parkway/Estabrook Drive. The timing of this project would also be dependent on construction of the underground parking ramp – the roundabout would be impacted by the construction if it were built prior to the ramp and would likely be needed in conjunction with the opening of the ramp, which could add additional traffic onto Midway Parkway. Similar to the Midway Parkway/Horton Avenue intersection, a roundabout would have some green space impacts but is more efficient in accommodating both peak and off-peak volumes.

- **R10/P7/R9 – Jessamine Avenue realignment and two-way traffic, angled parking on Jessamine Avenue, and Como Avenue/Wynne Avenue realignment from Beulah Lane to Hamline Avenue**

This recommendation represents the reconstruction of Jessamine Avenue to connect to Como Avenue and the addition of angled parking on both sides of the roadway, which are both currently shown in the pool plan but are not funded for construction. The parking on the south side of Jessamine Avenue would require a strip of right-of-way from the BNSF railroad, as noted previously, but the angled parking along the entire north side of Jessamine Avenue could be constructed even if no additional property can be obtained and could be implemented sooner than 10 years, if desired. Parking on both sides of Jessamine Avenue would provide approximately 260 spaces that would be primarily unused during the day, making this area ideal for a circulator stop to better utilize the parking supply.

The need for the connection of Como Avenue/Wynne Avenue to Hamline Avenue should be reevaluated following the opening of the pool and the establishment of the circulator route and stops. It would provide a more direct route for the circulator and a more direct access to the pool from the west. However, as a new section of roadway, this connection adds significant impervious surface and impacts existing green space and may attract cut-through traffic, which would be detrimental to the operations and safety in the parking lot on the pool site. As a result, it is recommended that the need and benefit of this connection be carefully weighed against the impacts to determine its feasibility.

- **W3 – Destination signing to Como Park on regional bicycle network**
  With the expansion of the regional bicycle network, wayfinding signing should be added outside the City of Saint Paul to direct bicyclists to Como Park.

- **R3 – Midway Parkway/Hamline Avenue intersection**
  During peak time periods at Como Park, the all-way stop at this intersection combined with the close proximity of the Midway Parkway service roadways result in vehicle/vehicle and vehicle/pedestrian conflicts, as well as long queues. The location of the existing service

roadways limit the potential to construct a roundabout at this location and the intersection does not appear to meet warrants for installation of a traffic signal. Therefore, further modeling of this intersection for both weekday and weekend peaks is needed to determine feasible improvements to improve the operations and safety of the intersection.

- **B8/B9/B10 – Trail connection on Roselawn Avenue, Lexington Parkway to Hamline Avenue, trail connection on Lexington Parkway, Larpenteur Avenue to Nebraska Avenue, and trail connection on Lexington Parkway, Jessamine Avenue to Minnehaha Avenue**
  The implementation of these trail connections fills the gaps in the regional bicycle network around Como Park in the cities of Saint Paul, Roseville, and Falcon Heights. Construction of the trail segments identified in each city would need to be led by that city or by Ramsey County.

- **Other long-term improvements – Opportunities for underused parking lots to be removed or rebuilt as pervious surface or reinforced turf**
  With the construction of additional parking resources close to the Zoo and Conservatory, the need for and utilization of other parking areas should be evaluated to determine if they can be removed from the parking supply and returned to green space or if they are still used infrequently, could be repaved to provide a pervious surface for stormwater infiltration. The total cost for these types of pavements, including the base material, is about $8 to $11 per square foot of pavement compared to $4 to $7 per square foot for standard asphalt or concrete pavements.

6.4 Summary and Conclusions

The results of this study include many recommendations to be implemented over the next 20 years to best serve the parking and transportation needs of Como Regional Park. The study findings and recommendations, which are many, can be summarized in four key points:

- As the number of annual visitors to the park has grown, **the number of days each year when residents and visitors experience parking and traffic issues has also grown**. However, the maximum number of visitors per day has not changed since the Master Plan.
- **A combination of solutions is needed** including additional convenient parking spaces within the park and enhancements to the shuttle, transit, pedestrian, and bicycle networks. Making no improvements will not improve the existing issues and will not result in fewer visitors to the park.
- **A shuttle lot within the park** ensures the long-term viability of the shuttle and provides flexibility for accommodating peak days and events with less traffic and parking impacts in the residential neighborhoods.
- **A phased implementation** will allow the City to make low-cost improvements and judge their effectiveness while planning for larger investments.

Legend

Project Area

W Horton Ave

W Como Ave

W Jessamine Ave

Kimley-Horn and Associates, Inc.

NORTH

0 325 650 Feet

Figure 1.1 - Project Area

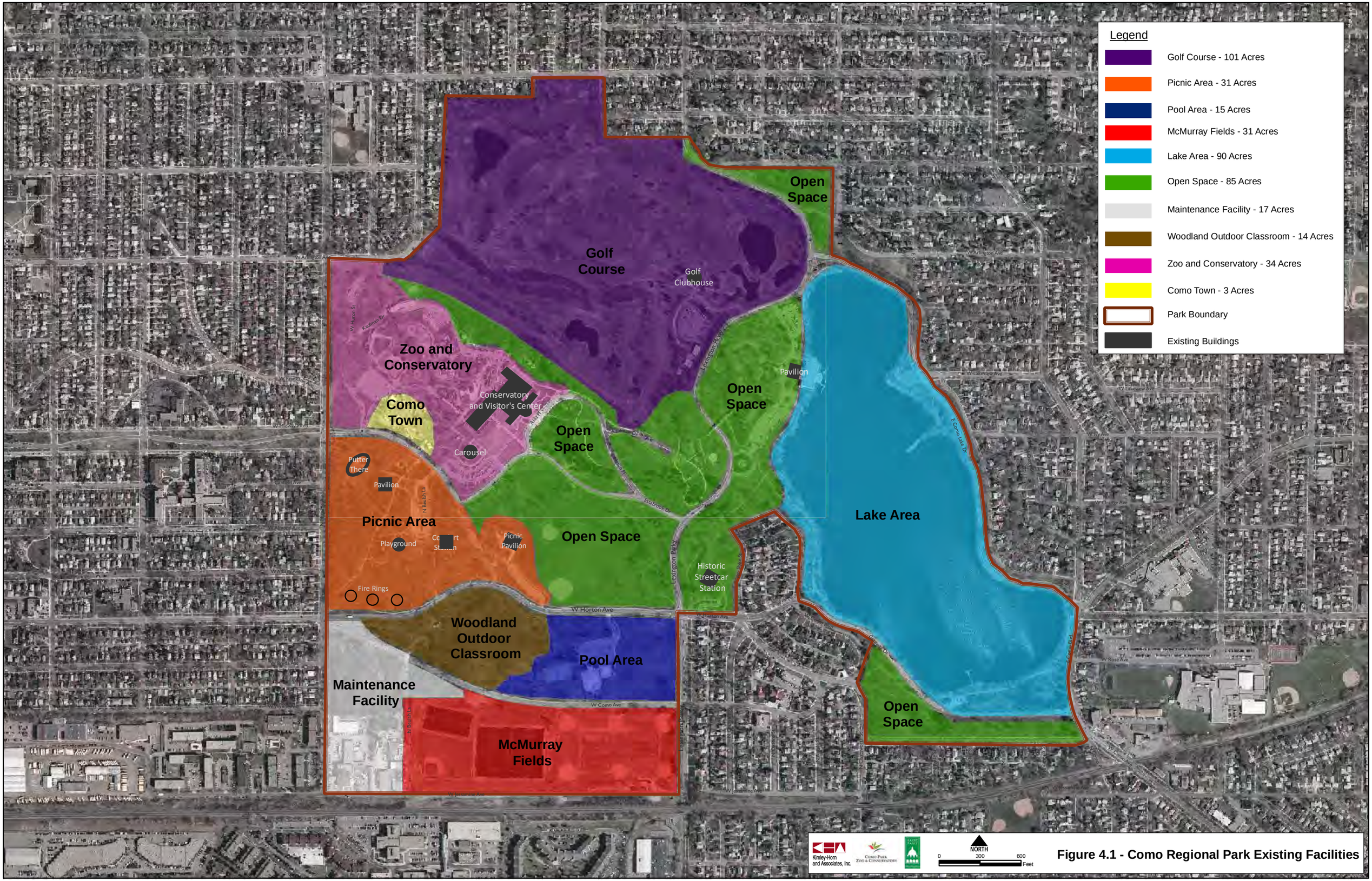


Figure 4.1 - Como Regional Park Existing Facilities

LARPENTEUR AVE
18,400 (9/07)
15,600 (8/77)

LARPENTEUR AVE
20,000 (9/07)

LARPENTEUR AVE
16,600 (9/07)
12,300 (8/77)

SNELLING AVE*
34,500 (2008)
36,000 (2004)
39,500 (2001)
38,000 (1999)

HAMLINE AVE
7,900 (8/06)
8,100 (5/04)
8,700 (4/98)
8,500 (6/95)
6,500 (8/77)

LEXINGTON PKWY
13,800 (9/05)
12,100 (4/01)
11,500 (11/97)
11,000 (10/94)
8,800 (1/89)
12,300 (7/77)

VICTORIA ST
3,300 (4/01)
3,500 (4/97)
4,500 (6/92)
4,200 (8/90)
2,500 (8/78)

HOYT AVE
800 (6/08)
800 (7/05)
1,500 (7/00)

HOYT AVE
1,500 (8/08)
1,900 (7/05)
3,000 (7/00)

HOYT AVE
1,900 (8/08)
2,100 (4/98)
1,900 (4/95)
1,400 (6/77)

HOYT AVE
2,600 (8/06)
3,300 (8/04)
2,100 (6/77)

HOYT AVE
1,800 (7/05)
1,900 (6/08)
2,200 (4/01)
1,800 (4/97)
1,800 (8/94)
1,700 (9/92)
1,900 (8/90)
1,300 (8/78)

VICTORIA ST
3,600 (7/00)

HAMLINE AVE
4,800 (6/10)**
5,700 (8/06)
7,000 (5/04)
7,200 (8/99)
7,300 (9/96)
7,500 (5/89)
6,400 (3/78)

LEXINGTON PKWY
11,600 (6/10)**
15,200 (9/05)
11,800 (10/01)
12,800 (4/97)
12,200 (9/94)
9,800 (2/92)
11,000 (5/89)
13,200 (4/78)

ARLINGTON AVE
1,800 (4/01)
1,600 (4/97)
1,700 (8/94)
1,600 (10/92)
1,500 (4/89)
1,100 (7/77)

SNELLING AVE*
34,500 (2008)
36,000 (2004)
39,500 (2001)
38,000 (1999)

MIDWAY PKWY
2,700 (6/10)**
2,200 (8/08)
2,500 (7/05)
2,100 (10/01)
2,100 (10/97)
2,000 (10/94)
2,300 (9/92)
2,600 (5/90)
4,200 (4/78)

MIDWAY PKWY
4,400 (6/08)
2,000 (10/97)
4,000 (7/96)
2,000 (10/94)
2,600 (4/78)

LEXINGTON PKWY
15,600 (9/05)
15,400 (7/01)
11,500 (10/97)
13,000 (5/94)
9,600 (6/77)

VICTORIA ST
2,700 (8/06)
2,800 (8/04)
2,900 (10/01)
2,900 (11/97)
2,900 (10/94)
3,700 (9/92)
4,300 (8/90)
2,200 (8/78)

PASCAL ST
1,400 (8/08)
1,300 (4/98)
1,400 (3/95)
1,200 (3/92)
1,300 (5/89)
1,200 (6/77)

MIDWAY PKWY
5,200 (6/10)**
3,400 (6/08)
4,300 (7/96)

ESTABROOK DR
1,500 (6/08)

HORTON AVE
7,100 (8/08)
6,400 (6/77)

E COMO LAKE DR
1,500 (6/08)
1,100 (3/05)
2,000 (6/99)
6,900 (3/78)

WHEELOCK PKWY
3,000 (4/08)
2,800 (3/05)
2,400 (11/77)

COMO AVE
12,600 (4/98)
9,700 (3/95)
9,500 (10/92)
11,400 (8/90)

COMO AVE
9,400 (7/05)

HAMLINE AVE
4,400 (8/06)
5,000 (5/04)
4,000 (2/98)
4,000 (2/95)
4,700 (6/92)
4,700 (5/90)
4,000 (3/78)

HORTON AVE
7,000 (3/05)
10,300 (6/99)
9,500 (7/96)
7,700 (6/77)

E COMO BLVD
5,900 (6/10)**
8,800 (8/06)
9,700 (5/04)
7,600 (5/77)

ENERGY PARK DR
7,500 (3/10)
9,800 (6/09)
13,300 (4/05)
9,200 (10/04)

COMO AVE
5,400 (6/10)**
8,300 (7/05)
9,200 (10/01)
9,000 (10/97)
8,100 (4/94)
10,500 (6/91)
8,400 (3/78)

HORTON AVE
5,700 (6/10)**
6,500 (5/05)
6,200 (4/99)
6,400 (7/96)
6,600 (8/94)
4,500 (4/92)
7,800 (6/89)
4,100 (4/78)

LEXINGTON PKWY
15,900 (6/10)**
21,800 (6/08)
14,700 (3/05)
16,700 (2/98)
18,300 (5/94)

COMO AVE
2,900 (8/08)
2,700 (3/78)

MARYLAND AVE
4,500 (6/08)
3,500 (8/05)
4,500 (6/01)
4,700 (4/97)
4,200 (3/91)
5,500 (6/77)

BREWSTER ST
1,300 (10/07)

SNELLING AVE*
39,500 (2008)
42,000 (2004)
46,000 (2001)
42,500 (1999)

HAMLINE AVE
2,000 (8/08)
1,600 (6/03)
2,000 (4/97)
2,400 (7/94)
2,100 (4/92)
3,500 (8/89)
1,600 (3/78)

GATEWAY DR
5,400 (8/06)
6,400 (6/04)
6,200 (7/01)
6,200 (4/97)
5,700 (11/94)
4,700 (4/92)
4,300 (1/89)
5,400 (4/78)

COMO PL
600 (8/02)

SNELLING AVE*
41,000 (2008)
41,000 (2004)
46,000 (2001)
42,000 (1999)

ENERGY PARK DR
13,300 (10/04)

SNELLING AVE

Source: City of St. Paul Public Works
* At these locations ADTs are provided. All other locations are raw counts.
** These are weekend raw counts. All other counts are weekdays.

Kimley-Horn and Associates, Inc.

COMO PARK ZOO & CONSERVATORY

SAINT PAUL

NORTH

0 150 300
HORIZONTAL SCALE IN FEET

Figure 4.2 - Historic Traffic Volumes

K:\TMC_DOT\DOT\ST_PAUL\COMO PARK\CAD\EXHIBITS\FIGURES\4-2_HIST_TRAF_VOLUMES.dwg September 22, 2010 - 8:13pm

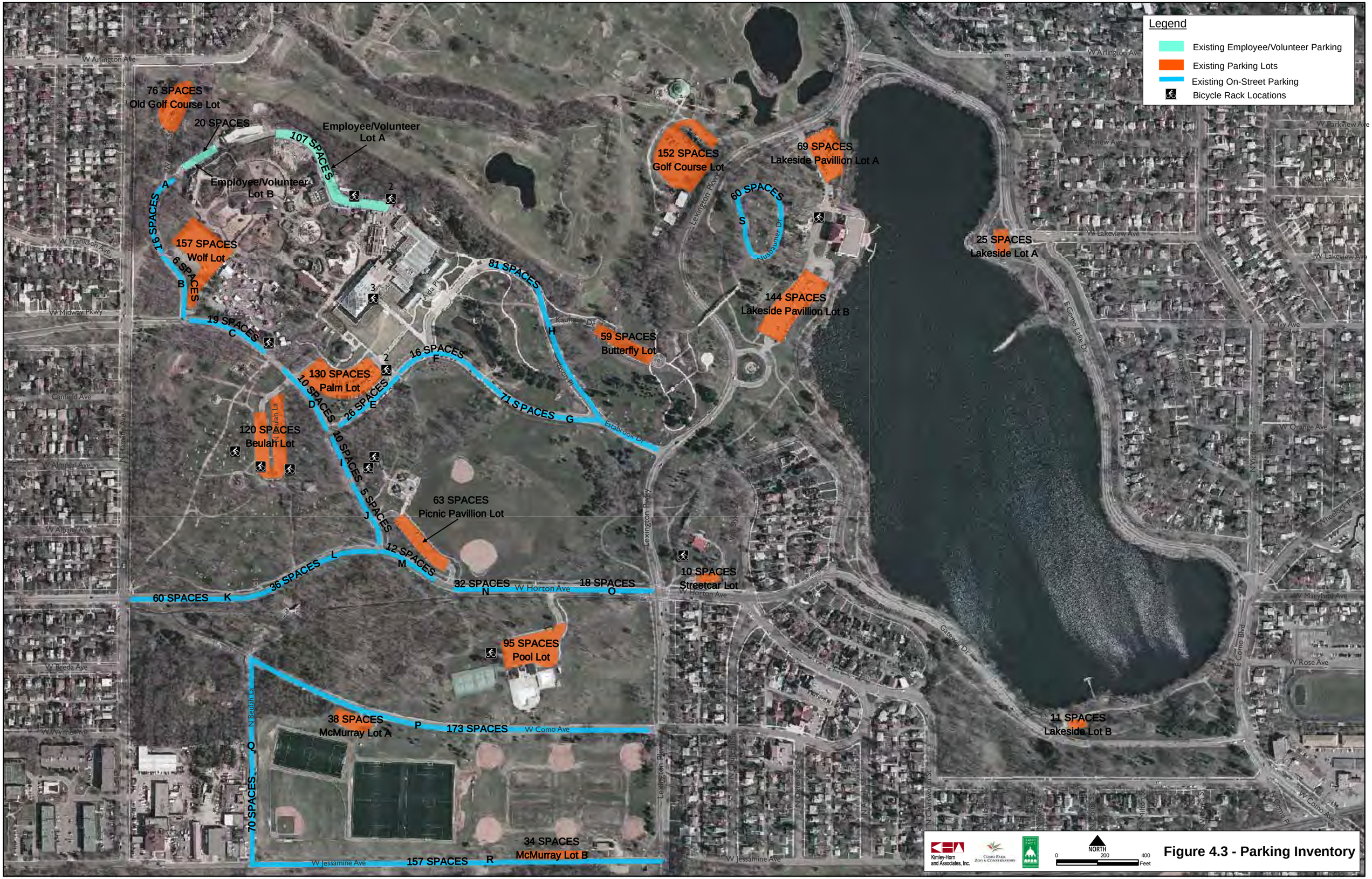
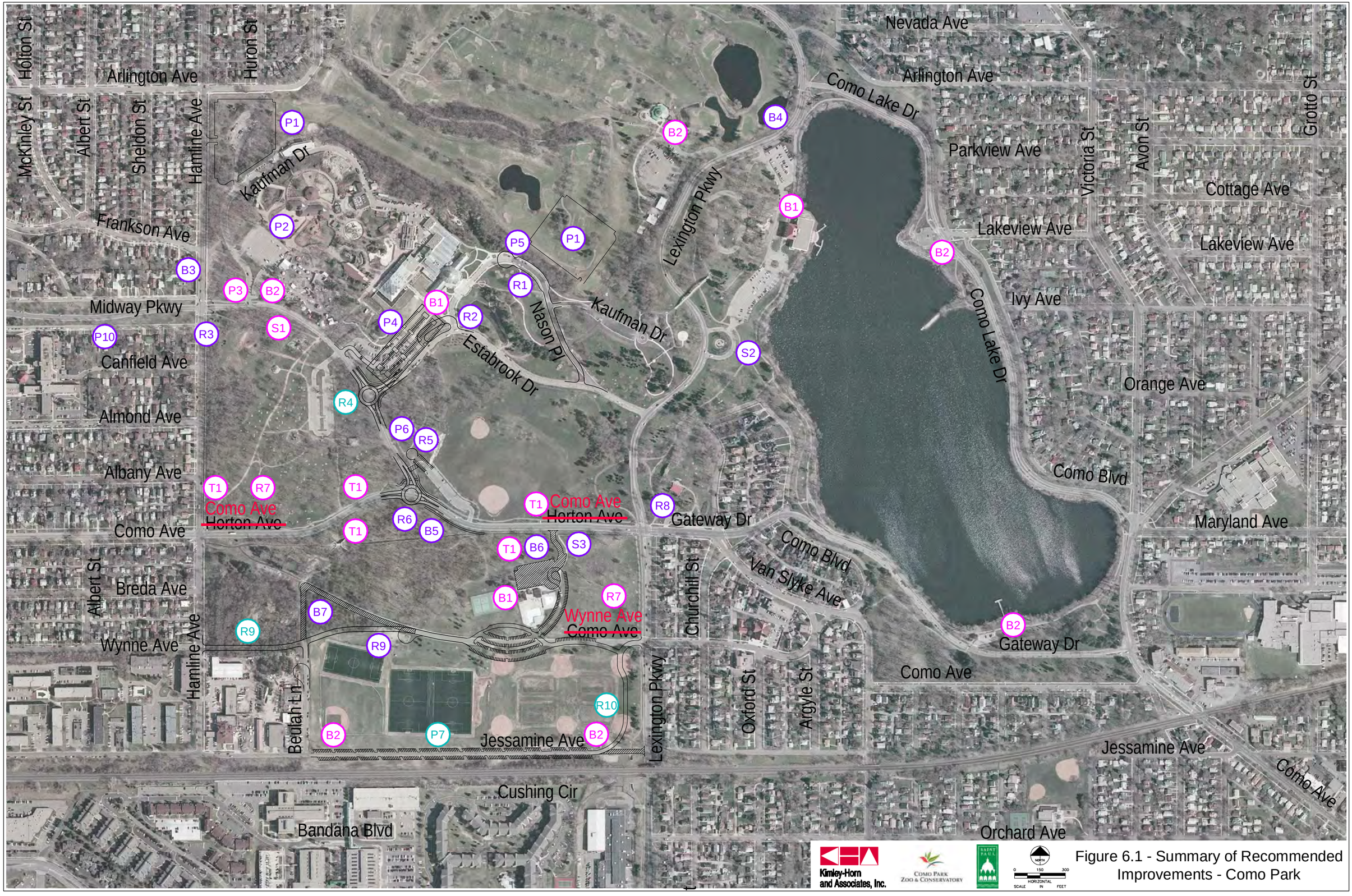

Legend
Existing Employee/Volunteer Parking
Existing Parking Lots
Existing On-Street Parking
Bicycle Rack Locations
76 SPACES
Old Golf Course Lot
20 SPACES
Employee/Volunteer
Lot A
Employee/Volunteer
Lot B
107 SPACES
A
16 SPACES
91
6 SPACES
B
157 SPACES
Wolf Lot
19 SPACES
C
81 SPACES
H
59 SPACES
Butterfly Lot
16 SPACES
F
71 S PACES
G
130 SPACES
Palm Lot
10 SPACES
D
26 SPACES
E
10 SPACES
I
5 SPACES
J
120 SPACES
Beulah Lot
63 SPACES
Picnic Pavillion Lot
12 SPACES
M
36 SPACES
L
60 SPACES
K
32 SPACES
N
18 SPACES
O
95 SPACES
Pool Lot
38 SPACES
McMurray Lot A
P
173 SPACES
W Como Ave
70 SPACES
Q
34 SPACES
McMurray Lot B
157 SPACES
R
152 SPACES
Golf Course Lot
69 SPACES
Lakeside Pavillion Lot A
60 SPACES
S
144 SPACES
Lakeside Pavillion Lot B
10 SPACES
Streetcar Lot
25 SPACES
Lakeside Lot A
11 SPACES
Lakeside Lot B
W Arlington Ave
W Frankson Ave
W Midway Pkwy
Canfield Ave
W Almond Ave
W Albany Ave
W Breda Ave
W Wyoming Ave
W Jessamine Ave
W Horton Ave
W Como Ave
W Lakeview Ave
W Ivy Ave
W Orange Ave
W Rose Ave
W Marylord Ave
W Parkview Ave
W Cottage Ave
N Hamline Ave
N Snelling Ave
N Beulah La
Aida Pl
Kaufman Dr
Nilson Pl
Estabrook Dr
Lexington Pkwy
Van Slyke St
Nusbaumer Dr
Gateway Dr
Central Pl
E Como Blvd
E Como Lake Dr
N Oxford St
N Chatsworth St
N Nicole St
N Milton St
N Victoria St
N Wheelock Pkwy
Kimley-Horn and Associates, Inc.
Como Park Zoo & Conservatory
NORTH
0
200
400
Feet
Figure 4.3 - Parking Inventory

Figure 4.4 - Existing Como Shuttle

Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

Figure 4.5 - Existing Pedestrian and Bicycle Network



Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

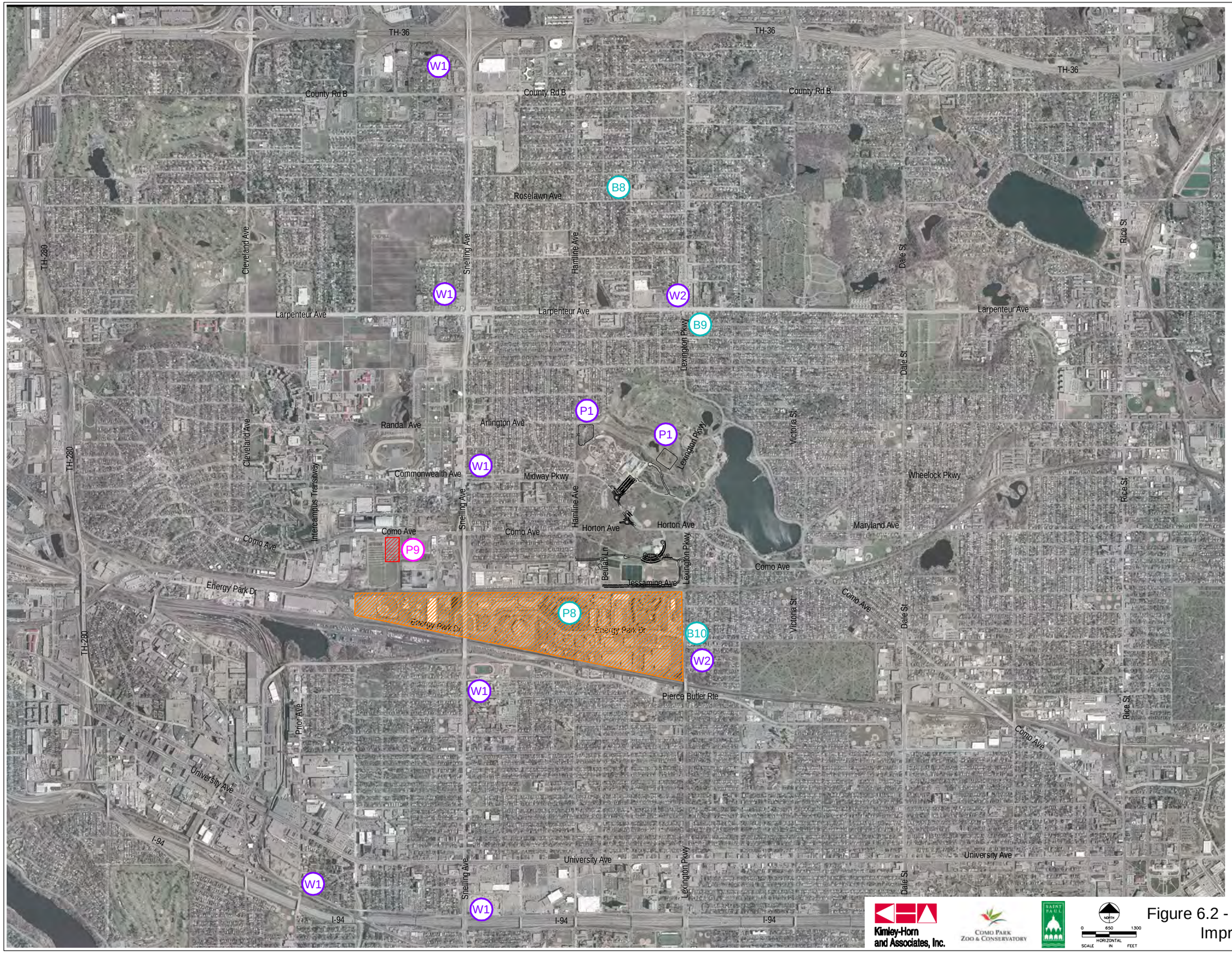
Saint Paul

North

0 150 300

Horizontal Scale in Feet

Figure 6.1 - Summary of Recommended Improvements - Como Park

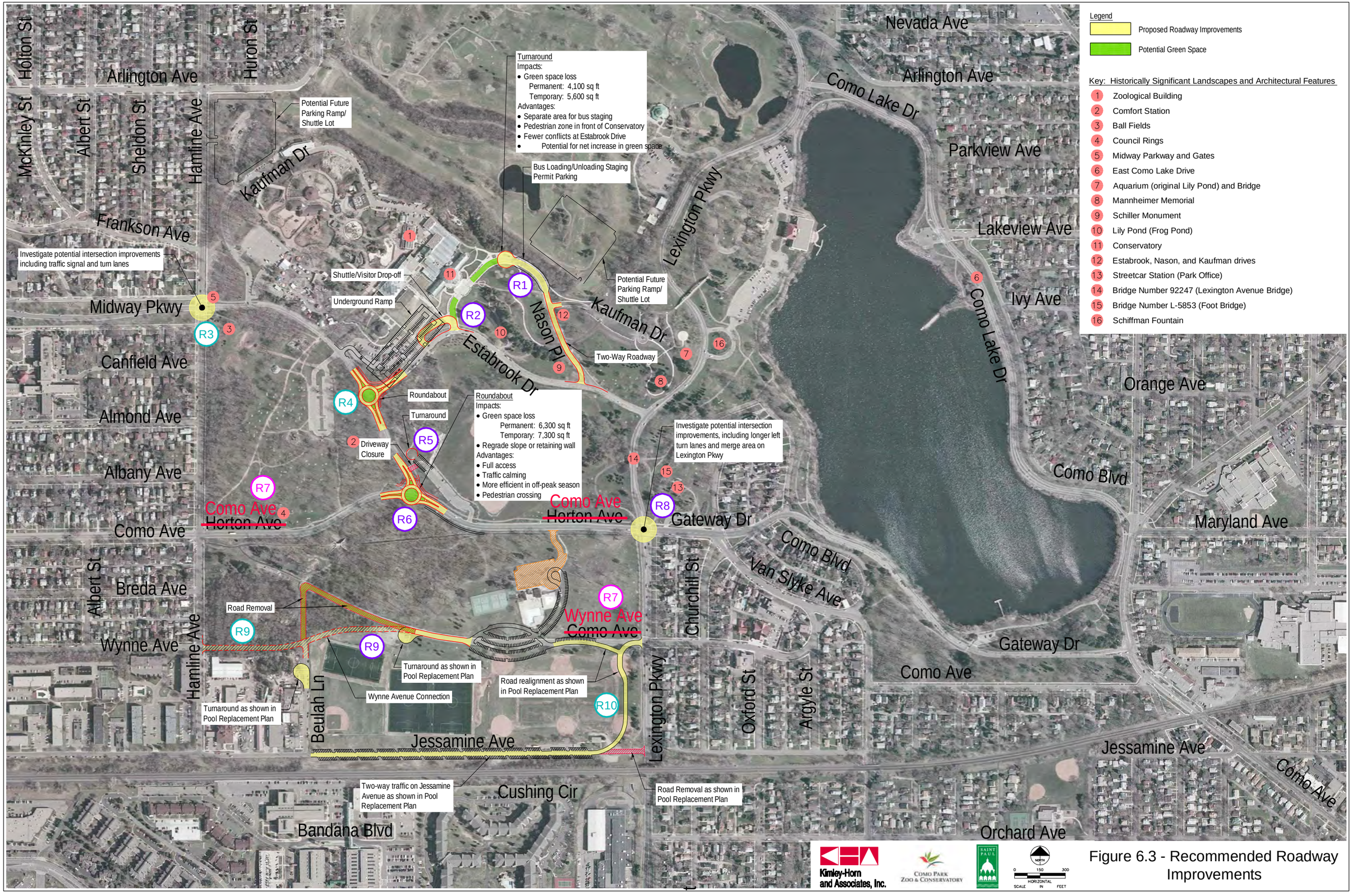


Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

0 650 1300
HORIZONTAL SCALE IN FEET

Figure 6.2 - Summary of Recommended Improvements - Regional



Kimley-Horn and Associates, Inc.

Figure 6.3 - Recommended Roadway Improvements

Shuttle Bus Surface Lot Option
(Up to 480 spaces)
Potential Future Parking Structure
Impacts:
- Green space
  Permanent: 131,500 sq ft
  Temporary: 50,000 sq ft
- Traffic through park

Advantages:
- Underused area of park
- Permanent shuttle lot within park

Shuttle Bus Surface Lot Option
(Up to 480 spaces)
Potential Future Parking Structure
Impacts:
- Golf course green space
  Permanent: 131,500 sq ft
  Temporary: 50,000 sq ft
- Traffic through park

Advantages:
- Proximity to zoo/conservatory
- Permanent shuttle lot within park

Bus Loading/Unloading (School Year)
19 Permit/Flexible Use Spaces (Summer)

Impact on parking
(Up to 80 spaces lost)

2-Level Underground
Parking Ramp
(Up to 400 spaces gained)

Impact on parking
(Up to15 spaces lost)

Parking Lot Expansion
(Up to 20 Spaces gained)

5 Minute Walk Radius
from Entrances

Impact on parking
(Up to 20 spaces gained)

Jessamine Ave Realignment
(Up to 100 spaces gained)
Impacts:
- Requires BNSF right-of-way

Note: Significant additional study and data are needed to determine the feasibility and total cost for any of the shuttle lots or parking ramp.

Legend

- Potential Paid Parking (5 min. walk radius)
- Residential Permit Parking Area, starting 2011
- Lot Full/Parking Availability Signs
- Zoo/Conservatory Entrances

Parking Fee Collection Options:
1. Honor Box
2. Individual parking meters
3. Multi-space parking meters
4. Ticket inbound and pay a cashier or machine outbound
5. Pay cashier or machine inbound and gate opens automatically outbound
6. Pay-on-foot

Fees can be hourly or flat rate

Key: Historically Significant Landscapes and Architectural Features

1. Zoological Building
2. Comfort Station
3. Ball Fields
4. Council Rings
5. Midway Parkway and Gates
6. East Como Lake Drive
7. Aquarium (original Lily Pond) and Bridge
8. Mannheimer Memorial
9. Schiller Monument
10. Lily Pond (Frog Pond)
11. Conservatory
12. Estabrook, Nason, and Kaufman drives
13. Streetcar Station (Park Office)
14. Bridge Number 92247 (Lexington Avenue Bridge)
15. Bridge Number L-5853 (Foot Bridge)
16. Schiffman Fountain

Kimley-Horn and Associates, Inc.

COMO PARK ZOO & CONSERVATORY

SAINT PAUL

NORTH

0 150 300
HORIZONTAL SCALE IN FEET

Figure 6.4 - Recommended Parking Improvements

K:\TMC_Civil\City\ST. PAUL\COMO PARK\CADD\EXHIBITS\IMPROVEMENTS\Como_Park_Parking_Improvements.dgn September 29, 2010 - 6:21pm

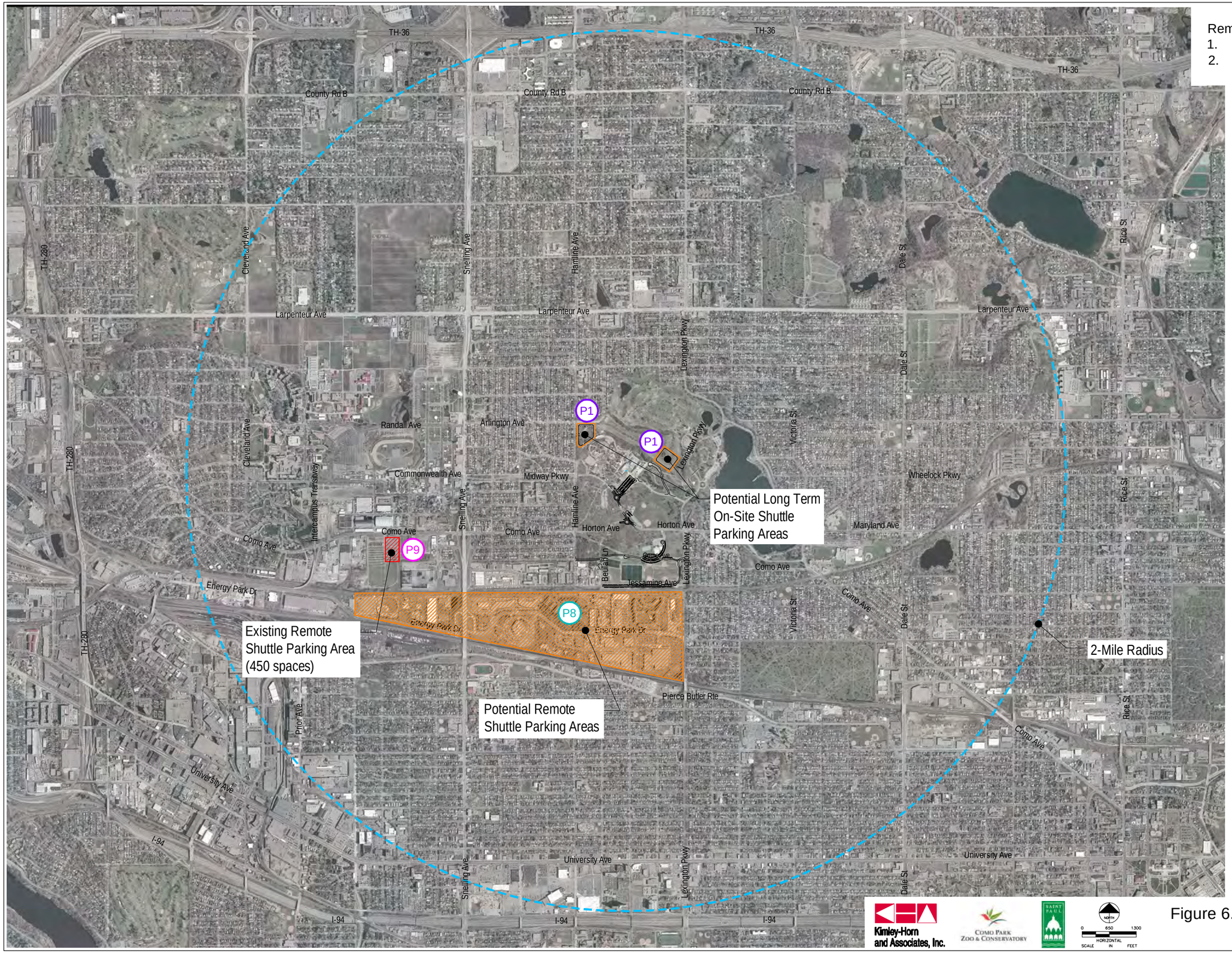


Figure 6.5 - Recommended Shuttle Parking Areas

Key: Historically Significant Landscapes and Architectural Features

1. Zoological Building
2. Comfort Station
3. Ball Fields
4. Council Rings
5. Midway Parkway and Gates
6. East Como Lake Drive (Not shown - beyond extents of map)
7. Aquarium (original Lily Pond) and Bridge
8. Mannheimer Memorial
9. Schiller Monument
10. Lily Pond (Frog Pond)
11. Conservatory
12. Estabrook, Nason, and Kaufman drives
13. Streetcar Station (Park Office)
14. Bridge Number 92247 (Lexington Avenue Bridge)
15. Bridge Number L-5853 (Foot Bridge)
16. Schiffman Fountain

Legend

- Existing Shuttle Route
- Proposed Shuttle/Circulator Route
- Long Term Shuttle/Circulator Route
- Existing Shuttle Stop
- Potential Shuttle Stop

Long Term Shuttle Lot Option

Long Term Shuttle Lot Option

Optional Extension
Advantages:
• Shuttle access to pavilion
Disadvantages:
• Increase shuttle travel time

Existing Shuttle Lot

To shuttle lot option on Energy Park Drive

Metro Transit Connection

Arlington Ave
Holton St
Huron St
Snelling Ave
Asbury St
Arona St
Simpson St
Pascal St
McKinley St
Albert St
Sheldon St
Hamline Ave
Frankson Ave
Bison Ave
Midway Pkwy
Commonwealth Ave
Canfield Ave
Almond Ave
Albany Ave
Como Ave
Kaufman Dr
Lexington Pkwy
Nason Pl
Estabrook Dr
Horton Ave
Gateway Dr
Oxford St
Como
Churchill St
Van Slyke Ave
Argyle St
Winston St
Arona St
Pascal St
Albert St
Breda Ave
Wynne Ave
Hamline Ave
Brewster St
Snelling Ave
Beulah Ln
Jessamine Ave
Lexington Pkwy
Cushing Cir
Energy Park Dr

Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

Saint Paul

NORTH
0 150 300
HORIZONTAL SCALE IN FEET

Figure 6.6 - Recommended Shuttle Improvements

K:\TRC_Civil\City\ST. PAUL\COMO PARK\CADD\EXHIBITS\IMPROVEMENTS\Como_Park_Shuttle_Improvements.dwg, September 28, 2010 - 7:13pm

Legend

- Existing Bus Route 3
- Proposed Bus Route 83
- Existing Bus Stop
- Existing Bus Shelter
- Proposed Bus Shelter

Key: Historically Significant Landscapes and Architectural Features

1. Zoological Building
2. Comfort Station
3. Ball Fields
4. Council Rings
5. Midway Parkway and Gates
6. East Como Lake Drive
7. Aquarium (original Lily Pond) and Bridge
8. Mannheimer Memorial
9. Schiller Monument
10. Lily Pond (Frog Pond)
11. Conservatory
12. Estabrook, Nason, and Kaufman drives
13. Streetcar Station (Park Office)
14. Bridge Number 92247 (Lexington Avenue Bridge)
15. Bridge Number L-5853 (Foot Bridge)
16. Schiffman Fountain

Future Route 83 stops to be determined by Metro Transit study

Shuttle Bus Connection

Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

Figure 6.7 - Recommended Transit Improvements

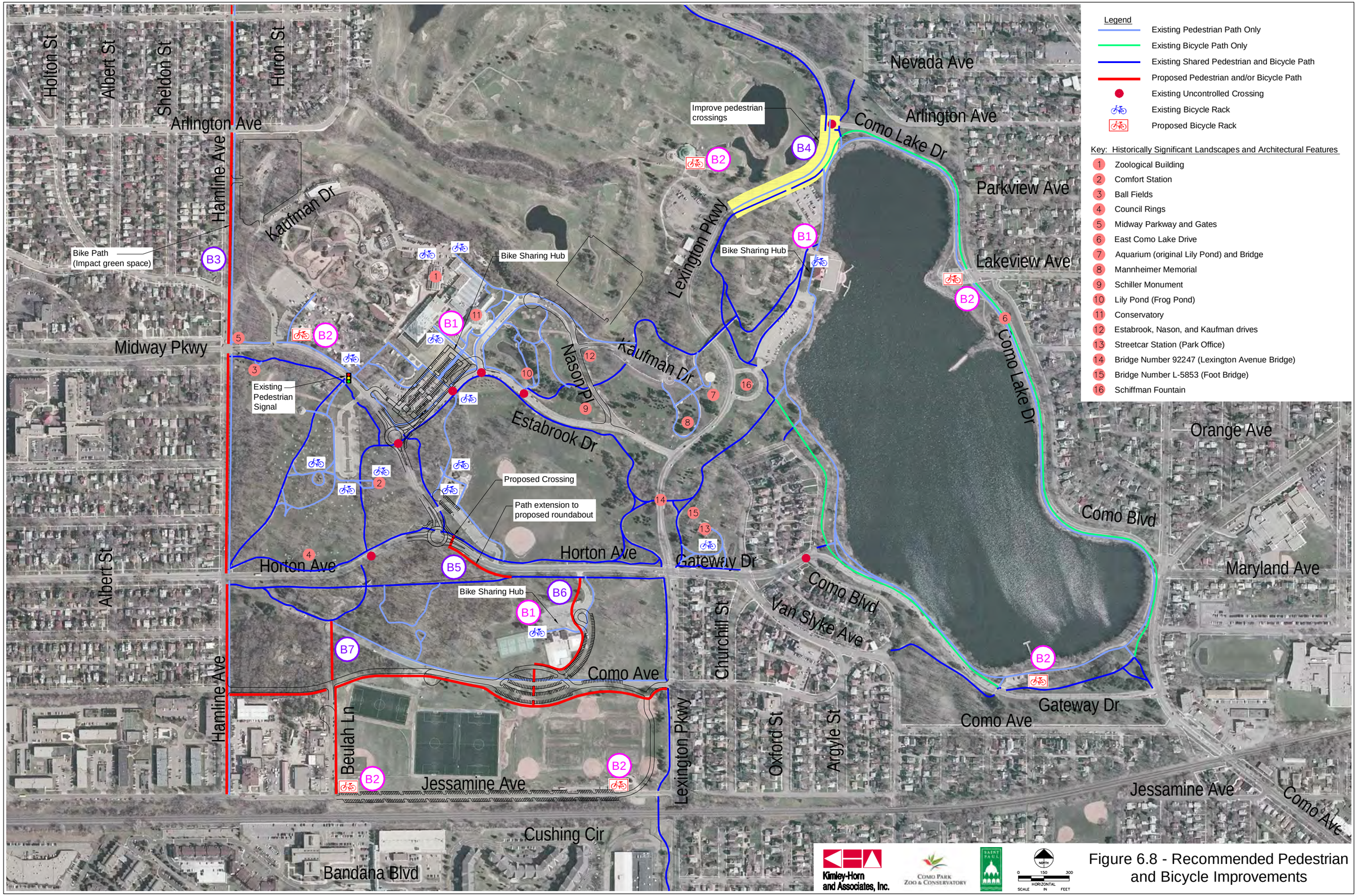


Figure 6.8 - Recommended Pedestrian and Bicycle Improvements

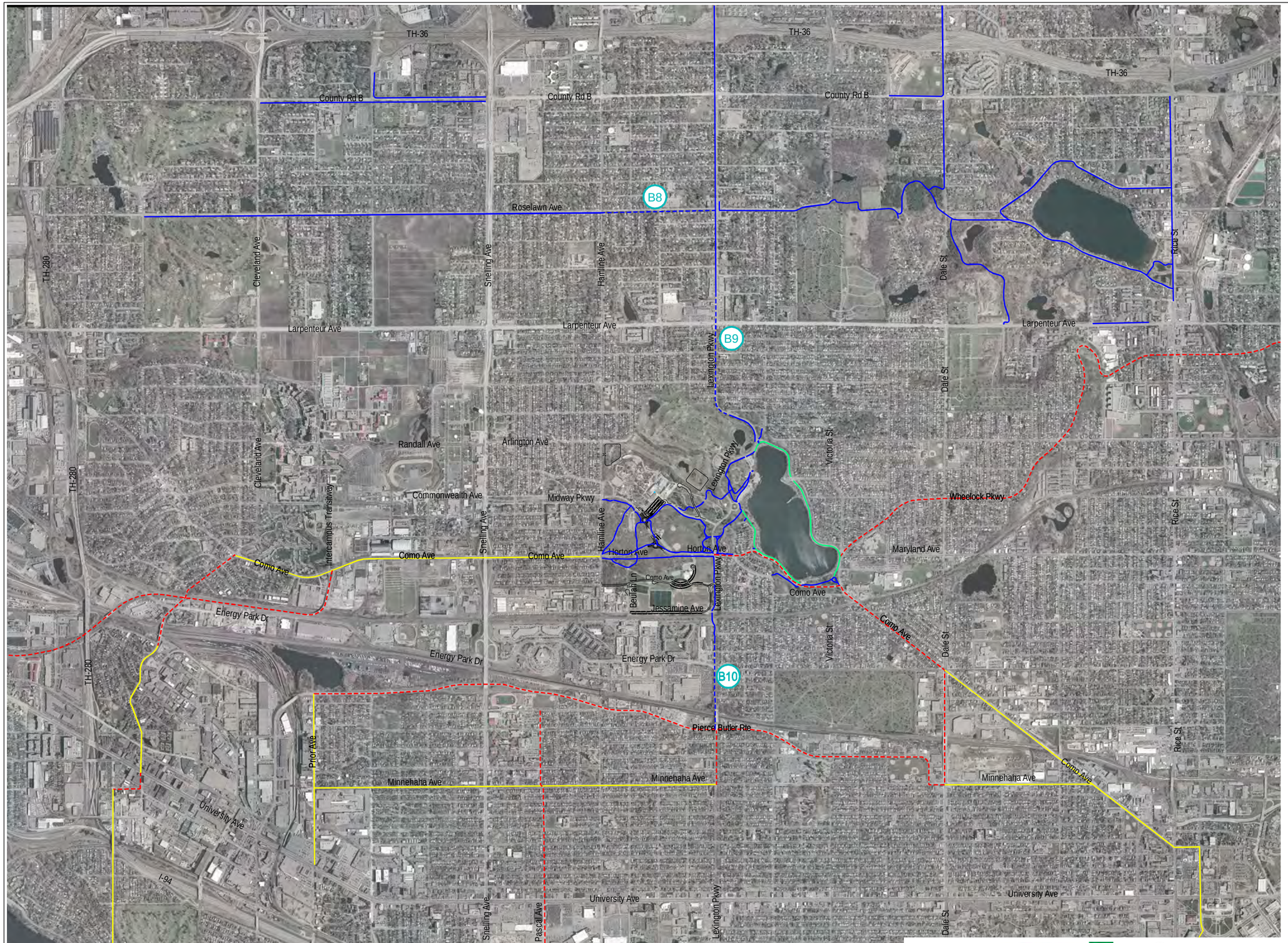


Figure 6.9 - Recommended Regional Bicycle Network Improvements

Legend

T1 Highway / Freeway Directional Signage

T2 Park Icon Directional Signage

Potential Long Term Remote Parking Areas

Existing Remote Parking Area (450)

Potential Remote Parking Areas

Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

Figure 6.10 - Recommended Freeway Signing

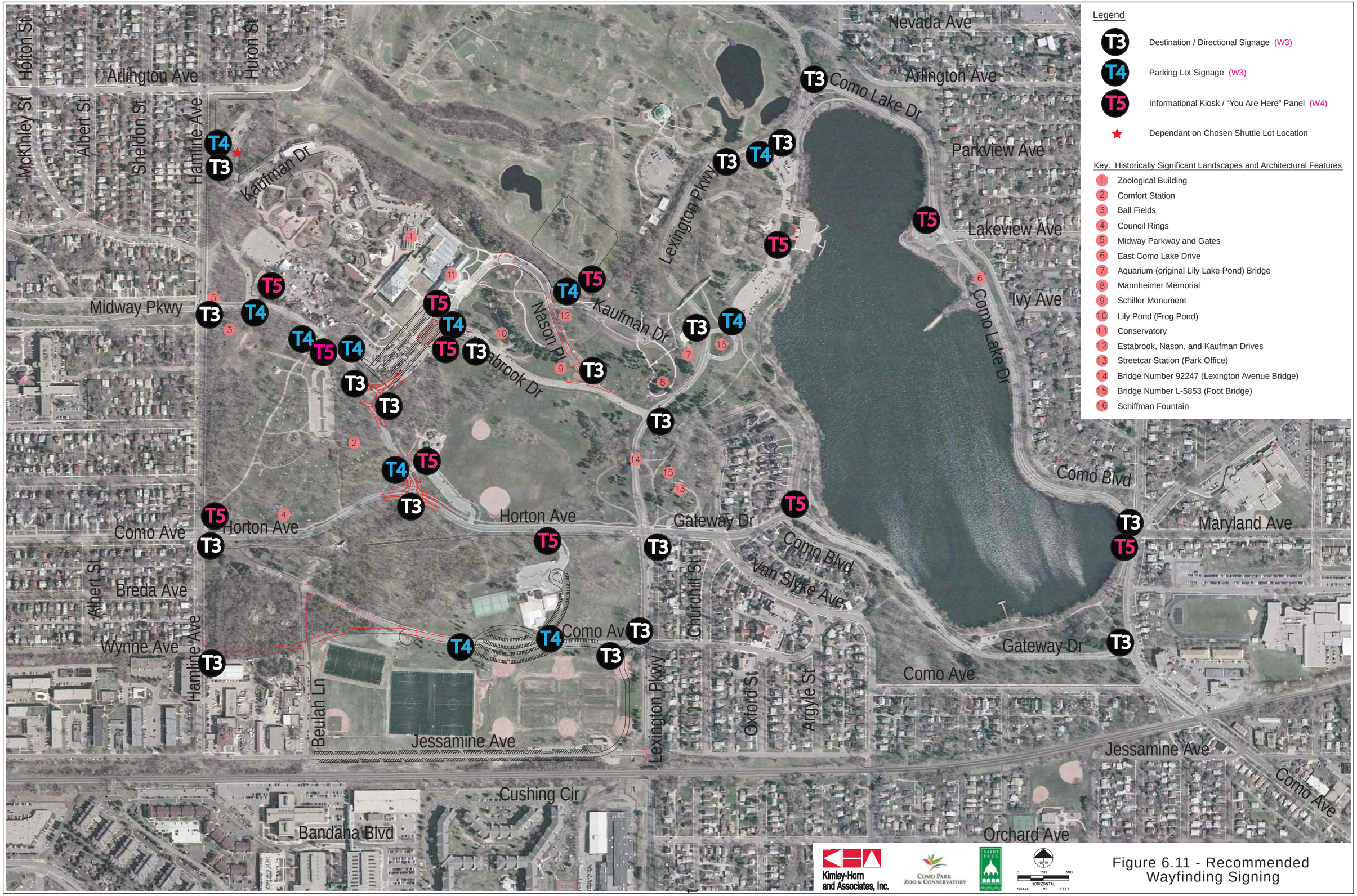


Figure 6.11 - Recommended Wayfinding Signing

Appendix A: Public Involvement Materials

PAC Priority Exercise Results

	ISSUE PRIORITIZATION EXERCISE - Feb 10, 2010 - PAC																
	Issue	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**#8**	**#9**	**#10**	**#11**	**#12**	**#13**	**#19**	**Total**	**Avg**
1	Parking Supply	1	2	1	2		1	2			4	1	1	1	1	17	1.55
2	Parking Demand	2	1				2		1	1	1		1	1	2	12	1.33
3	Traffic Congestion	2	1		2	1	1	1	1	1						10	1.25
4	Green Space		1	1		1				1		1			1	6	1.00
5	Historic Elements			1		1						1				3	1.00
6	Ped/Bike Facilities								1			1	1	1		4	1.00
7	Traffic Safety								1							1	1.00
8	Wayfinding/Signing			1			1		1	1						4	1.00
9	Transit Service			1	1	1		1		1		1	1	1	1	9	1.00
10	Cut-through Traffic							1								1	1.00
11	Arterial Routes					1							1	1		3	1.00
		5	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**70**	

Priority Exercise – Public Survey Tool

Como Park Transportation Improvement Plan - Survey

The City of St. Paul is conducting the following survey to receive public input regarding the transportation needs of Como Regional Park. In order to provide input to the City that will help guide the development of the Como Park Transportation Improvement Plan (TIP), please answer the following questions and return the survey to Michelle Furrer, Director/Campus Manager, Como Park Zoo and Conservatory, 1225 Estabrook Drive, Saint Paul, MN 55103 or send it by e-mail to comotip@gmail.com

1. **Are you a resident of St. Paul?** Yes___ No____

   1a. If yes, do you live in:

   ___District 6
   ___District 10
   ___Other District

   1b. Do you live within 6 blocks of Como Park? Yes___ No___

2. **What best describes your primary use of the park?**

___Recreational user (walk, bike, ball fields, aquatic center, etc)
___Visitor of attractions (Zoo, Conservatory, Como Town)
___Park partner or volunteer within the park (excludes park/city employees)
____I don't use the park specifically but have a general interest in the park

3. **On average, how frequently do you visit the park?**

___Once per week or more
___1-3 times per month
___Six or more times per year
___Less than six times per year
___I don't use the park

4. What area or location in the park do you visit or use most often? (i.e. Como Lake, Conservatory, aquatic center, picnic area, etc.) _____

[SEE NEXT PAGE]

3. What transportation-related issues are most important to you?

The following exercise helps the City to understand the transportation issues that are of greatest importance to Como Park users. Eleven transportation issues have been identified with the help of the Project Advisory Committee (PAC).

If you were given five stars to indicate your highest priority issues, how would you allocate your stars? Which issues are most important and need to be addressed? Please draw a line from your stars to the issue(s) that are most important to you. You may place all your stars on one issue, or spread them over several different issues.

#*	Issue	General Description
1	Parking supply within park	Concerns about the number of parking spaces in or near the park, and the location of parking spaces
2	Parking demand	Concerns about the number of people that drive to the park and need a parking space
3	Traffic congestion	Back-ups at intersections, congestion due to on-street parking maneuvers
4	Green space in the park	Protecting existing green space and natural areas
5	Historic elements	Protecting historic components of the park, such as the Conservatory
6	Pedestrian/bike facilities	Safety, roadway crossings, connectivity of pedestrian/bike facilities
7	Traffic safety	Crashes at intersections, speeding vehicles
8	Wayfinding/signing	How visitors are directed to the park from freeways and other major highways
9	Transit service	Bus routes in or near the park, bus frequency, bus stop locations, shuttle service operations
10	Cut-through traffic	Traffic using local streets or park roadways to short-cut through the neighborhood or the park, instead of using roadways outside the park
11	Arterial routes	Operations and connectivity of main traffic routes around the park, and related needs for improvements

**Numbers do not indicate ranking and are used only for data tracking purposes.*

4. Do you have any other general comments regarding issues and priorities for the Como Park TIP, or would you like to elaborate on the issues you selected? (attach additional pages as necessary)

Thank you for taking the time to complete this survey.

Priority Survey Results – April-July 2010

Online Surveys

RESIDENCY INFORMATION		
	Number of surveys	**Percent of surveys**
District 10	180	9.91
District 6	93	5.12
Resident/other	355	19.55
Non-resident	1,188	65.42
TOTAL	**1,816**	**100%**

29.9% live within 6 blocks

TYPE AND FREQUENCY OF USE			
Primary use of park	**Frequency of visits**	**Travel mode**	**Area most often visited***
77.48 % visitor of attractions 18.28% recreational 0.5% park partner/ volunteer 1.65% general interest 2.37% other	12.72% once per week+ 19.05% 1-3 times/month 26.27% >six times/year 41.85% < six times/year 0.11% don't use park	85.35% personal vehicle 0.55% bus 0.39% shuttle 0.11% hired bus 2.53% bicycle 10.9% walk 0.5% other	44.71% Zoo 17.29% Conservatory 17.07% Como Lake 8.7% Como Town 3.30% Picnic areas 2.59% Trails/paths 2.31% Other (athletic fields, playground, golf, gardens) 1.98% Ski area 1.82% All of it

ISSUES EXERCISE (1,503 responses)			
Issue	**Response Average**	**Response Total**	**Vote Count**
Parking supply	2.18	2,390	1097
Parking demand	1.44	1,070	744
Traffic congestion	1.21	597	495
Green space	1.42	943	664
Historic elements	1.37	947	691
Ped/bike facilities	1.27	592	467
Traffic safety	1.20	256	213
Wayfinding/signage	1.13	165	146
Transit service	1.20	201	167
Cut-through traffic	1.26	191	151
Arterial routes	1.21	130	107

Summary of Online Surveys:

- 65% non-St. Paul resident, 35% resident of St. Paul
- Most visit the park for attractions (77%)
- 42% visit 6 or less times/year; 26% 6-11 times/year
- Zoo is area most often visited, followed by Conservatory
- Most highly ranked issues:
    1) parking supply
    2) parking demand
    3) green space
    4) historic elements

Open House Surveys – April 14, 2010

RESIDENCY INFORMATION		
	Number of surveys	**Percent of surveys**
District 10	58	71.6
District 6	18	22.2
Resident/other	3	3.7
Non-resident	2	2.5
TOTAL	**81**	**100%**

93% live within 6 blocks

TYPE AND FREQUENCY OF USE			
Use of park	**Frequency of visits**	**Travel mode**	**Area most often visited**
77.7% recreational 13.6% visitor of attractions 7.4% park partner/ volunteer 1.2% other	76.5% once per week+ 12.3% 1-3 times/month 11.1% >six times/year 0%< six times/year	65.4% walk 21.0% bicycle 11.1% personal vehicle 1.2% other 0% bus/shuttle/hired bus	Como Lake/trails

ISSUES EXERCISE			
Issue	**Response Average**	**Response Total**	**Vote Count**
Parking supply	1.37	27	37
Parking demand	1.36	42	57
Traffic congestion	1.09	33	36
Green space	1.64	58	95
Historic elements	1.15	41	47
Ped/bike facilities	1.08	37	40
Traffic safety	1.07	14	15
Wayfinding/signage	1.00	8	8
Transit service	1.29	14	18
Cut-through traffic	1.18	17	20
Arterial routes	1.00	8	8

Summary of Open House Surveys:

- 97.5% resident of St. Paul
- Most visit the park for recreational purposes (77.7%)
- 76.5% visit once per week or more
- Como Lake/trails is the area most often visited
- Most highly ranked issues:
    1) green space
    2) parking supply
    3) parking demand
    4) transit service

Historic elements and ped/bike facilities also logged high number of responses, but were not weighted as highly.

On-Site Surveys – Zoo And Conservatory Grounds (April 24, 2010); Como Town (July 2010)

RESIDENCY INFORMATION		
	Number of surveys	**Percent of surveys**
District 10	27	7.1%
District 6	29	7.7%
Resident/other	66	17.4%
Non-resident	257	67.8%
TOTAL	**379**	**100%**

TYPE AND FREQUENCY OF USE			
Use of park	**Frequency of visits**	**Travel mode**	**Area most often visited**
49.1% visitor of attractions 40.6% recreational 7.7% park partner/ volunteer 1.3% don't use 1.3% other	9.2% once per week+ 17.9% 1-3 times/month 25.4% >six times/year 44.9%< six times/year 2.6% don't use	78.7% personal vehicle 8.7% bus 3.4% shuttle 0.3% hired bus 1.6% bicycle 6.1% walking 1.2% other	57.0% Zoo 21.5%Como Town 12.1%Conservatory 9.4% Como Lake

ISSUES EXERCISE – (368 responses)			
Issue	**Response Average**	**Response Total**	**Vote Count**
Parking supply	2.29	275	630
Parking demand	1.81	170	309
Traffic congestion	1.54	126	199
Green space	1.36	77	105
Historic elements	1.28	73	94
Ped/bike facilities	1.49	55	82
Traffic safety	1.78	110	196
Wayfinding/signage	1.32	47	62
Transit service	1.67	49	82
Cut-through traffic	1.26	41	52
Arterial routes	1.61	18	29

Summary of On-Site Surveys**:**

- 67.8% non-St. Paul resident, 32.2% resident of St. Paul
- 49.1% visit the park to visit attractions, closely followed by recreational uses at 40.6%
- 44.9% visit 6 or less times/year; 25.4% 6-11 times/year (70.3%)
- Zoo is area most often visited, followed by Como Town
- Most highly ranked issues:
    1) Parking supply
    2) Parking demand
    3) Traffic congestion
    4) Traffic safety

Transit service and arterial routes were also highly weighted. These areas didn't receive as many votes/total responses, but those who did respond in these categories tended to give them a high number of votes.

Improvement Recommendations Survey Results – August 2010

August 12 open house and online surveys collected through August 27, 2010.

TRANSIT/SHUTTLE For each item, select you like, don't like, undecided or you have not opinion. For items you don't like, share comments on why below.

Answer Options	Like	Don't Like	Undecided	No Opinion	Response Count
Place bus shelters at all bus stops along Horton Avenue in the Park	29	11	5	2	47
Combine Como Shuttle/Metro Transit stop and shelter at pool	38	4	4	4	50
Convert Como Shuttle to also serve as a circulator through the park (blue line)	33	5	8	1	47
Como Shuttle/circulator stop at Pool	36	6	2	3	47
Como Shuttle/circulator stop at Como Town	36	6	3	1	46
Como Shuttle/circulator stop at Lakeside Pavilion	35	8	3	2	47
Long-term Como Shuttle/circulator route (yellow line)	29	12	2	2	45
Short- and Mid-Term Como Shuttle Parking Options					
Keep Como Shuttle lot at State Fair on Como Avenue	28	5	6	3	42
Relocate Como Shuttle lot at State Fair to Snelling Avenue/Hoyt Avenue	20	13	6	4	43
Relocate Como Shuttle lot to Energy Park Drive	30	9	4	2	45
Mid- and Long-Term Como Shuttle Parking Options					
Como Shuttle surface lot Option 1 - Central Services Facility at Hamline Avenue/Jessamine Avenue (assumes relocation of Central Services to another site outside the park)	18	18	6	3	45
Como Shuttle surface lot Option 2 at Hamline Avenue/Arlington Street	4	34	5	5	47
Como Shuttle surface lot Option 3 in golf course space (assumes golf course is reduced to 9 holes or closed)	11	29	6	1	47
				answered question	51
				skipped question	8

Kimley-Horn and Associates, Inc.

PARKING IMPROVEMENTS For each item, select you like, don't like, undecided or you have not opinion. For items you don't like, share comments on why below.

Answer Options	Like	Don't Like	Undecided	No Opinion	Response Count
Implementation of paid parking near the Zoo/Conservatory	33	21	2	0	56
Lot Full/Parking Availability electronic signing at locations around the Park	29	14	11	1	55
Short- and Mid-Term Como Shuttle Parking Options					
Keep Como Shuttle lot at State Fair on Como Avenue	30	11	7	3	51
Relocate Como Shuttle lot at State Fair to Snelling Avenue/Hoyt Avenue	19	19	9	4	51
Relocate Como Shuttle lot to Energy Park Drive	29	14	9	2	54
Mid- and Long-Term Como Shuttle Parking Options					
Como Shuttle surface lot Option 1 - Central Services Facility at Hamline Avenue/Jessamine Avenue (assumes relocation of Central Services)	16	22	9	4	51
Como Shuttle surface lot Option 2 at Hamline Avenue/Arlington Street	13	31	7	4	52
Como Shuttle surface lot Option 3 in golf course space (assumes golf course is reduced to 9 holes or closed)	15	33	3	1	52
Bus loading/unloading area and permit parking near Conservatory	32	9	9	1	51
Underground parking ramp in front of Visitor Center	33	13	7	0	52
Add parking spaces in parking lot south of Midway Pkwy	21	23	7	3	54
Add parking spaces in lot near Group Picnic Pavilion	24	23	5	2	53
Add parking spaces along Jessamine Avenue (assumes purchase of BNSF right-of-way)	37	10	4	1	52
Permit parking in the neighborhood west of Hamline Ave	28	20	6	0	54
				answered question	57
				skipped question	2

SIGNAGE AND WAYFINDING For each item, select you like, don't like, undecided or you have not opinion. For items you don't like, share comments on why below.

Answer Options	Like	Dislike	Undecided	No Opinion	Response Count
Tiered system of wayfinding signing outside and inside the Park	33	2	3	0	38
Freeway signing to the Park from Snelling Avenue and Lexington Parkway	26	6	2	2	36
Destination/Directional signage (see examples)	27	3	5	3	38
Parking lot naming and signage	30	5	1	3	39
Informational Kiosks for pedestrian/bicycle wayfinding (see examples)	30	4	1	1	36
				answered question	39
				skipped question	20

PEDESTRIAN & BIKE PATHS For each item, select you like, don't like, undecided or you have not opinion. For items you don't like, share comments on why below.

Answer Options	Like	Don't Like	Undecided	No Opinion	Response Count
Bike path or bike lane on Hamline Avenue	37	5	3	0	45
Provide bike parking at key destinations that don't currently have bike racks (McMurray Fields, fishing pier, etc)	43	2	1	1	47
Pedestrian crossing at Horton Avenue/Midway Parkway roundabout	35	5	5	1	46
Path between Horton Avenue and Como Avenue through Pool area	32	3	4	5	44
Bike sharing hubs at key attractions in the Park (Lakeside Pavilion, Pool, Visitor Center)	38	2	4	1	45
Improved pedestrian crossing along Lexington Parkway near Como Lake Drive, Lakeside Pavilion, and Golf Course	44	2	0	0	46
Path along potential extension of Wynne Ave	24	5	9	6	44
Path between Beulah Avenue and existing trail south of Horton Avenue	27	5	9	3	44
Path along Beulah Avenue near McMurray Fields	29	5	8	3	45
				answered question	47
				skipped question	12

ROADWAY IMPROVEMENTS For each item, select you like, don't like, undecided or you have not opinion. For items you don't like, share comments on why below.

Answer Options	Like	Dislike	Undecided	No Opionion	Response Count
Turnaround, bus loading/unloading area near Conservatory	22	14	7	1	44
Conversion of Nason Place from one-way to two-way traffic and elimination of on-street parking	16	17	10	1	44
Close area in front of Conservatory to vehicle traffic and make it for pedestrians only	26	13	5	2	46
Investigate potential intersection improvements at Lexington Parkway/Horton Avenue/Gateway Drive	32	5	6	1	44
Provide a drop-off area and turnaround in front of the Visitor Center	29	10	4	2	45
Rename Horton Avenue to Como Avenue	38	5	3	1	47
Connect Wynne Avenue to Como Avenue and rename Como Avenue to Wynne Avenue	27	12	5	1	45
Roadway realignment and two-way traffic on Jessamine Avenue	23	10	6	3	42
Roundabout at Horton Avenue/Midway Parkway	20	16	7	0	43
Driveway closure and turnaround at Picnic Pavilion	20	11	8	3	42
Roundabout at Estabrook Drive/Midway Parkway	15	18	9	1	43
Investigate potential intersection improvements at Hamline Avenue/Midway Parkway	31	9	3	1	44
				answered question	48
				skipped question	11

Appendix B: Resource List - Como Park Documents and Studies

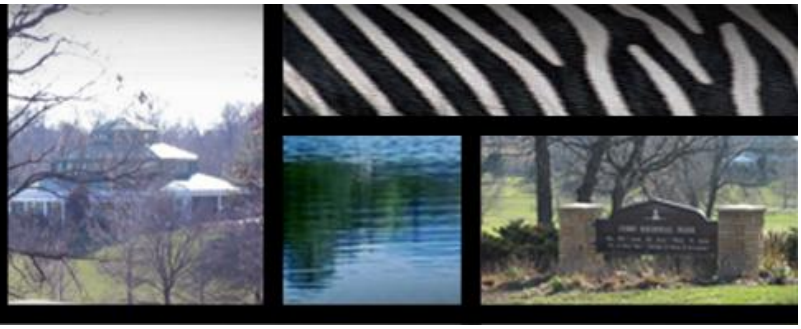
1. **Como Zoo Master Plan, Robert M Lambert Inc, Architects (1976)**
   Estimated peak attendance = 12,000 to 14,000 visitors per day
   Estimated yearly attendance = 720,000

   a. Realign Midway Parkway to connect with Como Avenue and Beulah Lane - *partially implemented (Midway Parkway realigned, but connects to Horton Avenue instead)*
   b. Remove portions of Beulah Lane, Como Avenue, and Gateway Drive – *implemented*
   c. Realign Lexington Parkway through the park - *implemented*
   d. Locate a restaurant near the front entrance of the zoo that would remain open after zoo hours – *not implemented (note: restaurant was constructed at this location, but is open only during zoo hours)*
   e. Remove Estabrook Drive, Nason Place, Aida Place, and Kaufman Drive and portions of Horton Avenue – *not implemented*
   f. Realign W Como Avenue to intersect Lexington Parkway at Horton Avenue intersection – *not implemented*
   g. Relocate amusements area across Midway Parkway, connected by a pedestrian overpass – *not implemented*

2. **Como Zoo Master Plan, Rafferty Rafferty Mikutowski and Associates (1978)**
   Estimated peak attendance = 12,000 visitors per day
   Estimated zoo capacity = 15,000 visitors per day or 970,500 visitors per year
   Estimated maximum parking required = 1,700 vehicles

   a. Eliminate Kaufman Drive as a through street and limit use to service only - *implemented*
   b. Control access to the zoo grounds through a single entrance and exit – *partially implemented (six access points existed in 1978, two access points currently exist)*
   c. Construct a Resource Center adjacent to the entry plaza for the zoo – *implemented (note: final design is slightly different than described in the plan)*
   d. Renovate Primates Exhibit, relocate Large Cat exhibit, renovate Zoo Building for other uses - *implemented*
   e. Relocate Bear Exhibit, locate Seal Show in the center of the zoo – *not implemented*
   f. Provide for 1,000 vehicles immediately adjacent to the zoo (accommodate parking demand 98% of the time) – *not implemented*

3. **Como Park Shuttle and Remote Parking Study, Ralph Burke Associates (1980)**
   Assumed average speed of trolley = 9 mph
   Assumed 4 stops: McMurray Field, picnic grounds, Zoo/Conservatory, and Lakeside

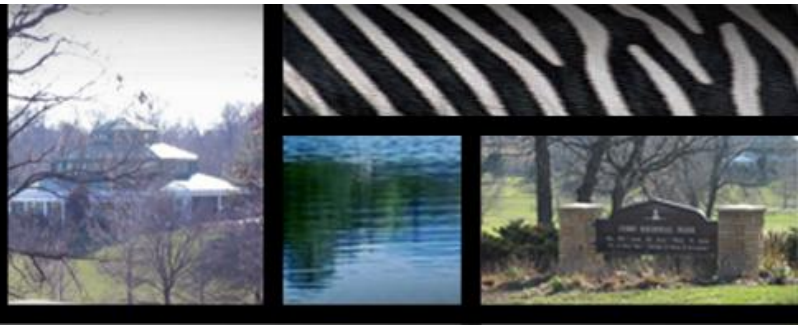


Recommended two axle, four-wheeled trolleys with 27 seated + 17 standing passengers
Trolley frequency at each stop = 20 to 45 minutes, depending on number of vehicles operating

4. **Traffic Planning for Como Park, Ralph Burke Associates (1981)**
   a. Convert East Como Lake Drive and West Como Lake Drive from two-way to one-way roadways – *partially implemented (E Como Lake Drive only)*
   b. Redesign Maryland Avenue/Wheelock Parkway/E Como Boulevard/E Como Lake Drive/Victoria Street intersection – *implemented (different design than in the report)*
   c. Realign Lexington Parkway – *implemented*
   d. Abandon Como Avenue between Hamline Avenue and the entrance to the parking area north of McMurray Fields – *implemented*
   e. Close Kaufman Drive east of the Conservatory and construct a turnaround – partially *implemented (Kaufman Drive eliminated as a through roadway)*
   f. Remove Nason Place and Aida Place in front of the Conservatory – *not implemented*
   g. Realign Midway Parkway to join the present Estabrook Drive and combine the two picnic areas into one continuous space adjacent to the central grassy fields – *not implemented*
   h. Construct pedestrian underpasses of Midway Parkway near Beulah Lane and near the frog pond – *not implemented*

5. **Como Conservatory Master Plan, Division of Parks and Recreation with the Como Conservatory Planning Advisory Committee (1981)**

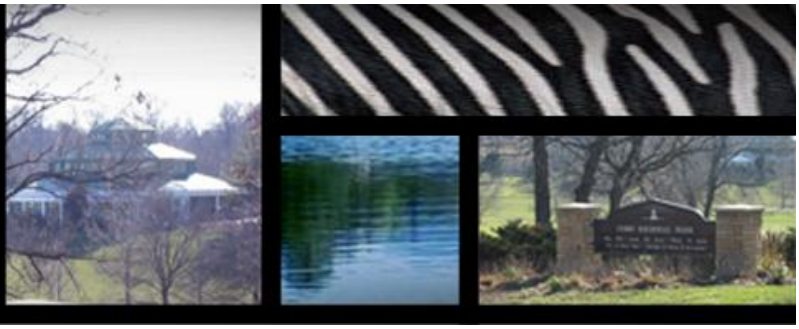
   a. Construct a Como Park Resource Center as a common entrance to the Zoo and Conservatory – *implemented (note: final design is slightly different than described in the plan)*
   b. Relocate staff parking for the Zoo and Conservatory to an existing parking bay along Kaufman Drive – *implemented*
   c. Construct a major turn-around in front of the Conservatory – *not implemented*
   d. Remove all of Aida Place and Kaufman Drive east of the Conservatory – *not implemented*



6. **Como Park Master Plan, St. Paul Parks and Recreation Department (1984)**
   Estimated peak attendance = 26,000 visitors per day

   a. Reroute Lexington Parkway - *implemented*
   b. Convert E Como Lake Drive and Gateway Drive/W Como Lake Drive to one-way streets – *implemented on E Como Lake Drive only*
   c. Eliminate portions of Como Lake Drive to create additional space between roadway and lake shore - *implemented*
   d. Eliminate Beulah Lane between Midway Parkway and Horton Avenue and between Como Avenue and Horton Avenue– *implemented*
   e. Eliminate Como Avenue between Beulah Lane and Horton Avenue – *implemented*
   f. Reroute and eliminate all of Kaufman Drive, remove Nason Place, as well as portions of Estabrook Drive – *partially implemented (portions of Kaufman Drive and Nason Place still exist)*
   g. Create new parking lots on Horton Avenue and Beulah Lane – *implemented*
   h. Create two parking lots for the Lakeside Pavilion – *implemented*
   i. Construct pedestrian overpass of Lexington Parkway – *implemented*
   j. Construct 7.8 miles of pedestrian and bicycle pathways – *partially implemented*
   k. Build an internal park trolley system with stops at McMurrary Fields, Picnic Area Zoo/Conservatory, and Lakeside Pavilion – *partially implemented*
   l. Remove on-street parking from the park roadways – *not implemented*
   m. Construct a two-level, 400-vehicle parking deck at the current amusement area, along with a 50-vehicle short term parking lot – *not implemented*
   n. Eliminate Midway Parkway between Beluah Lane and Horton Avenue – *not implemented*
   o. Realign Jessamine Avenue – *not implemented*
   p. Acquire 2.87 acres of land from BNSF and construct parking lots adjacent to McMurray Fields – *not implemented*
   q. Construct pedestrian/bike underpasses of Midway Parkway near Beulah Lane and near the frog pond – *not implemented*

7. **Como Park Natural Resource Inventory, St. Paul Parks and Recreation Department (1995)**
   No recommendations related to transportation or parking.
   Document will be revisited if infrastructure improvements are recommended as part of current study.

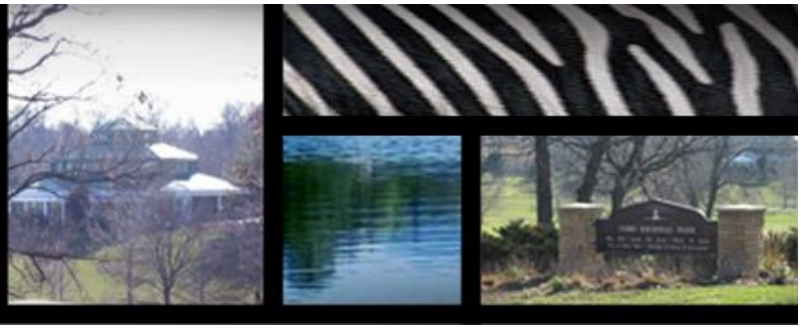


8. **Como Park Master Plan Completion (1996)** *note: no authorship is listed on the document*
   Recommends against relocating amusements.
   Recommends against changes to McMurray Fields and Tennis Courts.

   a. Maximize use of on-street parking within the park – *implemented*
   b. Remove portion of Kaufman Drive and construct 65-space parking lot – *implemented (59-space parking lot)*
   c. Construct a pedestrian overpass of Lexington Parkway - *implemented*
   d. Remove Beulah Lane between Midway Parkway and Horton Avenue and construct a 120-vehicle parking lot – *implemented*
   e. Eliminate parking near intersections on Horton Ave and Midway Pkwy – *partially implemented (landscaped medians not constructed)*
   f. Connect Midway Parkway to Estabrook Drive to reestablish internal circulation – *implemented*
   g. Convert Estabrook Drive to a two-way roadway - *implemented*
   h. Construct 250-person Picnic Pavilion – *implemented*
   i. Build 70-space parking lot next to new Picnic Pavilion – *implemented*
   j. Require large groups at Picnic Pavilion provide shuttle service and remote parking – *implemented*
   k. Construct two family picnic shelters – *partially implemented (one constructed)*
   l. Construct a 400-vehicle underground parking structure near the Conservatory with 100-space surface lot and formal gardens above – *not implemented*
   m. Reduce size of Wolf lot from 123 spaces to 38 spaces - *not implemented*
   n. Provide bike lanes on Horton Avenue – *not implemented (note: bike trail was constructed on south side of Horton Avenue between Lexington Parkway and Hamline Avenue)*

9. **Como Community District Council Position Paper (1996)**
   No specific recommendations related to transportation or parking.
   Emphasized preservation and fiscal responsibility.
   Recommended balancing needs of park with needs of surrounding community.

10. **Como Park Master Plan Implementation Ad Hoc Committee Minority Report (1996)**
    Recommends against relocating amusements.
    Recommends against reducing the size of the Wolf Lot.
    Recommends against removal of Overflow Lot (old golf course lot).



Recommends against removal of on-street parking.
Recommends against construction of parking ramp.
Recommends against construction of Large Group Pavilion.

a. Remove a portion of Kaufman Drive at Lexington Parkway and construct a parking lot in the vacated area – *implemented*
b. Construct a pedestrian overpass of Midway Parkway – *not implemented*
c. Provide pedestrian access from Overflow Lot to Zoo/Conservatory via Kaufman Drive – *not implemented*
d. Increase size of Palm Lot to 250 spaces – *not implemented*
e. Operate a shuttle to the underutilized parking on Como Avenue and Beulah Lane - *not implemented*
f. Construct a seasonal pedestrian overpass of the BNSF Railroad – *not implemented*
g. Construct a family (100-person) picnic pavilion on Beulah Lane – *not implemented*

11. Como Park Parking Study, Benshoof and Associates, Inc. (1997)

Recommended against trolley system, based on operating costs.
Recommended against realignment of Jessamine Ave.

a. Provide weekday bus parking on Estabrook Drive and weekend bus parking on Horton Avenue and Como Avenue – *partially implemented*
b. Locate employee and volunteer parking north of the zoo – *implemented*
c. Provide on-street parking on the north side of Midway Parkway between Kaufman Drive and the pedestrian crossing – *implemented*
d. Remove portion of Kaufman Drive and construct a 65-space lot – *implemented(59-space parking lot)*
e. Provide on-street parking on Beulah Lane between Como Avenue and Jessamine Avenue – *implemented*
f. Provide pedestrian/bike connections on removed Beulah Lane – *implemented*
g. Reduce size of Wolf lot from 123 spaces to 38 spaces - *not implemented*
h. Construct a 400-spaced parking ramp - *not implemented*
i. Eliminate 68-vehicle parking lot (former golf course lot) – *not implemented*
j. Provide angled parking on Como Avenue between Lexington Parkway and Beulah Lane – *not implemented*
k. Modify or remove Midway Parkway to serve Como Park access and circulation, but not through traffic - *not implemented*

l. Acquire right-of-way from BNSF Railroad and construct 173 spaces between Jessamine Avenue and the railway - *not implemented*

m. Construct a 130-space parking lot on Como Avenue east of Beulah Lane - *not implemented*

12. The City Itself a Work of Art: A Historical Evaluation of Como Park, The 106 Group Ltd (1997)

Landscapes and features determined to be historically significant include:

- Zoological Building – Zoo
- West Picnic Grounds
  - Comfort Station
  - Ball Fields
  - Council Rings
  - Midway Parkway and Gates
- East Lakefront Area
  - East Como Lake Drive
- Early Recreational Area – Floral Display
  - Aquarium (Original Lily Pond) and Bridge
  - Mannheimer Memorial
  - Schiller monument
  - Lily Pond (Frog Pond)
  - Conservatory
  - Estabrook, Nason, and Kaufman drives
- Early Recreational Area – Active Recreations
- Streetcar Entrance Area
  - Streetcar Station
  - Bridge # 92247 (Lexington Avenue Bridge)
  - Bridge # L-5853 (Foot Bridge)
  - Schiffman Fountain
- East Picnic Grounds

13. Creating a Campus A Framework for the Como Park Campus, Close Landscape Architecture and Hokanson/Lunning Associates (1998)

a. Create a central plaza pedestrian mall at the main entrance to the Zoo/Conservatory – *partially implemented (relationship of plaza and Visitor Center is different than recommended in the framework)*

b. Construct an Education Resource Center – *implemented*
c. Realign Kaufman Drive service entrance and provide gated access – *implemented*
d. Provide on-street permit/assigned parking along service corridor - *implemented*
e. Improve, maintain and protect existing wooded buffer areas– *implemented*
f. Construct a bus drop-off at the west side of the main Zoo/Conservatory parking lot – *not implemented*
g. Recreate Horticultural Display at Conservatory – *not implemented?*

14. Como Park Parking Analysis, St. Paul Parks and Recreation Department (1999)

Recommend that parking supply accommodate 100% of secondary peak use (783 vehicles) rather than 90% of peak use (1,160 vehicles).
Recommended against construction of parking deck.

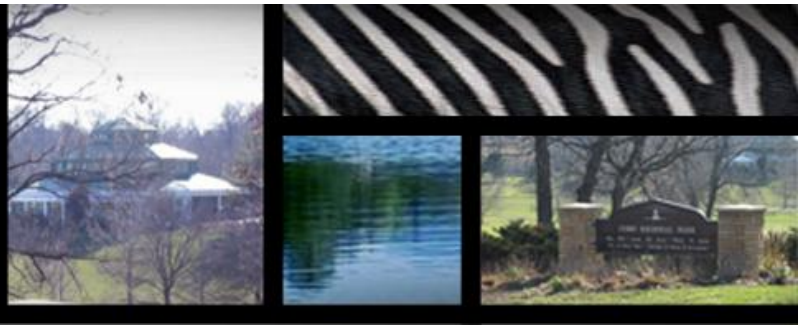
a. Implement remote parking and shuttle system – *implemented*
b. Eliminate parking on Kaufman Drive (-44 spaces) – *implemented*
c. Construct smaller Conservatory lot (-78 spaces) - *implemented*
d. Eliminate old golf course parking lot (-68 spaces) – *not implemented*
e. Eliminate Wolf lot (-123 spaces) – *not implemented*

15. The Como Lake Strategic Management Plan, Capitol Region Watershed District (2002)

No recommendations related to transportation or parking.

16. Creating a Campus: A Concept Plan for the Como Zoo and Conservatory, Close Landscape Architecture (2003)

a. Construct a 180-vehicle parking lot on the Kaufman Dr alignment – *partially implemented (59-vehicle lot constructed)*
b. Create one primary vehicular entrance into the service corridor with a circular turnaround at the end of the alignment and eliminate public use of the roadway – *implemented*
c. Expand Polar Bear exhibit – *implemented*
d. Construct a new building in the existing Picnic Rental Space – *implemented*
e. Implement shuttle/transit system – *implemented*
f. Reconstruct Service Corridor to eliminate public parking – *implemented*
g. Modify Nason Place to provide access to new parking lot –*implemented*
h. Eliminate 68-vehicle parking lot (former golf course lot) – *implemented*
i. Construct new African Hoofed Stock building in current location of Wolf Lot – *not implemented*



j. Expand Aquatic Animals exhibit – *not implemented*
k. Expand Primates exhibit – *not implemented*
l. Construct new maintenance building – *not implemented*
m. Determine feasibility of outdoor skating rink in Amusements area – *not implemented*
n. Convert Aida Place to a pedestrian/service promenade in front of the Conservatory and a vehicle turn around east of the Conservatory – *not implemented*
o. Install electronic signs on Lexington Parkway and Midway Parkway to display available parking information – *not implemented*

17. 2030 Regional Parks Policy Plan: 2006-2011 Metropolitan Regional Parks Capital Improvement Program, Metropolitan Council (2005)

a. Rebuild 3.3 miles of existing trail and build 2 miles of new trail – *implemented*
b. Reconstruct Estabrook Drive and construct a parking lot on former Kaufman Drive – *implemented*
c. Study replacement of existing pool facility – *implemented*

18. Impervious Surface Alterations in Como Park (2006)

Changes in impervious surface area within Como Regional Park since the adoption of the Master Plan:
Removed – 660,721 square feet
Added – 475,597 square feet
Net Reduction in Impervious Surface = 185,124 square feet = 4.25 acres

19. Como Park Zoo and Conservatory Visitor Survey, Leisure Vision (2007)

648 visitors surveyed in August-September 2007.
46% visited at least 2 times per year.
24% of visitors said they were dissatisfied with parking.
16% of visitors indicated that parking was one of the top 3 factors in their enjoyment of the Zoo/Conservatory.
Visitors would allocate $15 out of a possible $100 to parking/transportation.
Visitors came from:

- 16% City of St. Paul
- 47% Twin Cities Metro Area
- 22% Greater Minnesota (outside Twin Cities)
- 15% Outside Minnesota

20. Woodland Outdoor Classroom Master Plan, St. Paul Parks and Recreation Department (2008)

a. Restore Kilmer Memorial Fireplace and Kilmer Cascades – *not implemented*
b. Develop 8 woodland classrooms – *not implemented*
c. Construct a system of three trail types: 10' wide paved, shared-use trail, narrow bituminous stone-surfaced trail to each classroom study area, and soft-surface gravel or woodchip trail or boardwalk for internal circulation – *not implemented*
d. Disconnect Beulah Lane from Como Avenue and build a cul-de-sac the end of each road – *not implemented*
e. Construct a vehicle drop-off and turnaround area on Como Avenue – *not implemented*

21. Metropolitan Council Regional Parks and Trails Survey, Information Specialist Group (2008)

Primary activities at Como Park, based on intercept surveys conducted in the summer of 2008:

- Zoo (79%)
- Other (10%)
- Picnic (7%)
- Walking/hiking (6%)
- Jogging/running (2%)
- Relaxing (2%)
- Dog walking (1%)
- Swimming (1%) – *note: pool was closed at the time of the survey*
- Sunbathing (1%)
- Camping (1%)

Visits to Como Park from:

- St Paul (15%)
- Minneapolis (11%)
- Ramsey County (10%)
- Metro Area (excluding St. Paul, Minneapolis, Ramsey County) (39%)
- Greater Minnesota (9%)
- Outside Minnesota (16%)
- Outside United States (1%)

Average non-local visits to all St. Paul Regional Parks = 49%

22. What Do You Want at an Aquatic Facility in Como Park Community Survey, Como Park Alliance (2008)

356 survey responses

- 95% of responses were within the five zip codes around Como Park
- Majority of respondents were 35 to 54
- Majority of respondents used the pool at least 4 times per year
- Quality of facilities and admission fees were both important factors influencing usage
- Residents preferred recreational swimming and children's pool facilities over water park facility

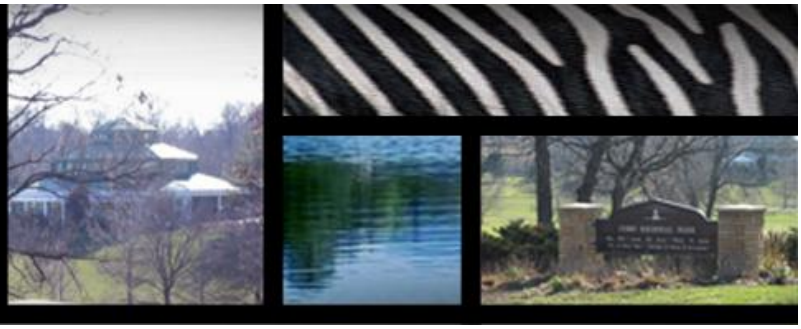
23. Como Regional Park Pool Replacement, US Aquatics, including Traffic and Parking Analysis by SRF Consulting Group (2009)

a. Combine Jessamine Avenue and Como Avenue at a signaled intersection on Lexington Parkway – *not implemented*
b. Disconnect Beulah Lane from Como Avenue and provide a turnaround at the end of each road – *not implemented*
c. Add a traffic circle at the intersection of Jessamine Avenue and Beulah Lane – *not implemented*
d. Eliminate vehicle access to the pool from Horton Avenue – *not implemented*
e. Remove existing pool parking lot and construct new parking lot on Como Avenue – *not implemented*
f. Extend Como Shuttle route to pool complex – *not implemented*
g. Investigate connection from Central Corridor LRT on Lexington Parkway – *not implemented*
h. Construct new pool complex – *not implemented*
i. Relocate tennis courts – *not implemented*
j. Reduce McMurray Fields from 6 softball/baseball diamonds to 3 diamonds – *not implemented*

24. Task Force Alternative Vote, Como Aquatic Center Task Force (2009)

The residents' position was summarized in the following points:

- The pool was not considered in the larger context of the park and there were not enough opportunities to gather and incorporate feedback.
- A neighborhood pool, rather than a city-wide aquatic center, is desired. Other sites for a city-wide pool should have been considered.



- There are concerns with phased implementation, namely that the projects not completed in the first phase will never be funded.

25. Final Report on Como Area Preliminary Parking Study, St. Paul Public Works Department (2009)

a. Conduct a study of the broader Como Park area before implementing permit parking - *implemented*
b. Install parking restrictions on residential streets (west side of park) within 1,500 feet of park entrance – *to be implemented February 2011*
c. Expand shuttle service to weekdays – *implemented June 2010*
d. Evaluate parking alternatives on Hamline Avenue - *to be completed as part of current study*
e. Evaluate limited time parking restrictions as an alternative to permit parking – *to be completed as part of current study*

26. Annual Use Estimate of the Metropolitan Regional Parks System, Metropolitan Council (1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009)

Annual growth in visitors 1995-2009:

- Como Regional Park = 3.21%
- City of St. Paul Parks System = 5.44%
- Regional Parks System = 7.75%

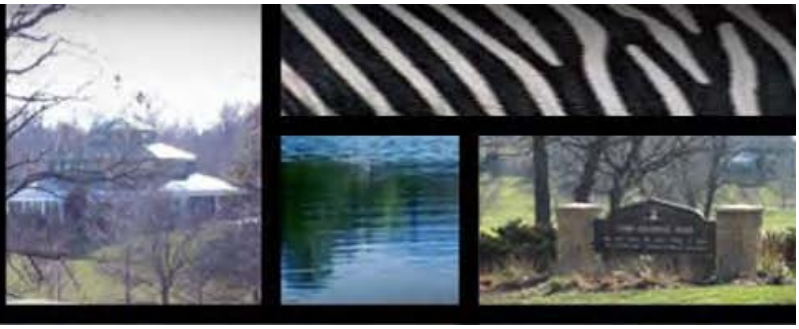
Data was collected at 54 facilities in 1995 compared to 85 facilities in 2008.
Starting in 2008, the estimated visitors per year changed based on an updated persons per vehicle (PPV) factor. The PPV factors used from 1999-2007 were based on 1998 data, and prior to that based on 1982 data. Seasonal factors were also updated to reflect increased "non-summer" park use.
If the updated PPV and seasonal factors were applied to the 2007 data, it would have resulted in an estimate of 35,563,700 annual park visits rather than 33,047,700 visits (i.e., 7.6% higher)
The current PPV factor is 3.61 for the Como Zoo and Conservatory. The PPV factor is 2.96 for the rest of the Como campus, as well as other St. Paul regional parks. The 1998 PPV factor for Como Park was 2.31. *Note that PPV factors for the Como Zoo and Conservatory were developed prior to operation of the shuttle.*

27. Butterfly Lot Overflow Parking Study, City of St. Paul Parks and Recreation (2009)

Concept parking using reinforced turf = net addition of 51 spaces.

Estimated cost = $210,000

Appendix C: Parking Data Collection



Data Collection Background Information

Weather

Thursday, June 24 – High 82° F, Low 60° F

65% relative humidity

5 mph wind

Sunny

No precipitation

Saturday, June 26 – High 84° F, Low 66° F

76% relative humidity

7 mph wind

Rain in the evening

Estimated Attendance (Zoo, Conservatory, and Como Town only)

Thursday, June 24 – 12,540

Saturday, June 26 – 16,145

Average Estimated June Saturday Attendance 2006-2010 = 13,832

Average Estimated July Saturday Attendance 2006-2009 = 14,497

Shuttle Riders

Thursday, June 24 – 320

Saturday, June 26 – 485

Activities and Events

Thursday, June 24 –

McMurray Fields

6:15 – 10:15 PM Adult softball league games on fields 1, 3, 4, and 6.

7:00 – 10:00 PM Adult kickball rentals on fields 2 and 5.

Baseball game on baseball field.

Soccer and lacrosse rentals on all three soccer fields.

Como Shelter

9:00 AM – 6:00 PM Picnic

Como Pavilion

7:30 AM – 10:00 PM Company Picnic

Como Street Car Station

8:00 AM – 5:00 PM Parks and Recreation Summer Camp

6:30 – 9:30 PM Grooms Dinner

Lakeside Pavilion

8:00 AM – 8:00 PM Black Bear Crossings open

8:00 AM – 4:00 PM Urban Boat Builders, Promenade

5:00 PM Wedding Rehearsal, Promenade

7:00 – 9:00 PM Music in the Park Concert, Promenade

Saturday, June 26 –

McMurray Fields

No programs scheduled on softball or baseball fields.

Soccer rentals on all three soccer fields.

Como Shelter

7:30 AM – 2:30 PM	Church Picnic
4:00 – 10:00 PM	Wedding Reception

Como Pavilion

7:30 AM – 2:30 PM	Company Picnic
4:00 – 10:00 PM	Wedding Party

Como Street Car Station

11:00 AM – 4:00 PM	Graduation Party
6:00 – 9:00 PM	Concert

Lakeside Pavilion

8:00 AM – 8:00 PM	Black Bear Crossings open
8:00 – 11:00 AM	Non-profit walk/run around Lake Como, registration and refreshments on the Promenade
12:30 – 2:30 PM	Wedding ceremony, Promenade
3:00 – 5:00 PM	Wedding ceremony, Promenade
5:30 – 7:30 PM	Wedding ceremony, Promenade
7:00 PM – 12:00 AM	Wedding reception, 2nd & 3rd floors

Figure C.1 Parking Occupancy - Weekday 9:00 AM

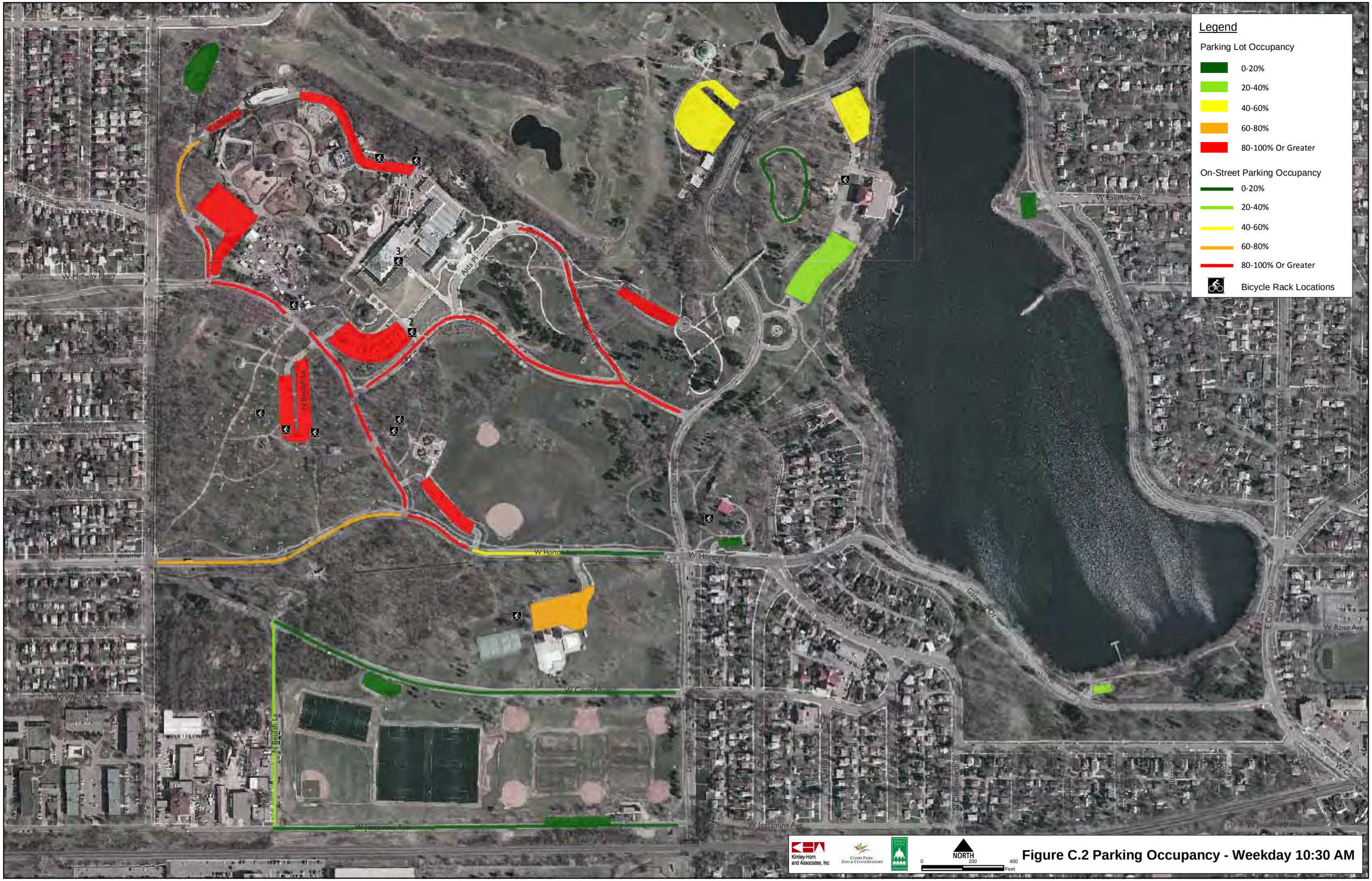


Figure C.2 Parking Occupancy - Weekday 10:30 AM

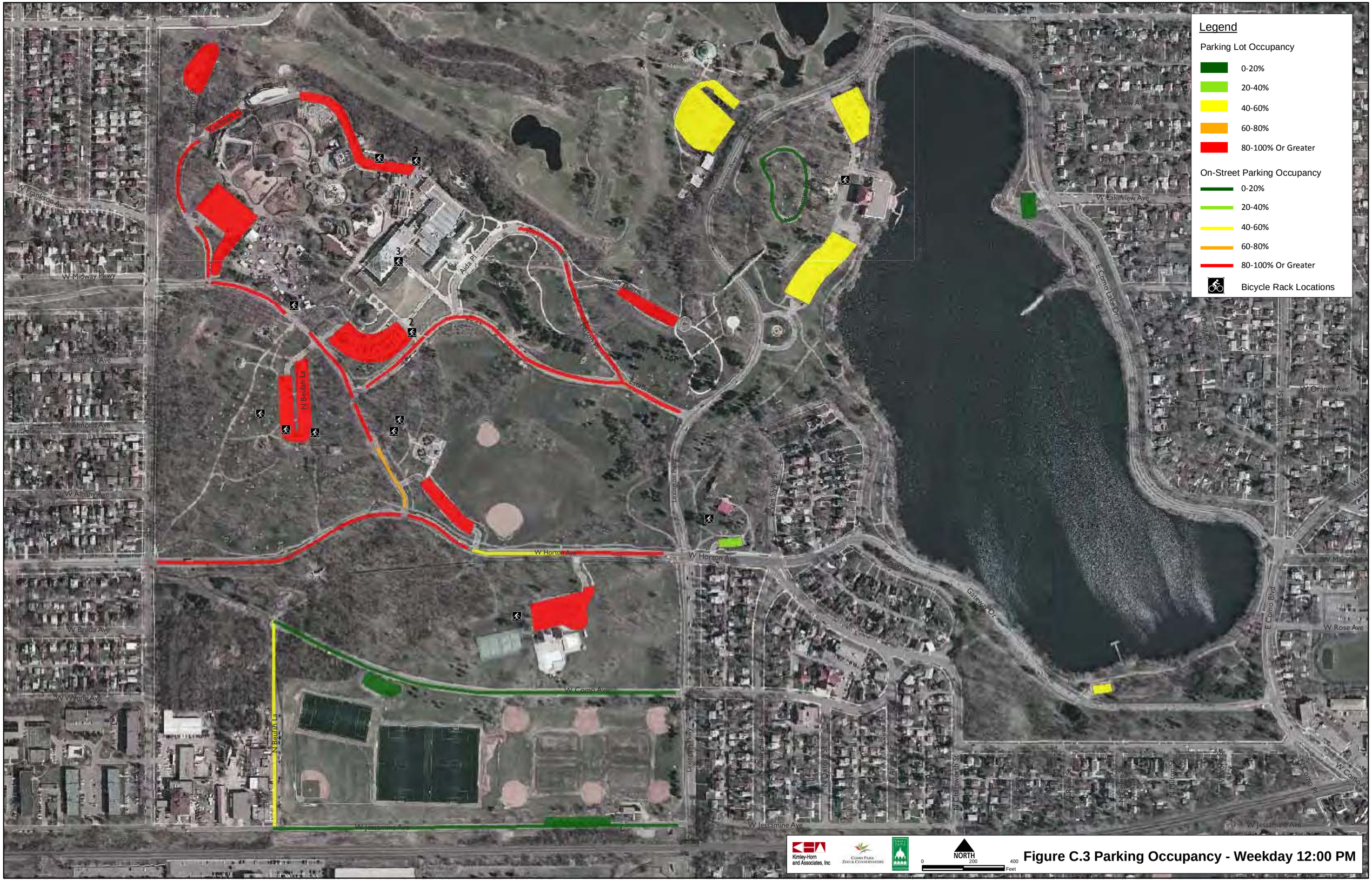


Figure C.3 Parking Occupancy - Weekday 12:00 PM

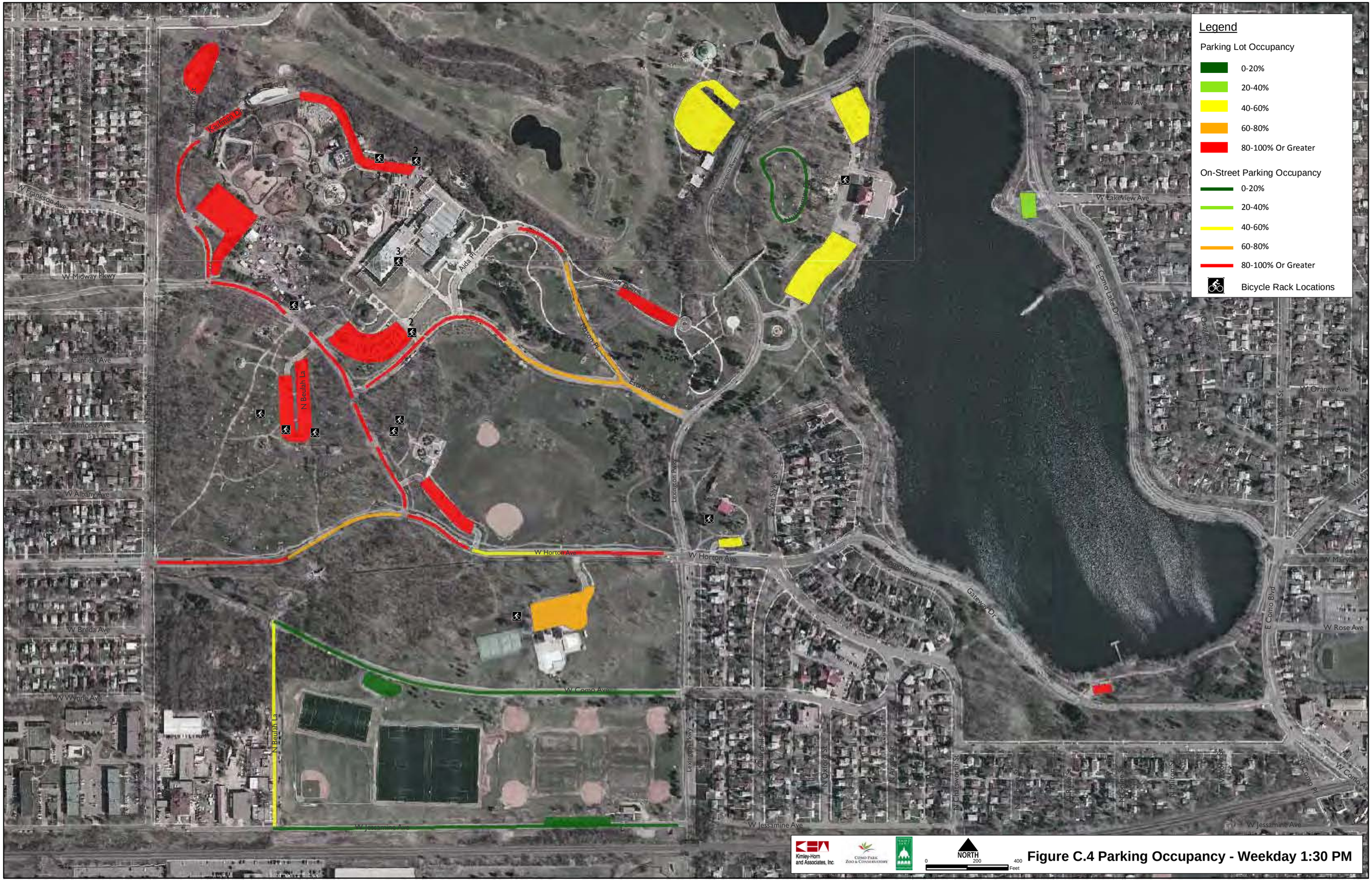
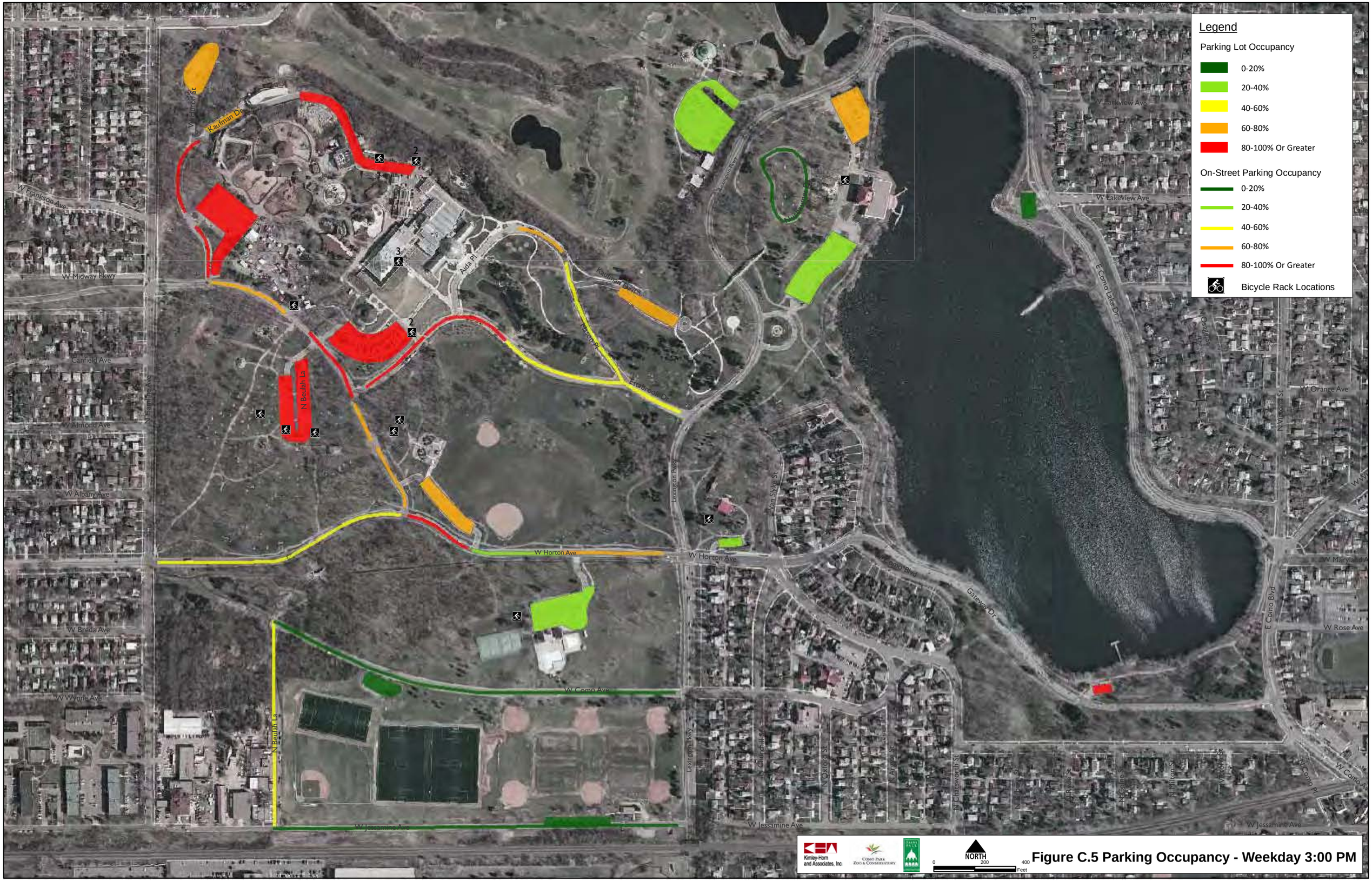


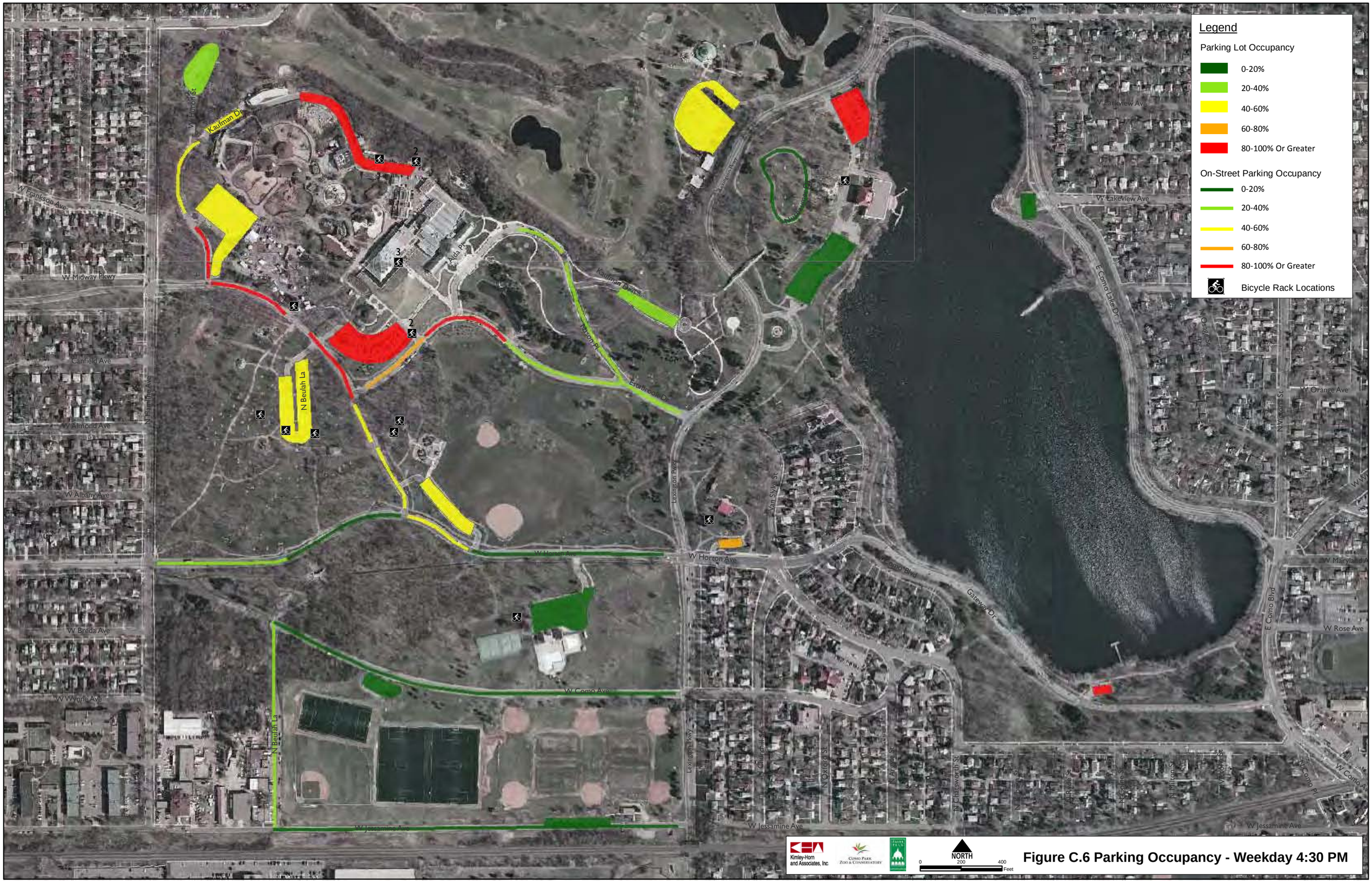
Figure C.4 Parking Occupancy - Weekday 1:30 PM



Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

Figure C.5 Parking Occupancy - Weekday 3:00 PM



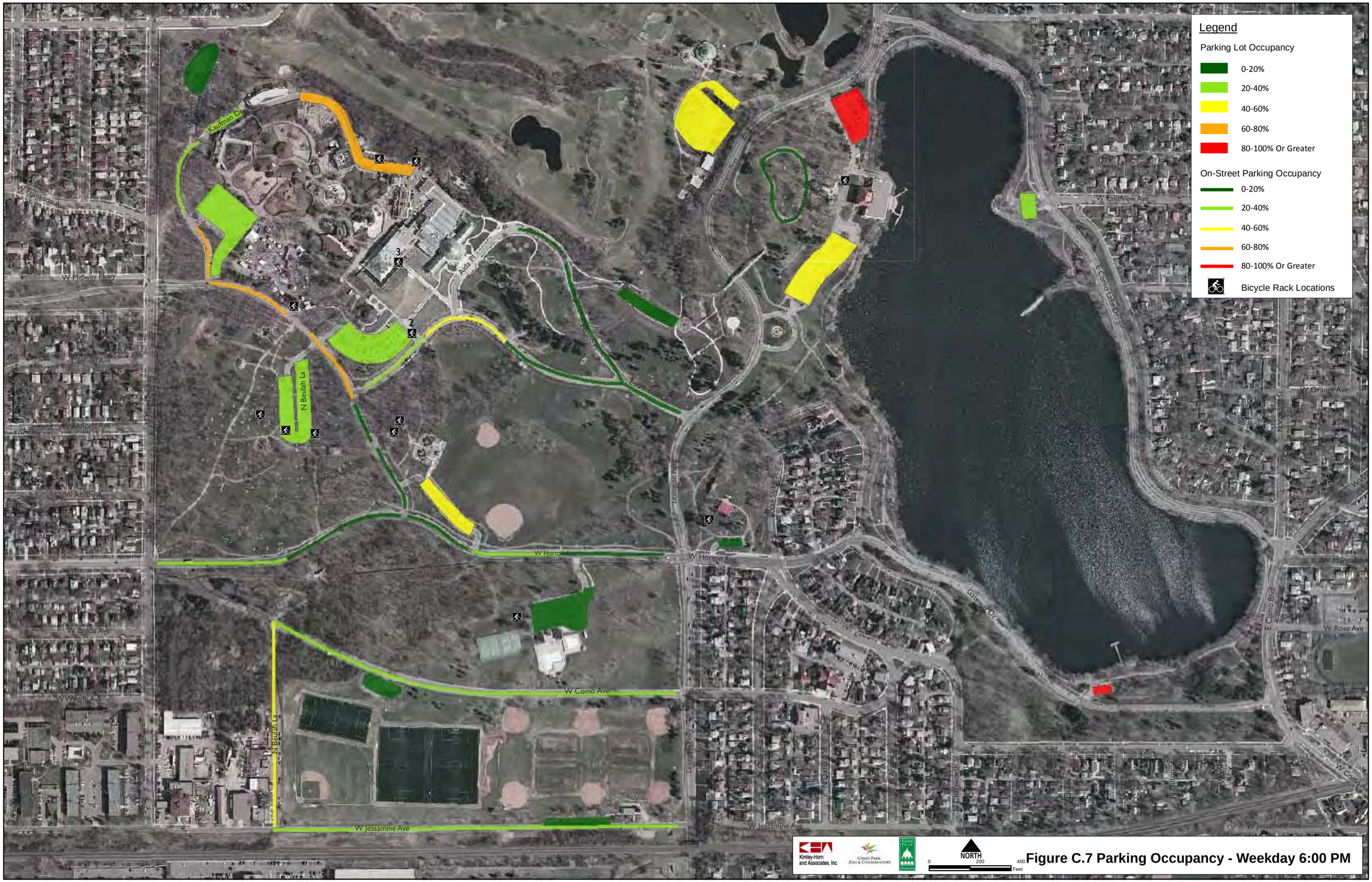
Kimley-Horn and Associates, Inc.

Como Park Zoo & Conservatory

NORTH

0 200 400 Feet

Figure C.6 Parking Occupancy - Weekday 4:30 PM


Legend
Parking Lot Occupancy
0-20%
20-40%
40-60%
60-80%
80-100% Or Greater
On-Street Parking Occupancy
0-20%
20-40%
40-60%
60-80%
80-100% Or Greater
Bicycle Rack Locations
Kaufman Dr
W Horton Ave
W Frankson Ave
W Midway Pkwy
Canfield Ave
W Almond Ave
W Albany Ave
W Breda Ave
W Wynnie Ave
N Beulah La
W Como Ave
W Jessamine Ave
Aida Pl
Kaufman Trail
Nature Trail
Exuberant Dr
Lexington Pkwy
Van Slyke St
W Lakeview Ave
E Como Blvd
Gateway Dr
N Ossipee St
W Orange Ave
W Rose Ave
W Como Pl
N Chatsworth St
N Oxford St
N Arona St
N Milton St
2
3
NORTH
0
200
400
Feet
Kimley-Horn and Associates, Inc.
Como Park Zoo & Conservatory
Figure C.7 Parking Occupancy - Weekday 6:00 PM

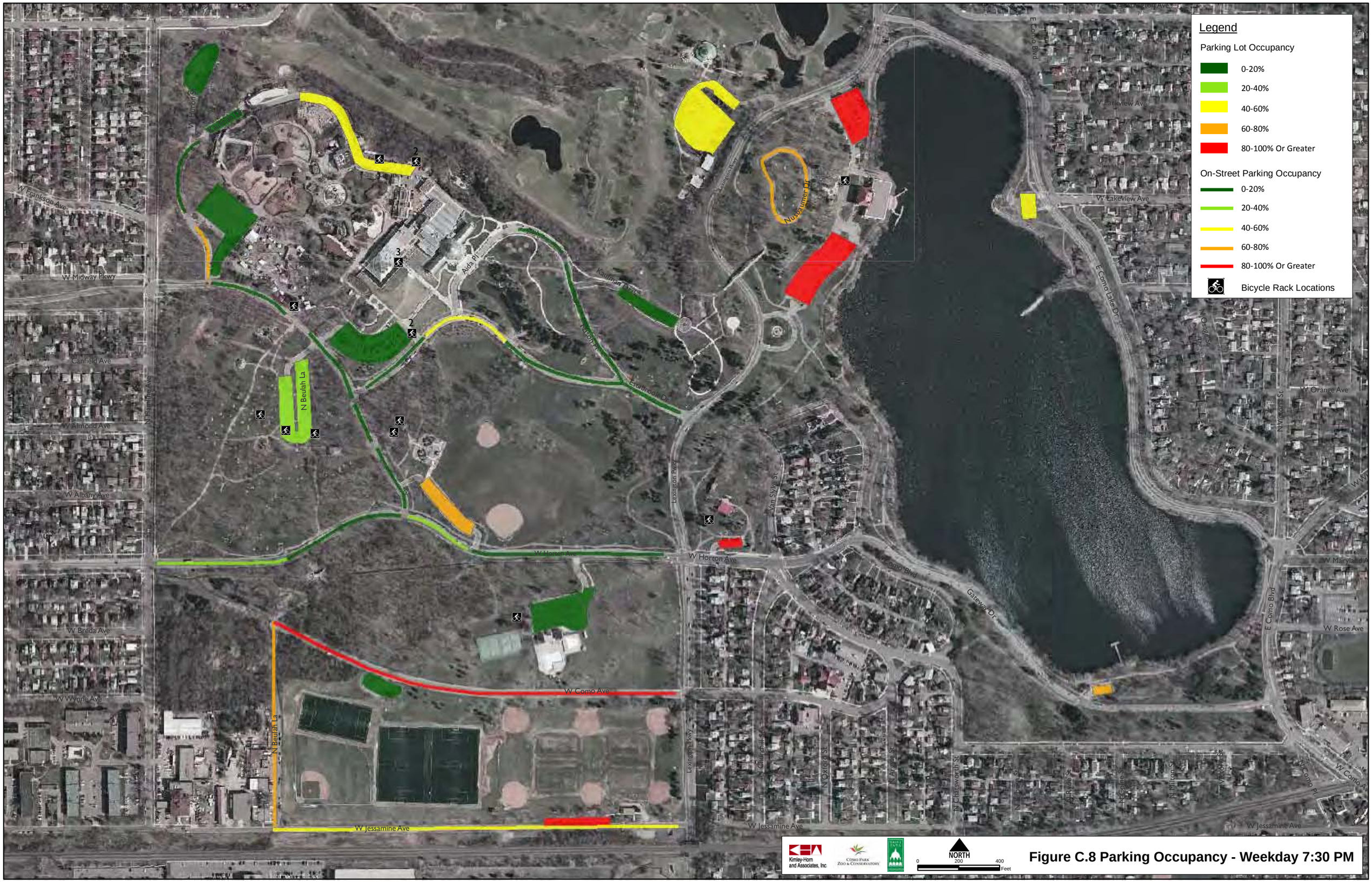


Figure C.8 Parking Occupancy - Weekday 7:30 PM

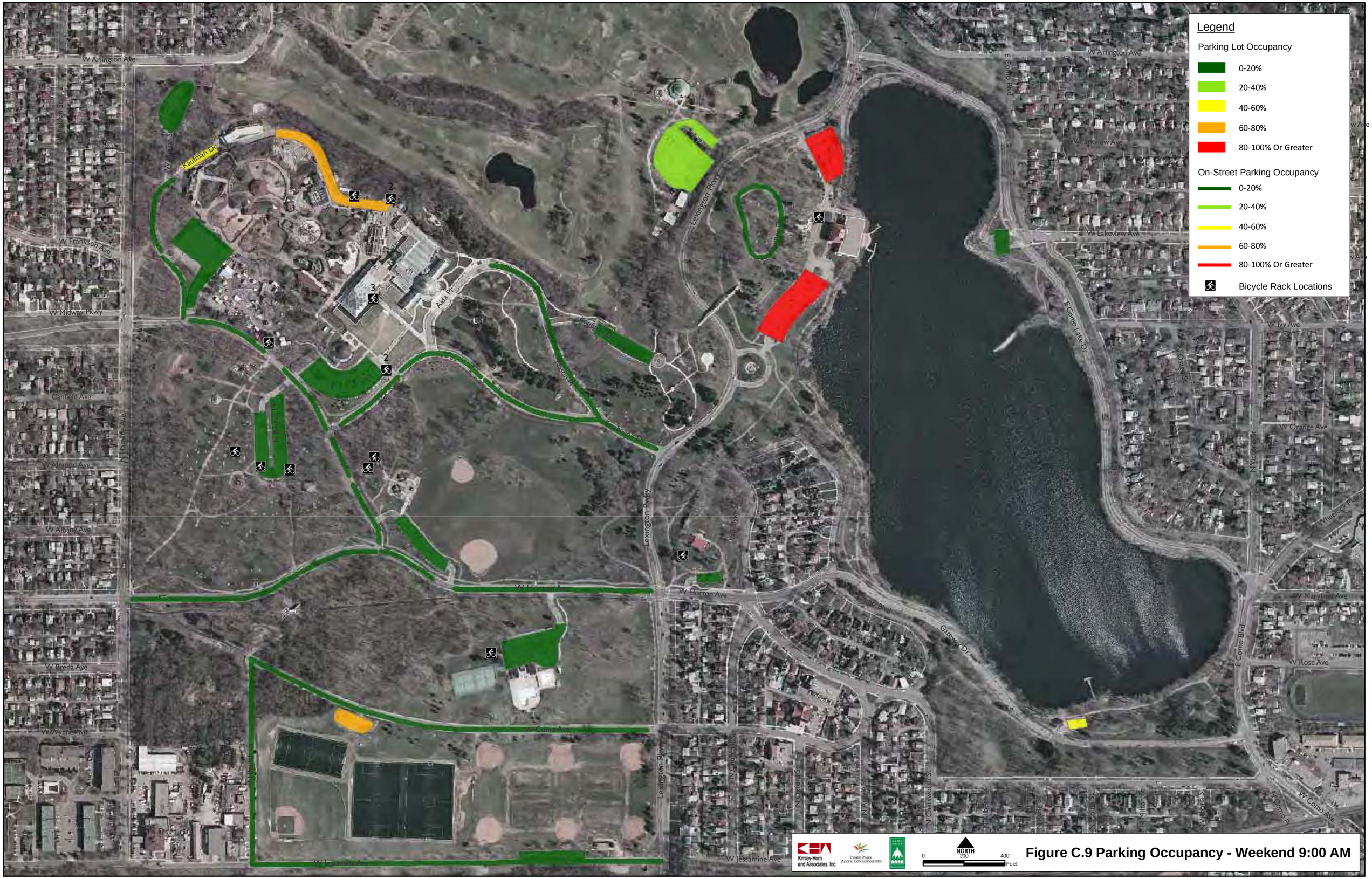


Figure C.9 Parking Occupancy - Weekend 9:00 AM

Figure C.10 Parking Occupancy - Weekend 10:30 AM

Figure C.11 Parking Occupancy - Weekend 12:00 PM

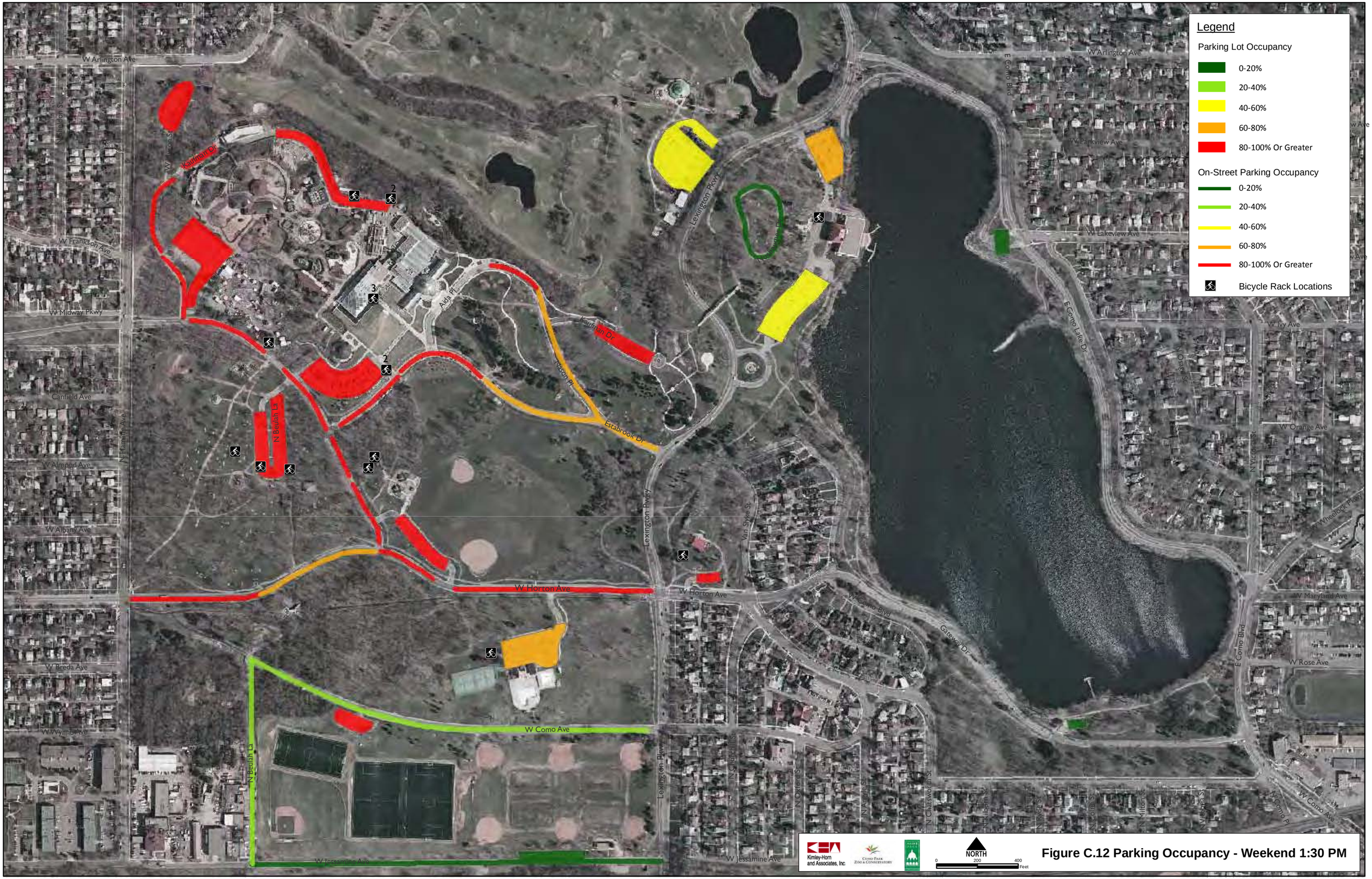


Figure C.12 Parking Occupancy - Weekend 1:30 PM


Legend
Parking Lot Occupancy
0-20%
20-40%
40-60%
60-80%
80-100% Or Greater
On-Street Parking Occupancy
0-20%
20-40%
40-60%
60-80%
80-100% Or Greater
Bicycle Rack Locations
W Arlington Ave
W Frankson Ave
W Midway Pkwy
Canfield Ave
W Almond Ave
W Albany Ave
W Breda Ave
W Wynnewood Ave
W Jessamine Ave
W Horton Ave
W Como Ave
W Lakeview Ave
W Parkview Ave
W Ivy Ave
W Orange Ave
W Maryland Ave
W Rose Ave
Kaufman Dr
Aida Pl
Nilson Pl
Estabrook Dr
Lexington Pkwy
Vugbaumer Dr
E Como Blvd
E Como Lake Dr
W Como Blvd
Gateway Dr
Kimley-Horn and Associates, Inc.
NORTH
0
200
400
Feet
Figure C.13 Parking Occupancy - Weekend 3:00 PM

Figure C.14 Parking Occupancy - Weekend 4:30 PM

Figure C.15 Parking Occupancy - Weekend 6:00 PM

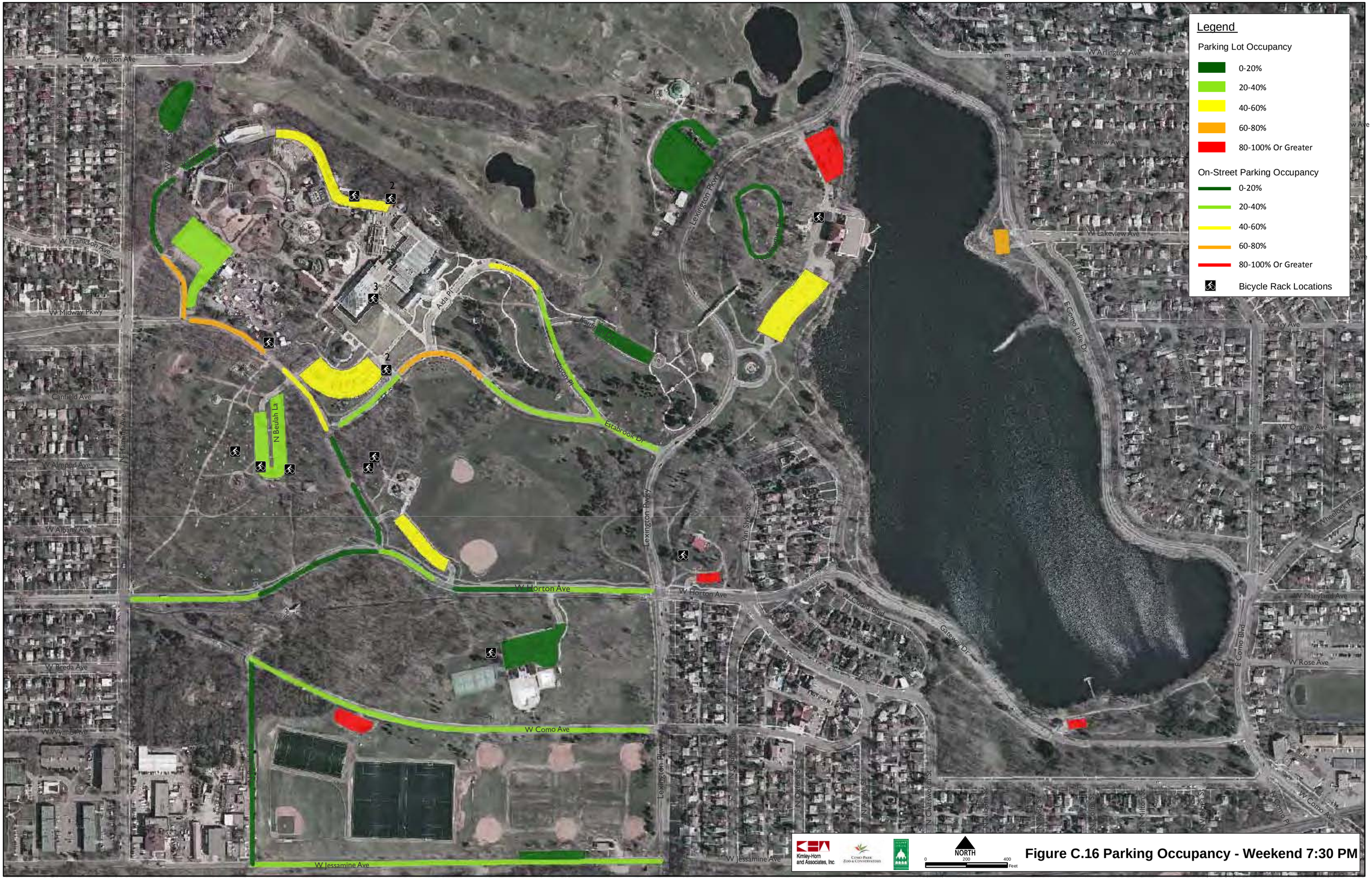


Figure C.16 Parking Occupancy - Weekend 7:30 PM