

ATCMTD Funding Opportunity Application

Chicago Smart Parking Solution

Project Name	Chicago Smart Parking Solution
Previously Incurred Project Cost	\$ 0
Future Eligible Project Cost	\$ 10,250,000
Total Project Cost	\$ 10,250,000
ATCMTD Request	\$ 5,125,000
Total Federal Funding (including ATCMTD)	\$ 5,125,000
Are matching funds restricted to a specific project component? If so, which one?	No
State(s) in which the project is located	Illinois
Is the project currently programmed in the: <ul style="list-style-type: none">• Transportation Improvement Program (TIP)• Statewide Transportation Improvement Program (STIP)• MPO Long Range Transportation Plan• State Long Range Transportation Plan	<ul style="list-style-type: none">• No• No• No• No



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1. Project Description

1.1. Executive Summary

The City of Chicago draws millions of visitors annually to the City with several world class theatres, museums, parks, and stadiums. The City of Chicago airports (O'Hare and Midway) also service millions of travelers annually. In addition to the daily visitors and travelers, Chicago's venues host special events including concerts, conventions, festivals, and sporting events causing an influx in the number of motorists searching for parking on the adjacent roadways. For several years Chicago has been consistently named as one of the top five most congested cities in the county. Motorists searching for parking are one of the primary reasons for traffic congestion in Chicago.

Chicago has about one million motorists on its streets on an average day. If half of these drivers spend 5 minutes looking for parking, the City has over 40,000 hours of additional driving time every day on its streets.

The Chicago Department of Transportation (CDOT) is proposing implementing the Chicago Smart Parking Solution (CSPS) project to reduce traffic congestion and improve air quality on the street systems surrounding our large venues and airports. By creating a public/private partnership, the CSPS will provide motorists with near real time information on the number of available parking spaces in off-street and on-street parking facilities and direct them to alternative parking facilities when their primary parking facility is at capacity. This will allow motorists to make informed decisions about their travel route, thus reducing the amount of circulating traffic by motorists searching for available parking.

This initial CSPS implementation will include a combination of City owned and private owned parking facilities. The initial facilities selected for this project are based on nearness to City venues, capacity of the facility, availability of shuttle service from the facility to the venues, and facility's affiliation with the venues. These selected facilities will need monitoring equipment and software to provide near real time availability information to be included in the CSPS. The CSPS will be modular to allow for system expansion to add more facilities and venues.

The CSPS system components will consist of parking facility monitoring equipment installed by the facility owner, an application programming interface (API) to share near real time data, a cloud based parking data integrator (PDI), a central processing system, variable message signs, static wayfinding system, mobile application, website, and communication links supporting the transfer of information between these components. Additionally, the CSPS is proposing to expand the trolley service currently operated by the Navy Pier, Inc. to link the Navy Pier, Millennium/Grant Park, and Museum Campus parking facilities. This will create a seamless park

once and visit several venues framework for parking along the Chicago downtown lakefront.

The number of open parking spaces at each facility and on street locations will be collected in near real time; then this data will be processed and displayed on the variable message signs, mobile application, and website. In addition, the CSPS will provide a wayfinding system using static signs to direct motorists to the parking facilities.

An API will be provided to link the PDI with the software at each of the separate parking facilities. Each facility will connect to the PDI using standard Internet connection. The PDI will use the data from the individual garages and on street parking vendor to update the mobile application and website and also forward the data to the CSPS central processing system. CDOT is currently developing a Citywide Advanced Traffic Management System (ATMS) that will be used as the CSPS central processing system. Once the ATMS has processed the parking availability information, it will transmit the message to the appropriate variable message signs via a wired or wireless connection. The process of collecting, processing, and transmitting the information will be done in near real time. The parking availability information will also be displayed via a map interface on the ATMS. By utilizing a PDI service that will be responsible for collecting the data from parking service providers, the City can focus on parking management rather than being bogged down by issues related to data collection and communication network maintenance.

Full color LED variable message signs will be placed at major entry points to the venues or to the City. It is anticipated the variable message sign will be configured to display the name of the specific parking facility or area, directional arrow, and number of available parking spaces. Panels can be configured to display parking availability for multiple facilities. In addition to displaying parking information, the CSPS variable message signs could be used in emergency situations to display critical pieces of information for motorists. A combination of variable and static wayfinding message signs will be placed in between the primary entry point variable message signs and the parking facilities. Most common placement of these signs will be in advance of where a motorist has to make a turn or decide on a parking facility.

CSPS will further expand the trolley service operated by the Navy Pier, Inc. so as to link the major venues and garages along the Chicago Downtown Lakefront. By linking the venues and parking facilities along the lakefront with a trolley service, motorists will be encouraged to park at any of the venues and use the trolley to travel between the venues. Currently motorists have to park at one venue; drive to the next venue and park there and so on to access the downtown venues. The drive to everywhere model does not offer an alternative to motorists when parking at one venue is at capacity.

1.2. Introduction

The City of Chicago, with several world class theatres, museums, parks, and stadiums, draws millions of visitors annually to the City. Most of these venues are concentrated in tourist hubs including the Theatre District, Navy Pier, Millennium/Grant Park, and the Museum Campus. The individual venues within these tourist hubs and stadium venues are listed below.

Theatre District

- Cadillac Palace Theatre
- Oriental Theatre
- PrivateBank Theatre

Navy Pier

- Chicago Children's Museum
- Chicago Shakespeare Theater
- Pepsi Skyline Stage
- Festival Hall Exhibition Space

Millennium/Grant Park

- Millennium Park
- Grant Park
- The Art Institute of Chicago

Museum Campus

- The Field Museum
- Shedd Aquarium
- Adler Planetarium
- Northerly Island
- FirstMerit Bank Pavilion at Northerly Island
- McCormick Place Convention Center
- Soldier Field

Stadiums

- Wrigley Field
- US Cellular Field
- United Center

In addition to these venues, the City of Chicago airports (O'hare and Midway) together service about 100 million travelers annually.

The majority of these venues are located within downtown Chicago with the exception of the stadium venues and airports. Figure 1 shows the location of the tourist hubs, stadiums, and airports in relation to the City of Chicago limits. Figures 2-5 shows the location of the individual venues within the tourist hubs.

Figure 1 – Tourist Hubs, Stadiums, and Airports

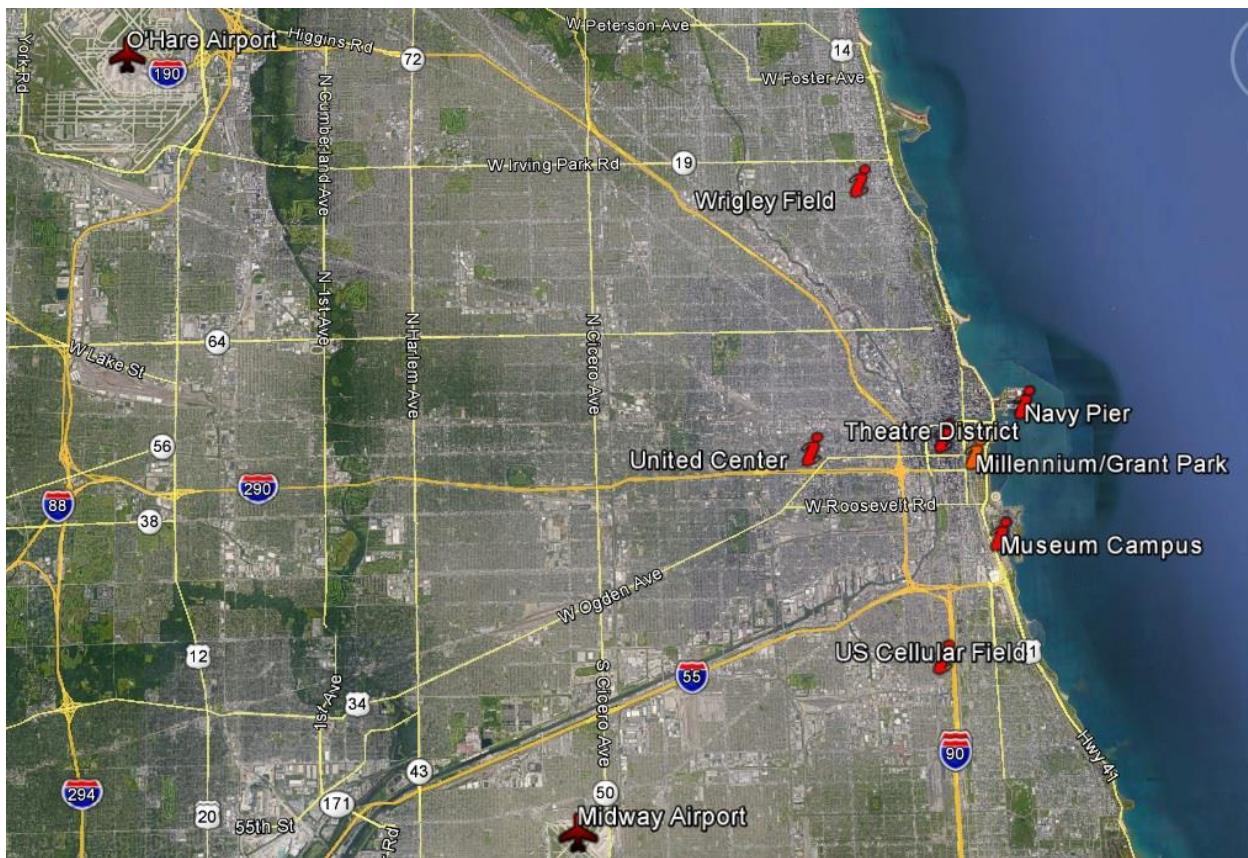


Figure 2 – Chicago Theatre District Venues

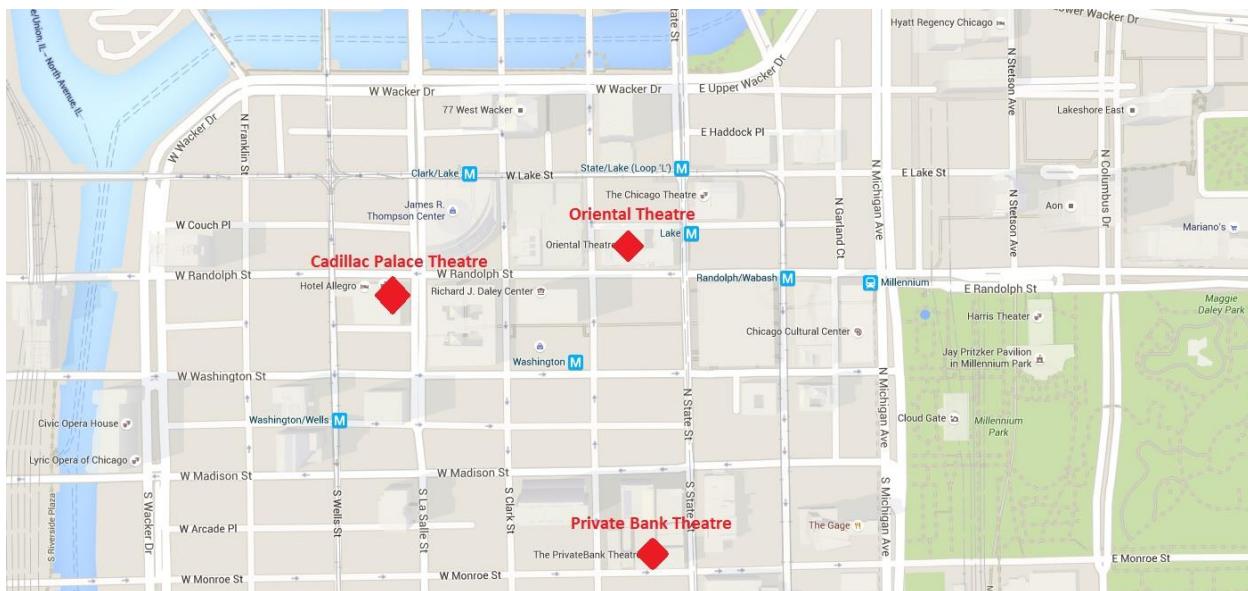


Figure 3 – Millennium/Grant Park Venues

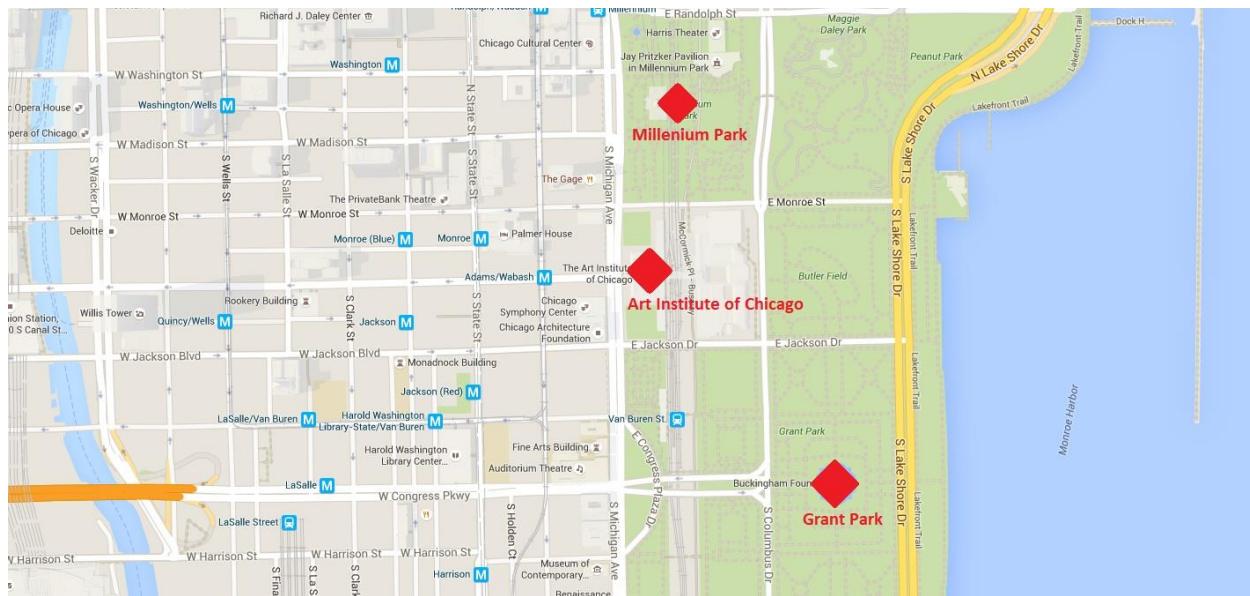


Figure 4 – Museum Campus Venues

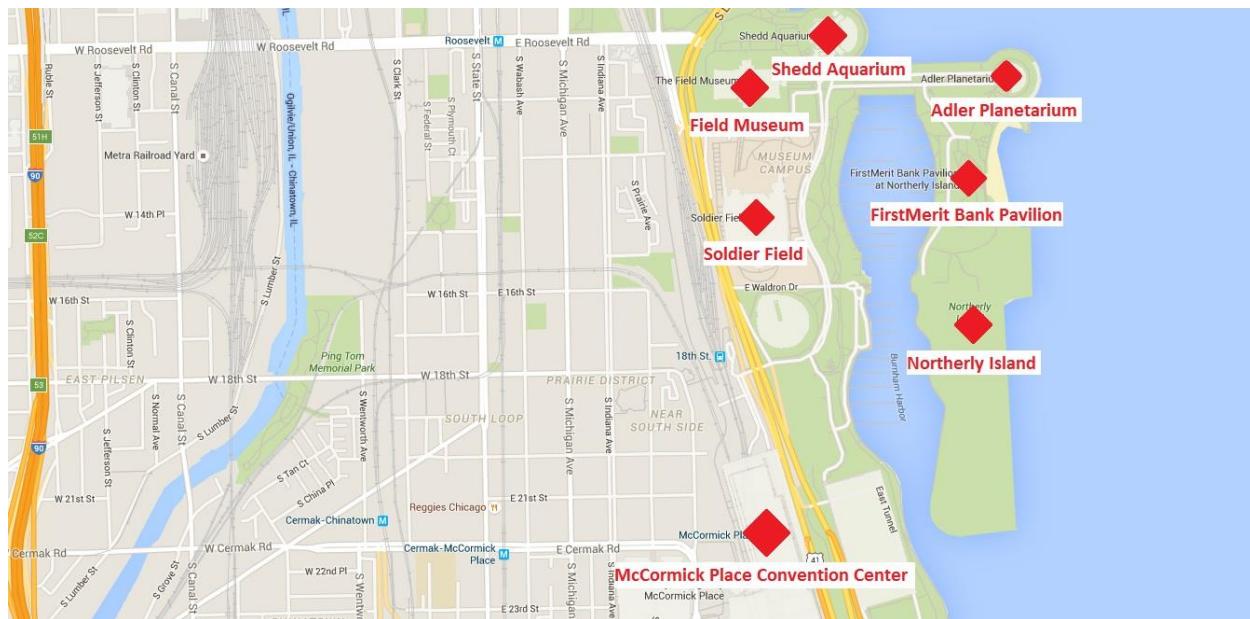


Figure 5 – Navy Pier Venues



average in a downtown area are searching for available parking taking an average time of 3.5 to 14 minutes each to find a parking spot. Within a 15-block downtown section, motorists were observed driving 950,000 miles searching for parking. These motorists used 47,000 gallons of gas and produced 730 tons of carbon dioxide in their parking searches. Chicago has about one million motorists on our streets on an average day. If half of these drivers spend 5 minutes looking for parking, we have over 40,000 hours of additional driving time every day on our streets. Motorists searching for parking are certainly adding to the traffic congestion in Chicago.

To alleviate these problems, the Chicago Department of Transportation (CDOT) is proposing implementing the Chicago Smart Parking Solution (CSPS) project to provide motorists with near real time information on the number of available parking spaces in off-street and on-street parking facilities and direct them to alternate parking facilities when the primary parking facility is at capacity. This will allow motorists to make informed decisions about their travel route

In addition to regular programming, our venues frequently host special events including sporting events, concerts, conventions, and festivals. These events cause a sharp influx in the number of motorists searching for parking on the street system in the area of these venues. Often these motorists are unfamiliar with the streets surrounding the venue area and are uninformed about parking availability. This causes distracted driving and circulating traffic leading to increased traffic volumes, reduced capacity, and safety issues on the surrounding street network. The problem is compounded when the motorist's primary parking facility is at capacity and they have to search for alternative parking facilities.

A UCLA parking study has noted that up to 30 percent of motorists on

thus reducing the amount of circulating traffic by motorists searching for available parking. Additionally this project will add a trolley service linking multiple parking facilities and venues.

CDOT is the agency responsible for keeping the City's surface transportation networks and public way safe and efficient. CDOT's goal is to maintain a safe road network that is environmentally sustainable, in a state of good repair, and is attractive to the diverse residents, businesses and guests. CDOT will lead the effort to develop, implement, operate, and maintain the CSPS. We will expend project funds through contracts with consultants and contractors.

CDOT's goals for CSPS are as follows:

- Reduce traffic congestion and improve air quality
- Improve street and intersection safety
- Increase Grant Park Public Parking Facility utilization
- Promote use of shuttle systems and public transportation
- Provide timely, accurate, and useful traveler information to motorists

1.3. Concept of Operations

The City will enter into an agreement with a parking data integrator (PDI) who has skills and experience in collecting parking availability data from a large number of individual operators. Any operation and maintenance costs associated with collecting the parking availability/utilization information will be the responsibility of the PDI and the facility owner/operator. It is expected that the PDI will work with the individual parking facilities and collect the data in near real time from the vehicle counting system currently in place at the individual parking facility.

We expect the PDI to work with both off street and on street parking vendors. Chicago has a few hundred large parking facilities and one on-street parking vendor. Additionally we are expecting the PDI to develop a white labeled website and mobile application that can provide parking information to public. The mobile application and website may also provide a means to purchase/reserve parking spots online. By delegating the data acquisition and dissemination efforts to a PDI, CDOT can focus on the parking management aspects of the CSPS. Cities including Austin, TX and Las Vegas, NV currently have parking data collection arrangements with a PDI who works with individual garage owners and offer a mobile application and website through the PDI. Our project expands this further by utilizing occupancy data from the PDI to direct motorists to the nearest parking facility as well as significantly expand the parking availability in the City by linking major parking lots by a trolley service.

The burden of maintaining dedicated communication and data sharing agreements with a large pool of facilities is not ideal for a local government agency. With the proposed plans CDOT can

operate outside of this problem and yet ensure that the PDI will maintain a certain level of service. PDIs will also build a mobile application and website allowing the public to reserve parking spots. Again, CDOT will not have to take on the burden of maintaining the mobile application and website. Below is a high level concept diagram of the proposed system.



CDOT is currently executing a project to develop an Advanced Traffic Management System (ATMS). It is anticipated the CSPS project will be developed, implemented, and operated as a component of the ATMS. Current ATMS project staff (CDOT and consultants) will be responsible for integration of the CSPS into the ATMS. The PDI will provide the on street and off street parking availability information to the ATMS and ATMS will put the appropriate messages on the variable message signs installed at strategic locations so that we can direct motorists to the nearest available off street or on street parking spot.

Many of our large parking facilities are underutilized most of the time except during special events at the venue near the facility. This issue arises because motorists currently do not have a good mechanism to, for example, park at Soldier Field and visit Navy Pier about a mile away. With the CSPS adding a trolley service that links the parking facilities, we can tap into the unused capacity as well as encourage motorists to not drive to every venue.

Soldier field parking facilities are at capacity mostly during games at Soldier Field while the rest of the year there is plenty of parking availability. Furthermore, the City has four large stadiums

with motorists coming to the stadium looking for available parking with plenty of parking capacity that is not utilized unless there is an event in the stadium. With the proposed variable message sign network, we can dynamically direct the motorists to the facilities where there is available parking capacity.

The City can significantly reduce traffic congestion by collecting near real time parking availability information from off street and on street parking vendors, utilizing variable message signs to direct motorists to the nearest open parking space, tapping into unused parking capacity at large venues, and expanding trolley service.

Interagency Cooperation

A number of agencies and organizations will play roles in the development of the CSPS project. They include the Illinois Department of Transportation (IDOT), Chicago Transit Authority (CTA), Metropolitan Pier and Exposition Authority (MPEA), Navy Pier Inc., Chicago Department of Aviation, public and private parking facility owners/operators, venue owners/operators, information service providers, community organizations, and elected officials.

CDOT will lead the coordination of project roles and responsibilities for each partner agency and system components that will require interagency integration and cooperation. To facilitate these efforts, key stakeholders will be asked to serve on either a community or technical advisory committee for the project. The community advisory committee will provide policy level guidance and community outreach for the overall project while the technical advisory committee will provide technical guidance on key design issues.

1.4. Off-Street Parking Facility Selection

The off street parking facilities selected to provide parking availability data in the initial CSPS implementation will include a combination of City owned parking facilities and privately owned parking facilities. An off street parking facility will need existing monitoring equipment and software providing near real time availability information to be included in the CSPS. Based on our initial survey, most of the large public and private facilities have counting mechanisms to provide automatic availability information. A requirement of the monitoring equipment is the ability to distinguish between monthly (or season for stadiums) and daily parkers entering and exiting the facility. Available public parking spaces will be updated in near real time.

In addition to the above requirements, the initial parking facilities selected for participation will be based on the following factors.

- Capacity of the parking facility
- Parking facility's affiliation with a specific venue, stadium, or airport

- Availability of shuttle service between the venue and the parking facility
- Location of a parking facility

Figures 6-14 highlights the location of these parking facilities in relation to the venues. The CSPS will be modular and will allow for system expansion to add more facilities and venues.

Figure 6 – Millennium/Grant Park Parking Facilities

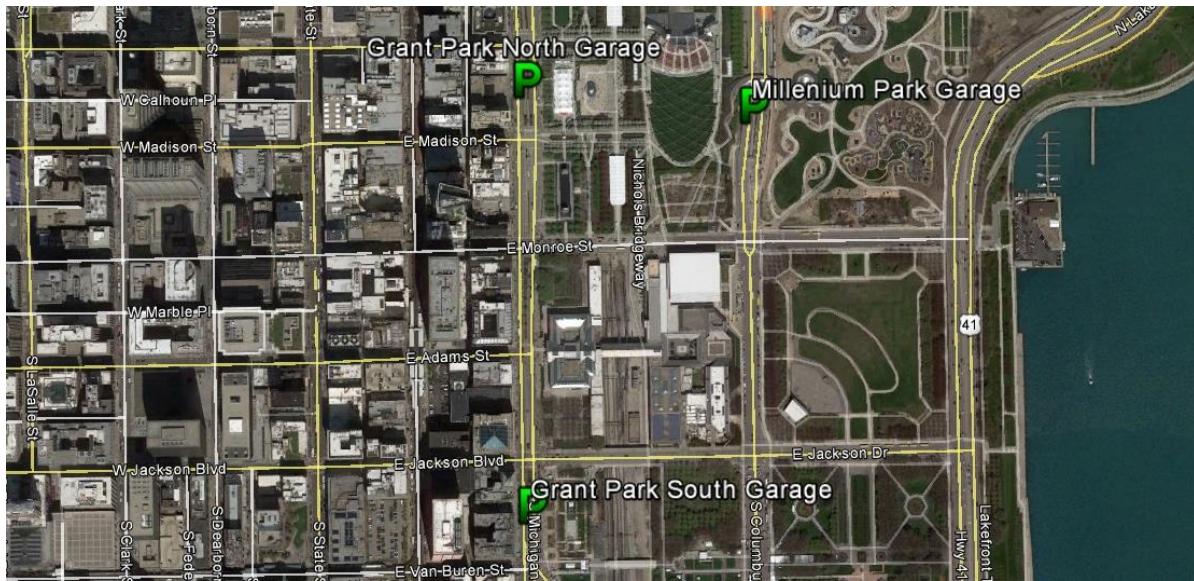


Figure 7 – Museum Campus Parking Facilities

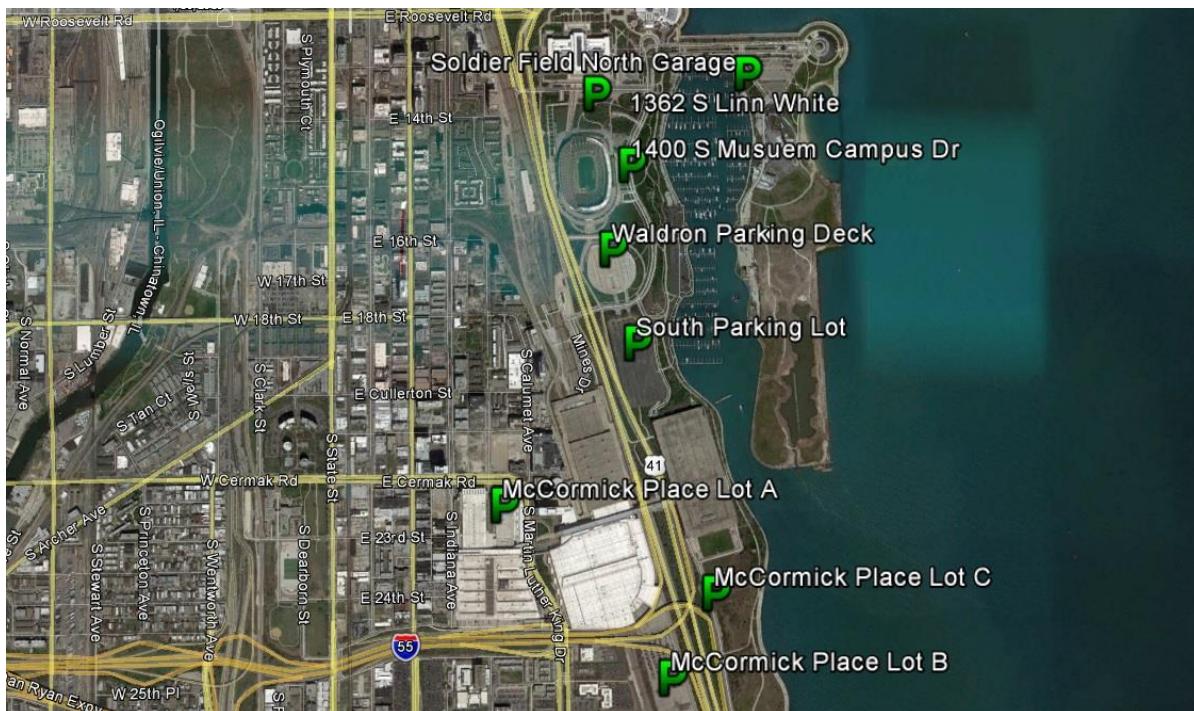


Figure 8 – Navy Pier Parking Facilities

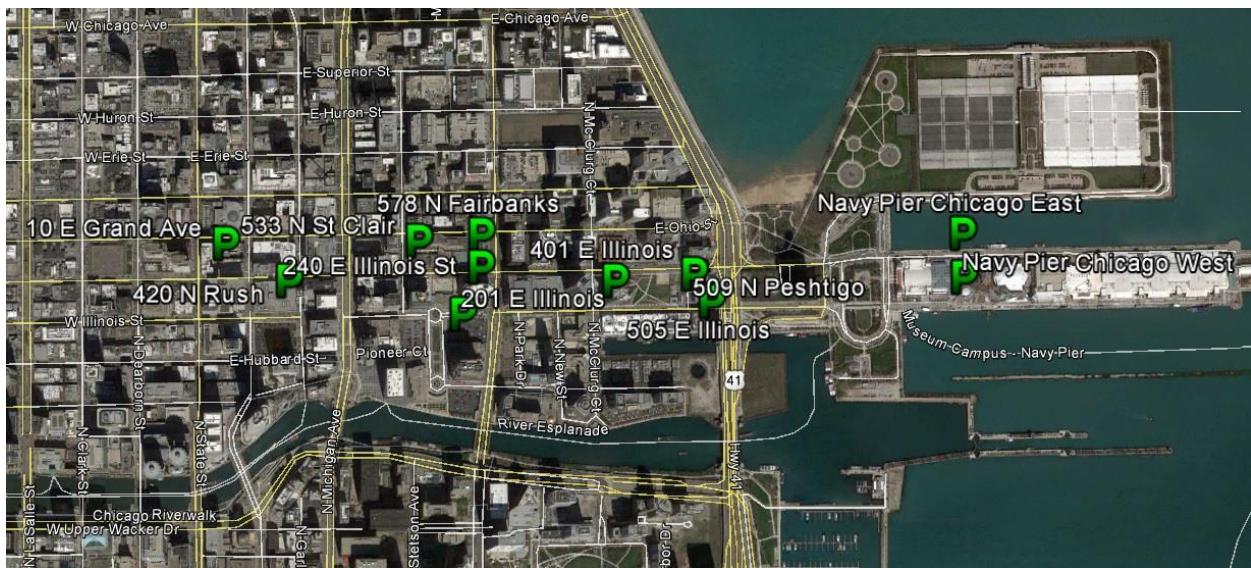


Figure 9 – Theatre District Parking Facilities

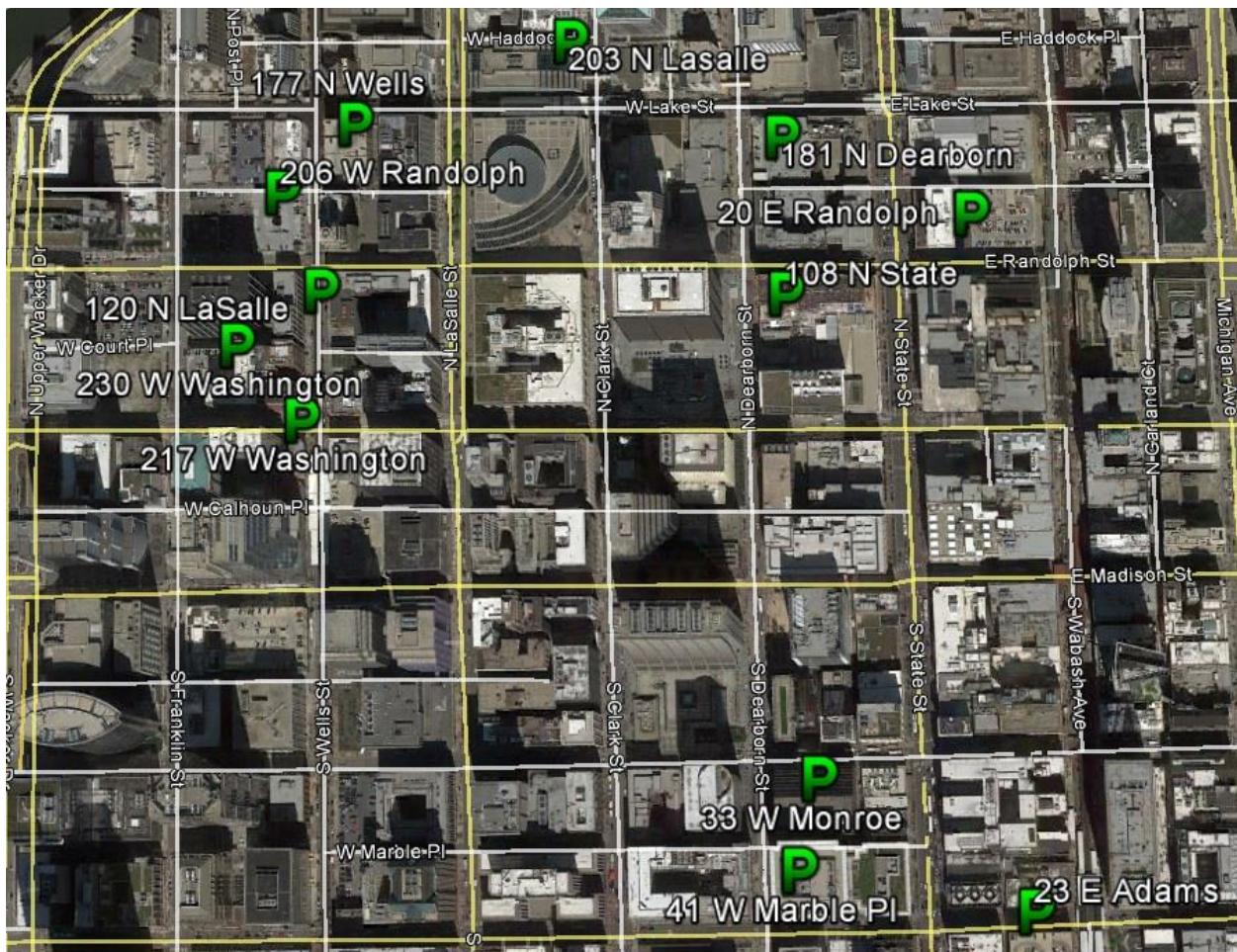


Figure 10 – Wrigley Field Parking Facilities

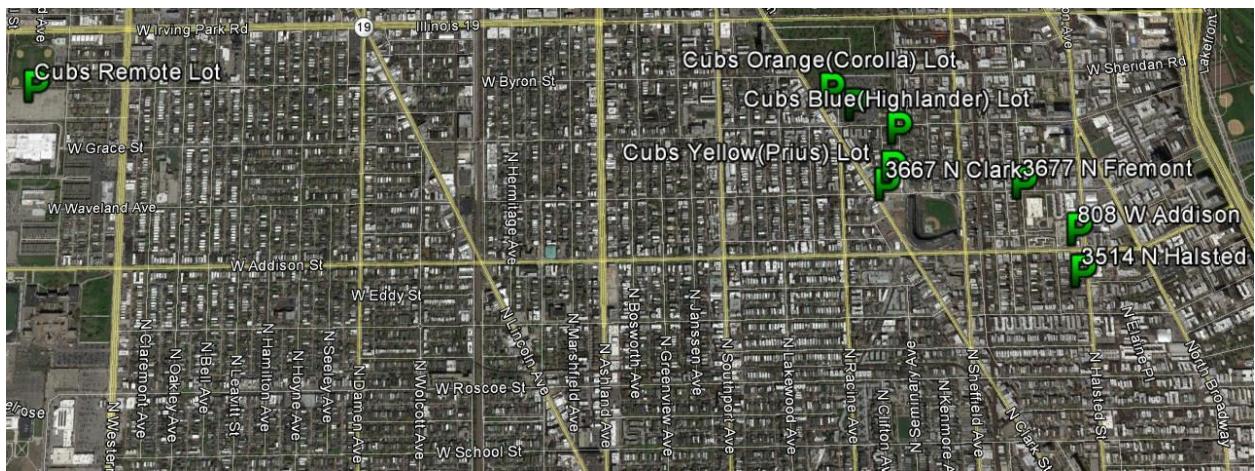


Figure 11 – US Cellular Field Parking Facilities

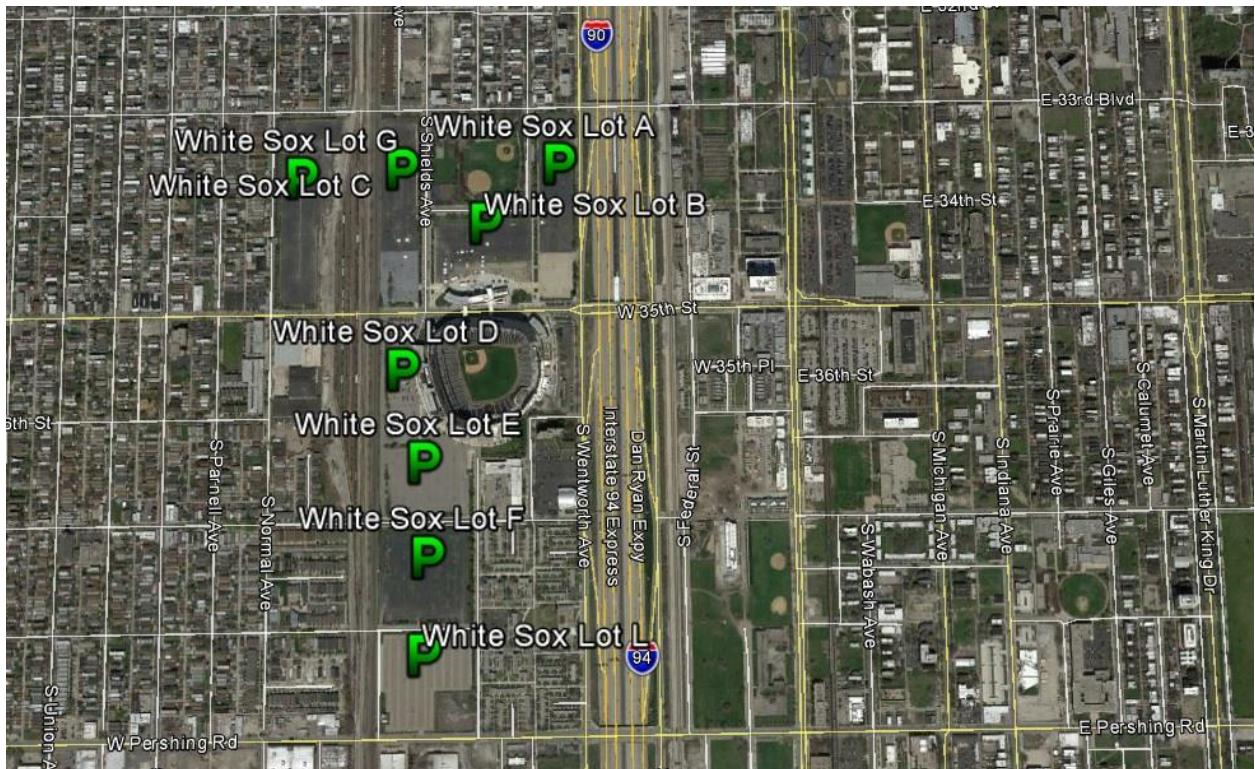


Figure 12 – United Center Parking Facilities

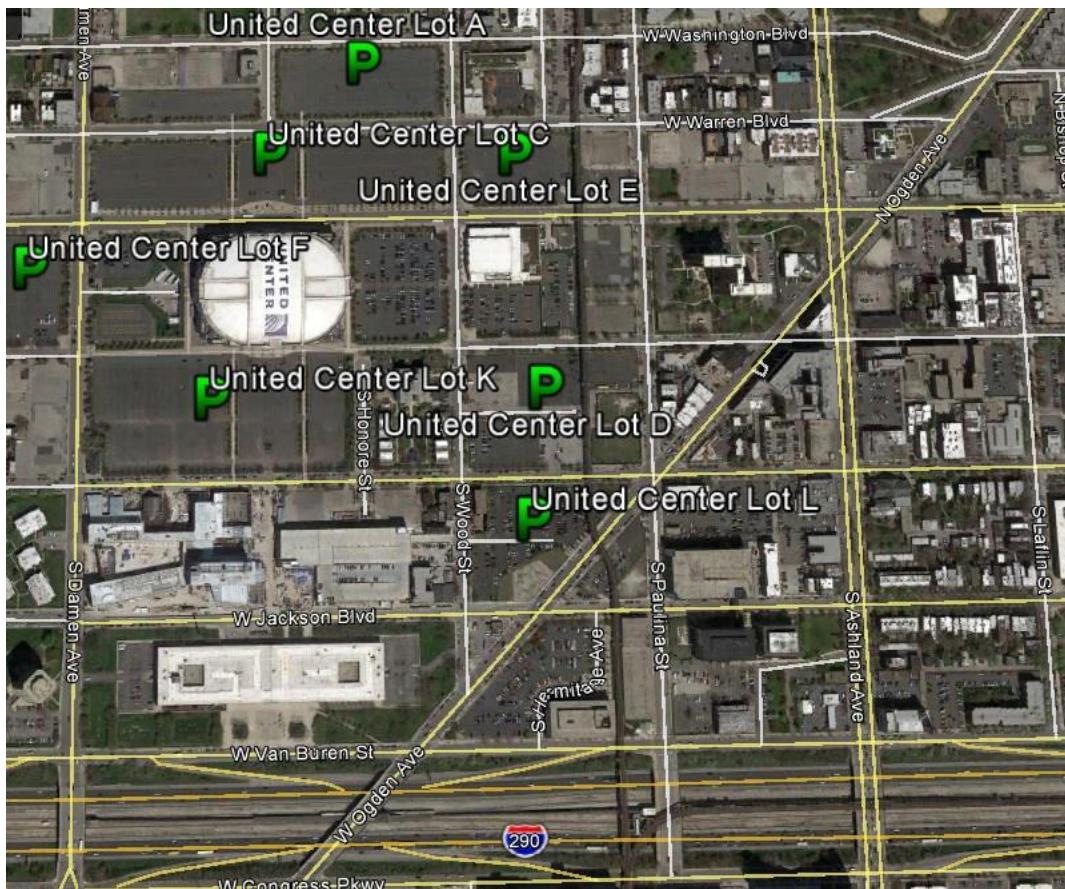


Figure 13 – O'Hare Airport Parking Facilities

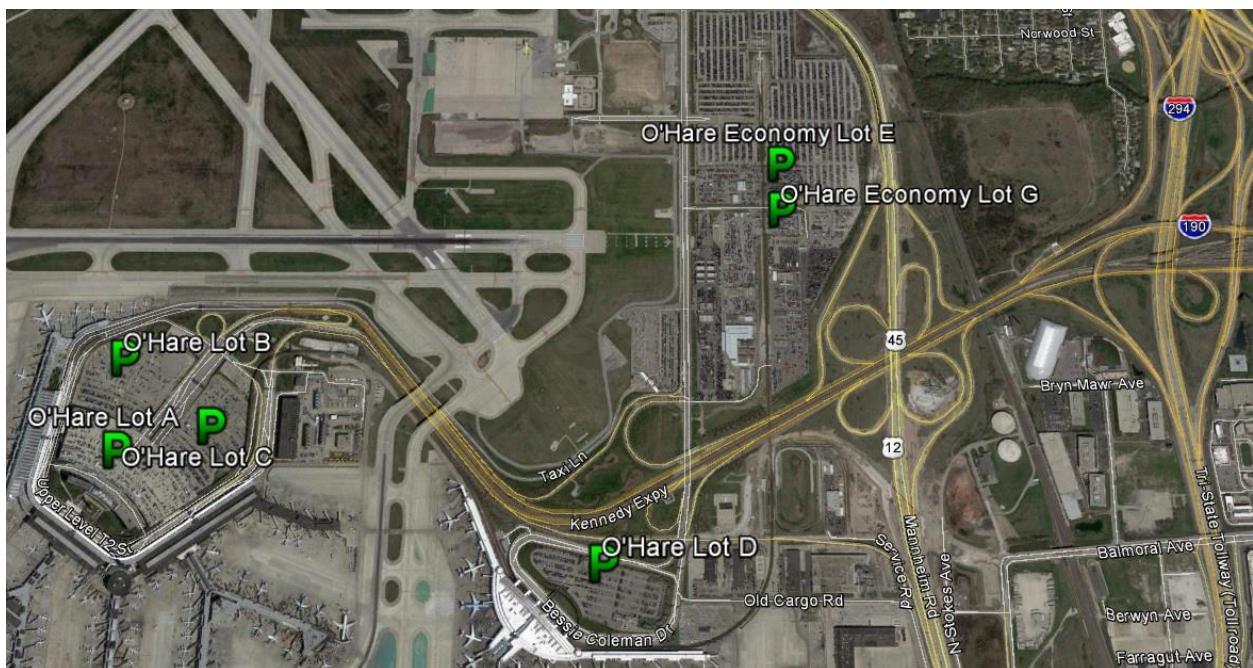
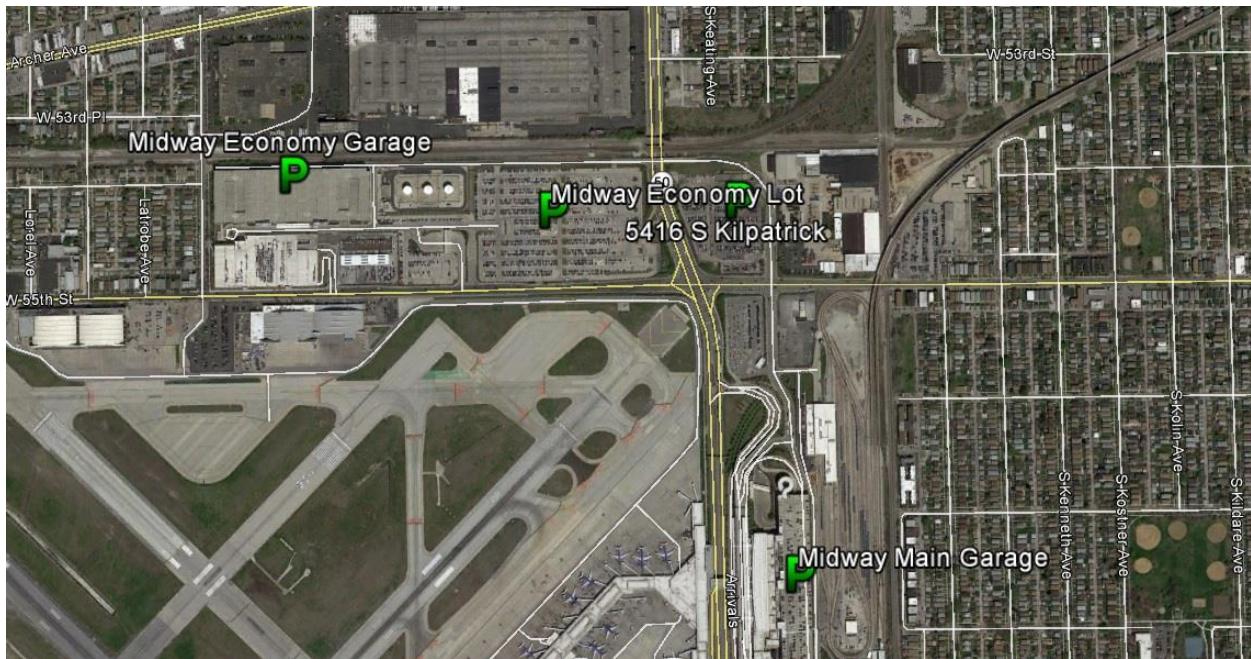


Figure 14 – Midway Airport Parking Facilities



1.5. Shuttle Service

Navy Pier Trolley

The Navy Pier free trolley currently operates on weekends and during select special events. The trolley operates between Navy Pier and State Street, traveling on westbound Grand Avenue and eastbound on Illinois Street, stopping at designated points along the route (see Figure 15 below). This service currently allows Navy Pier visitors to park remotely and take the trolley to Navy Pier. When the on-site parking facilities at Navy Pier fill up, the CSPS would divert traffic away from Navy Pier by encouraging users to park at an alternative facility and use the trolley to reach Navy Pier. With proper alternatives, motorists will be willing to park outside Navy Pier and take a trolley rather than wait upwards of 30 minutes on weekends to enter the Navy Pier parking facilities.

The CSPS will expand the trolley service operated by the Navy Pier, Inc. by purchasing additional trolleys to link the major venues and parking facilities along the Chicago downtown lakefront. Linking the venues to parking facilities along the lakefront with a trolley service will encourage motorists to park at one facility and use the trolley to travel between the venues. Currently motorists have to park by one venue; then drive to the next venue and park and so on to access the downtown lakefront venues. The drive to every venue model is adding to the congestion on the City streets and does not offer an alternative parking option to motorists wanting to visit a particular venue. The current and suggested new routing of this expanded service is shown in Figure 15.

Figure 15 – Suggested Routing for Navy Pier Trolley Expansion



The CSPS project will purchase two additional trolleys to be added to the existing trolley at Navy Pier. The three trolleys together will be able to provide a continuous service with 20 minute trolley headways servicing the parking facilities. The trolley service expansion will also include a GPS tracking feature to the new and existing trolleys and install a variable message sign at the parking facilities showing the estimated arrival time of the next trolley.

Chicago Cubs Remote Lot Shuttle

The Chicago Cubs free remote parking lot (located at 3900 N. Rockwell Street) provides a free shuttle service for all night and weekend home games. The CSPS would promote the use of this parking lot and shuttle service, especially when the parking facilities closer to Wrigley Field fill, by notifying motorists ahead of time via the website, mobile application, and variable message signs.

Chicago Bears Remote Lot Shuttle

The Chicago Bears 31st Street remote parking lot currently provides a free shuttle service for all home games. The CSPS would promote the use of this parking lot and shuttle service, especially when the parking facilities closer to Soldier Field fill, by notifying motorists ahead of time via the website, mobile application, and variable message signs. Furthermore, the CSPS project will investigate, in coordination with the CTA, expanding the current CTA bus service between the downtown train stations and Soldier Field to include a stop at the Grant Park and Millennium Park parking facilities.

1.6. System Components

The CSPS system will consist of the following system components:

- Parking facility equipment
- Application programming interface (API)
- Parking data integrator (PDI)
- Central processing system
- Variable message and static wayfinding signs
- Mobile application and CSPS website
- Communication links
- Trolley GPS and Arrival Time Indicator Signs

The following describes these components in detail.

Parking Facility Equipment and Application Programming Interface

An off street parking facility will need existing monitoring equipment and software providing near real time availability information to be included in the CSPS. The CSPS will utilize existing monitoring equipment and software at each parking facility that will be transmitted to the PDI via an API. Each facility will connect to the PDI using standard Internet connections.

On street parking facility monitoring equipment and software currently provides near real time information of the mobile payments with a location code (approximately 40% of users). The remaining transactions occur at the pay station are processed at the end of each day. The City currently has extensive historical occupancy data of on street parking within street segments. This historical data in conjunction with the near real time mobile payment data will be used to generate an on street parking availability model for updating the approximate number of available on street parking spaces in near real time, which will be available via the parking website.

Parking Data Integrator

The PDI will be responsible for all necessary coordination with the individual parking facility owners/operators to provide the system with accurate near real time information on the number of public parking spaces available at each facility. The PDI will use the data from the individual garages and on street parking vendor to update the mobile application and website and also forward the data to the CSPS central processing system.

Central Processing System

CDOT is currently executing a project to develop an Advanced Traffic Management System (ATMS). It is anticipated the CSPS project will be developed, implemented, and operated as a component of the ATMS. Current ATMS project staff (CDOT and consultants) will be responsible for integration of the CSPS into the ATMS. The ATMS will receive the available parking data from the PDI and process the parking availability information. Once processed, the ATMS will transmit parking availability information to the appropriate variable message signs via a wired or wireless connection. The process of collecting, processing, and transmitting the information will be done in near real time. The on street and off street parking availability information will also be shown via a map interface on the ATMS.

Variable Message and Static Wayfinding Signs

Full color LED variable message signs displaying off street parking availability will be placed at major entrance points to the venues. The approximate location of these signs is shown in Figures 16-22. It is anticipated under normal operation the variable message signs will be configured to be a multi panel sign. Within each panel would be the name of the specific parking facility or area, directional arrow, and number of available parking spaces. During special events, the parking information on these signs can be more event specific and direct motorists to alternate parking facilities when the primary parking facilities are at capacity. In addition to displaying parking information, the variable message signs could be used in emergency situations to display critical pieces of information.

A combination of variable and static wayfinding message signs will be placed in between the entrance point variable message signs and the parking facilities. Most common placement of these signs will be in advance of where a motorist has to make a turn or decide on a parking facility. Finally an individual static parking facility sign will be placed outside the parking facility to direct motorists into the facility. The combination of these signs will provide motorists guidance to each individual parking facility from the major entrance points.

Figure 16 – Navy Pier and Millennium/Grant Park VMS Sign Locations

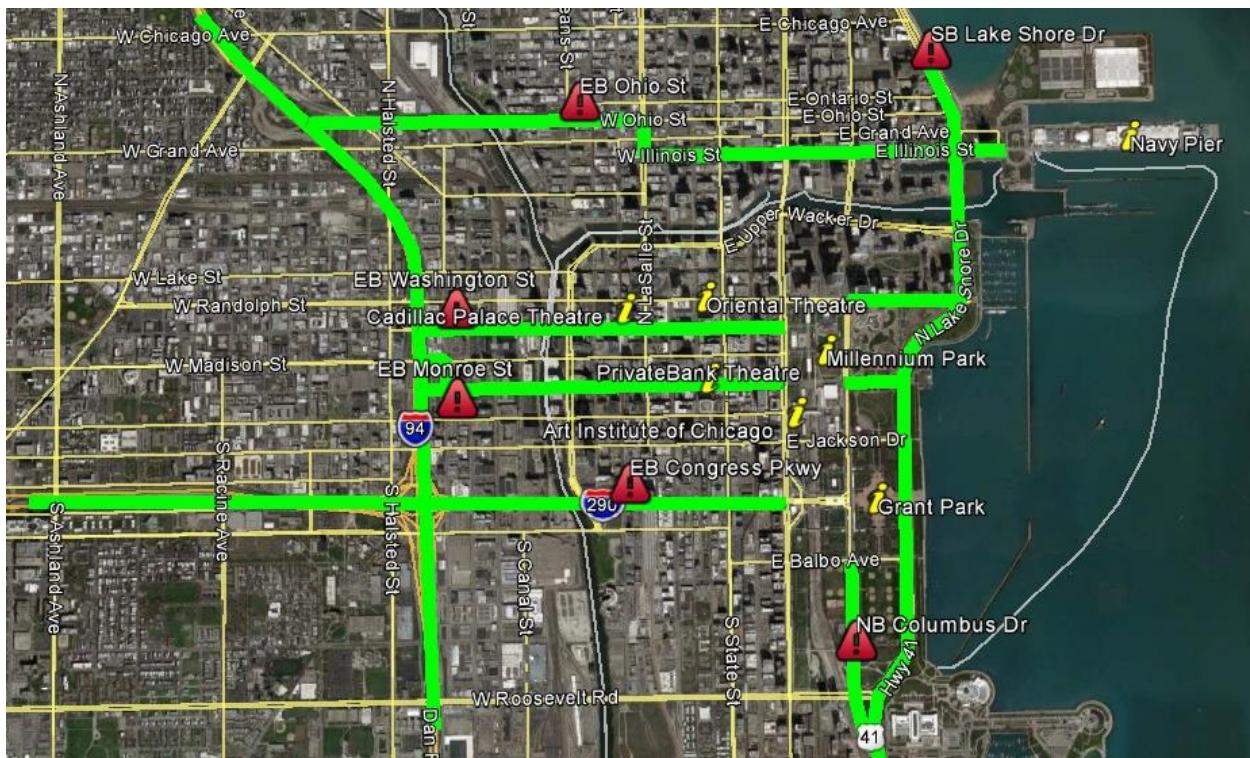


Figure 17 – Museum Campus VMS Sign Locations

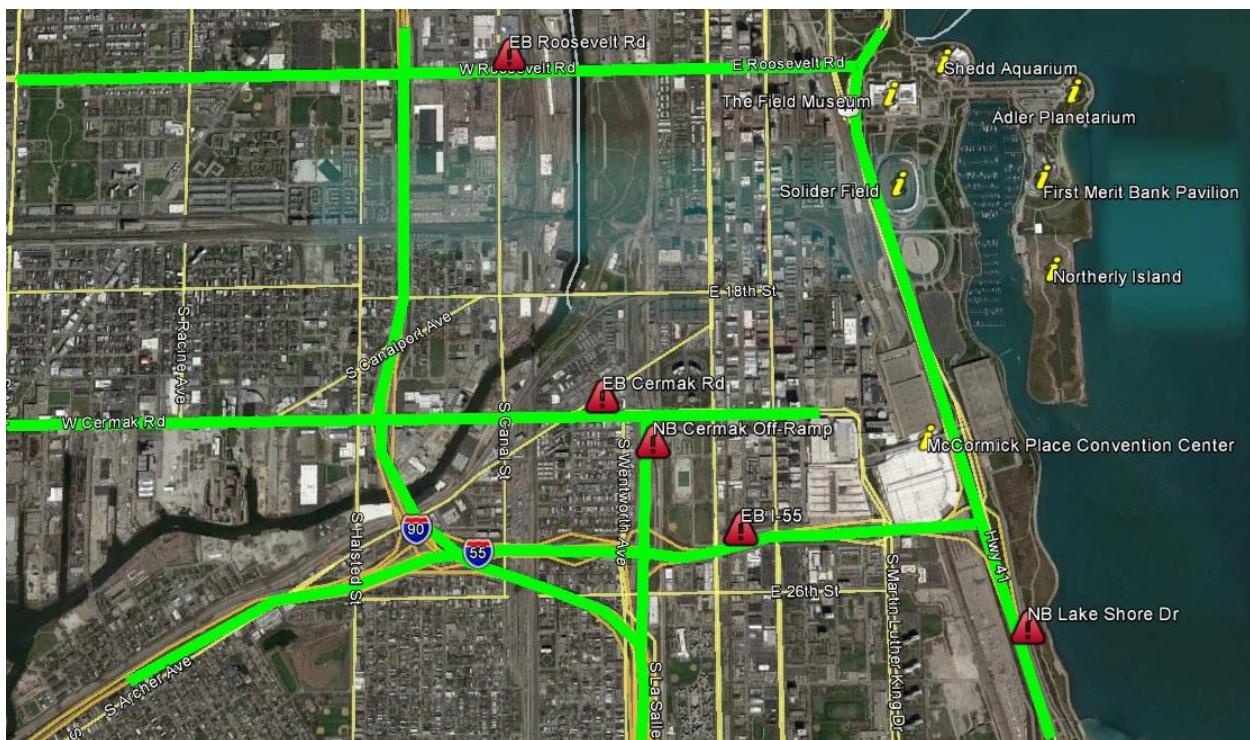


Figure 18 – Wrigley Field VMS Sign Locations

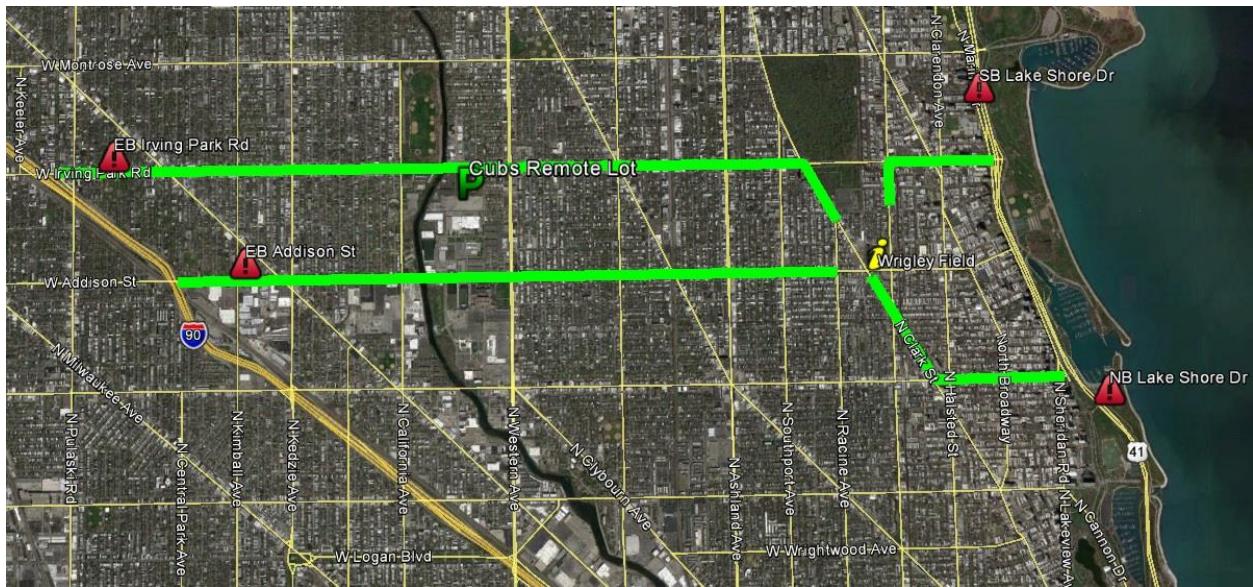


Figure 19 – US Cellular Field VMS Sign Locations

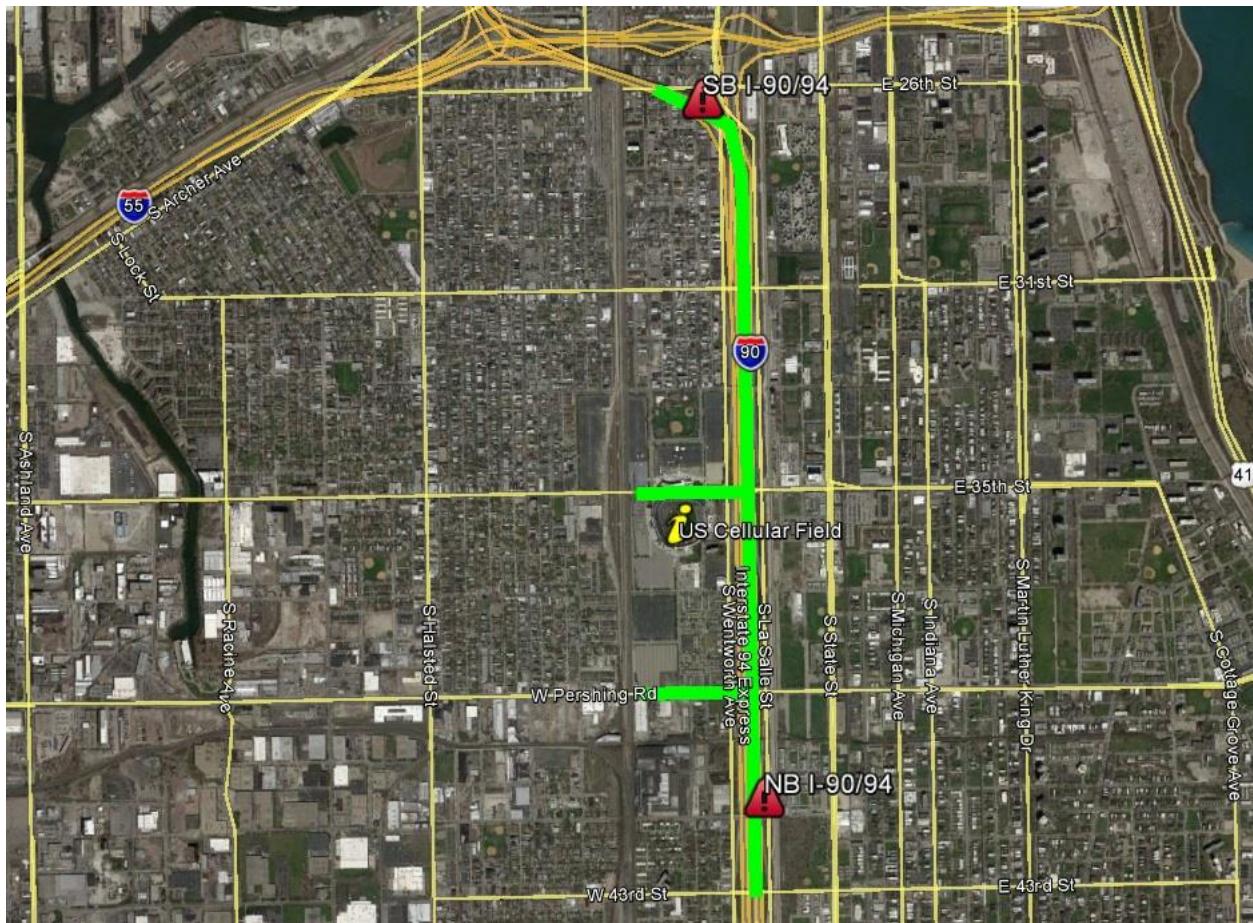


Figure 20 – United Center VMS Sign Locations

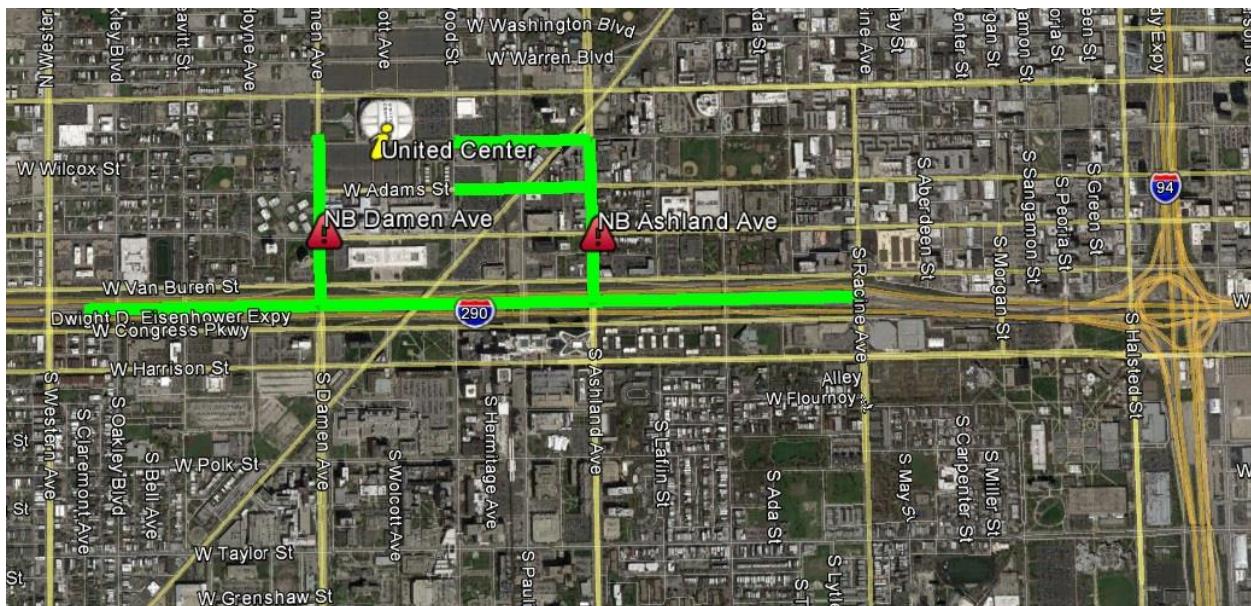


Figure 21 – O’Hare Airport VMS Sign Locations

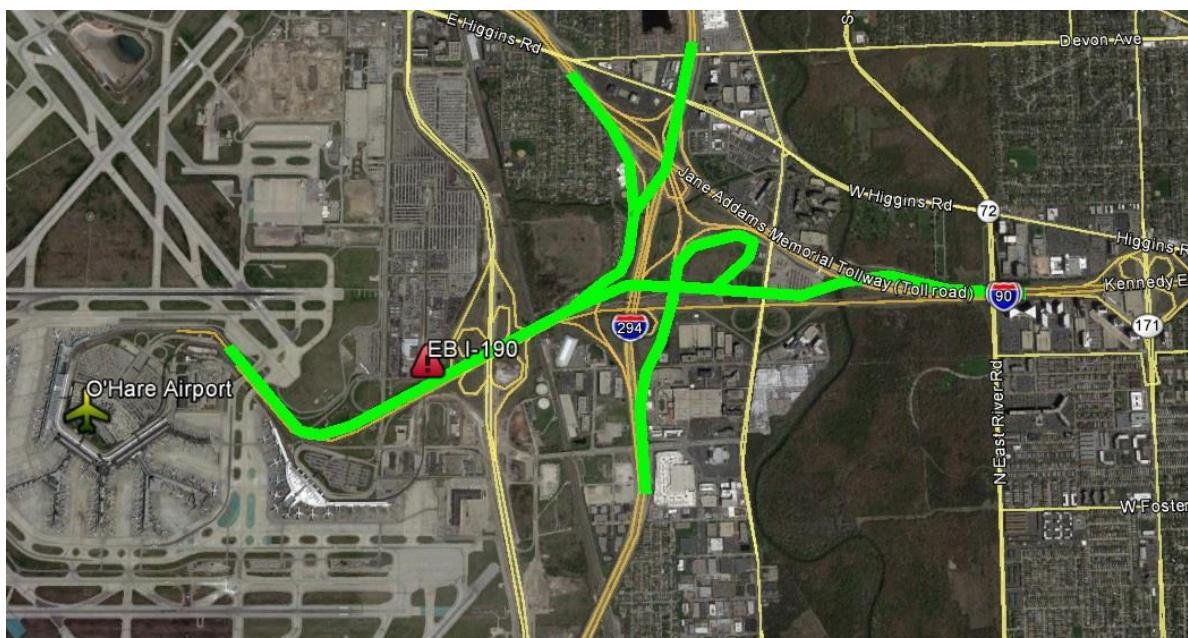
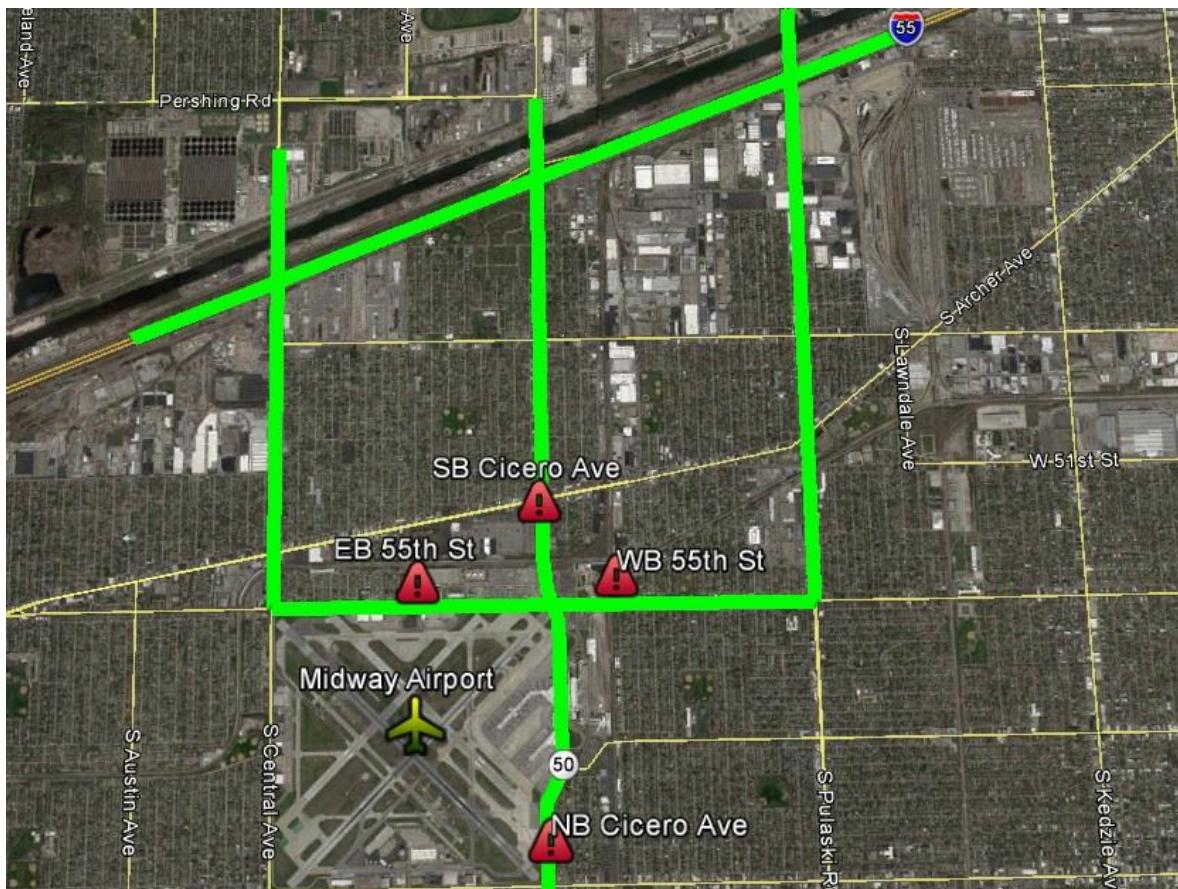


Figure 22 – Midway Airport VMS Sign Locations



Mobile Application and CSPS Website

The CSPS project will create a mobile application and website that will provide users with parking information for off-street and on-street parking facilities in the City. It is desired for the mobile application and website to provide the following features:

- Location of all on street and off street parking facilities in the City displayed on a map interface. This would include off street parking facilities that are not providing the CSPS with parking availability data.
- Ability to search for parking facilities in the area of a desired destination or address. The feature would allow users to search by neighborhood, zip code, landmark, or address.
- Details for each off street parking facility including: rate information, address, location of entrances, hours of operation and amenities at the facility.
- Parking availability information from parking facilities that are connected through the CSPS.
- Ability to reserve parking spaces in advance at off-street parking facilities.

- Likelihood of finding on street parking for each block displayed using a color coded system utilizing information on historical utilization, planned events, and real time mobile payments.
- The mobile application and website will be developed and maintained by a PDI who is experienced with similar application development.

Communication Links

The communication links will have to support the transfer of information between CSPS system components. Each off-street parking facility monitoring equipment will connect to the PDI via standard Internet connection. Variable message sign will connect to the central processing system via a wired or wireless link. A wired connection, preferably to the City's existing fiber optic network, will be the preferred option at each location. However, if making a wired connection is deemed too expensive for the project, wireless technologies will be utilized. This would include wireless radios or cellular connections or a combination of both.

1.7. System Performance Measures

CDOT will perform the following analysis/studies in-house to verify the CSPS is meeting the project goals. They are as follows:

- Perform before and after capacity and traffic volume analysis at key intersections surrounding the selected venues.
- Perform before and after crash studies for the street networks surrounding the selected venues.
- Monitor the parking occupancy at the Grant Park Parking Facility
- Perform ridership studies on the shuttle systems serving the remote parking facilities
- Perform user surveys on the usefulness of the information being provided by the CSPS.

1.8. Schedule

CDOT's desire is to have the project started July 2017 with the CSPS fully operational by September 2019. The following are preliminary project milestones:

- June 2017 – CSPS design contract executed
- September 2017 – Initial community and technical advisory committee meetings
- November 2017 – Conceptual design plans completed
- December 2018 – Second community and technical advisory committee meetings
- April 2018 – Pre final design plans completed
- May 2018 – Third community and technical advisory committee meetings

- July 2018 – Final design plans completed
- August 2018 – CSPS project advertised for construction
- December 2018 – CSPS construction contract executed
- September 2019 – CSPS fully operational, construction completed

1.9. Future Expansion

The design of the CSPS will consider the City's desire for future system expansion. Several factors will be taken into account in the design including placing communication links to allow for the inclusion of additional parking facilities, providing blank panels on wayfinding signs, and using full color LED variable message signs to allow the signs to be easily modified to add additional facilities. Potential expansion opportunities include CTA park and ride lots, North Michigan Avenue shopping district, expansion of the theatre venues in the Theatre District, and Lake Michigan beaches.

2. Staffing Description

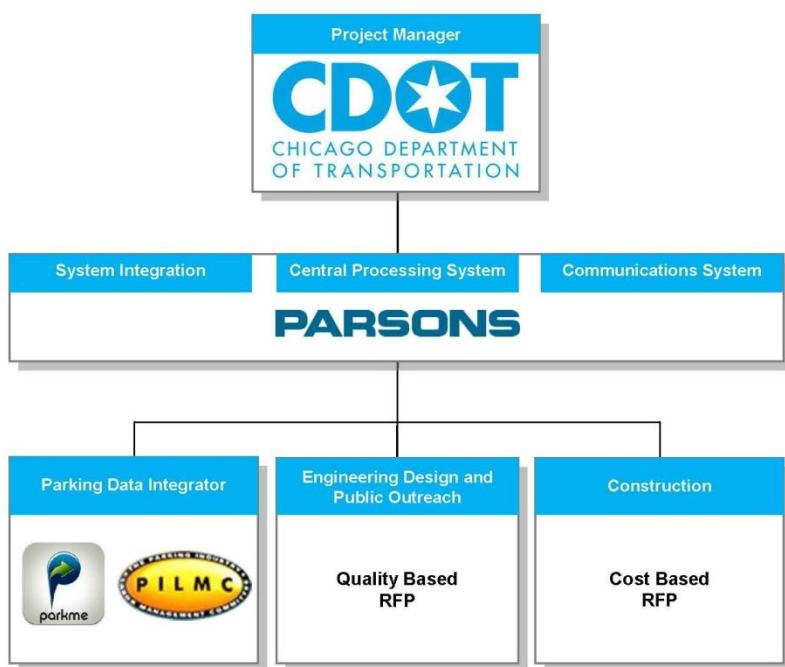
The primary point of contact for this project will be Abraham Emmanuel, Deputy Commissioner of Traffic Safety at CDOT. He is also the primary Intelligent Transportation System lead at CDOT. He currently manages the Advanced Traffic Management System implementation at CDOT. His complete contact information is provided below:

Abraham Emmanuel

Deputy Commissioner – Traffic Safety
 Chicago Department of
 Transportation 30 N. La Salle Street,
 Suite 500
 Chicago, Illinois 60602
 (312) 742-0804
Abraham.Emmanuel@cityofchicago.org

CDOT will be the lead agency for development, public outreach, implementation, operation, and ongoing maintenance of the CSPS. CDOT will also be responsible for distribution of all project funds through contracts with consultants and contractors. A project organizational chart is shown in Figure 23.

Figure 23 – CSPS Project Organizational Chart



The remaining key personnel's roles and responsibilities are described below.

CDOT is proposing ParkMe, a subsidiary of INRIX Corporation, as the PDI: www.ParkMe.com. A third party PDI is proposed due to the complex nature of integrating with multiple vendors and technologies. ParkMe has been providing integration services for several years. ParkMe has built the world's most comprehensive parking database, including

more than 31 million spaces in over 90,000 worldwide locations, over 3,200 cities, 64 countries and seven continents. By utilizing ParkMe as the PDI, most of the cost and effort in connecting with individual garage operators can be kept outside the development effort to build the CSPS. ParkMe will collect the near real time parking availability information and share it with the City; develop a white labeled Mobile App, a City of Chicago Parking website, and develop an inventory of on street and off street parking spots for the City. This approach will also spare City from entering into individual interagency agreements with private parking facility owner/operators. All of this effort will rest with a vendor who has the experience to enter into such agreements and managing the electronic interface. ParkMe has offered to provide the data collection interface free of charge to City.

CDOT is also interested in working with third party organizations like PLIMC which is the associations of parking garage operators in Chicago: <http://chicagoparkingmap.com/>. They are currently working with their member garages to develop a parking data integration service.

CDOT is proposing Parsons for all system integration and management tasks. CDOT is currently contracted with Parsons to develop an ATMS and provide overall ITS program support. Parsons will develop the Central Processing System for the data provided by the PDI and integrate this system into the ATMS. This will include development of a communications system to tie all the system components together. They will also be responsible for the development of the trolley tracking system. Parsons is one of the largest transportation planning, engineering, and construction firms in the world. Parsons has combined cutting-edge and forward thinking

technology to improve the ways people connect with the world. Through their employees and processes, they help their customers embrace the leading edge of engineering, technology, and innovation.

CDOT will issue a qualifications based Request for Proposal (RFP) for all engineering design work. This work will include design of the VMS and static signs, physical communication components, and assistance with public outreach. CDOT will issue a cost based RFP for all construction work.

3. Funding Description

Project Cost Estimate

The following table details the major design and construction elements for the CSPS.

Item	Unit Cost	Units	Cost
Full Color LED VMS Installation	\$200,000	24	\$4,800,000
Static Wayfinding Sign Installation	\$5,000	30	\$150,000
Parking Entrance Sign Installation	\$750	75	\$56,250
Central Processing System	\$580,000	1	\$580,000
System Integration	\$340,000	1	\$340,000
Trolley Tracking System	\$220,000	1	\$220,000
Parking Data Integrator (PDI)	\$1,000,000	1	\$1,000,000
Engineering Design	\$1,000,000	1	\$1,000,000
Communications	\$1,500,000	1	\$1,500,000
Trolley Vehicle	\$200,000	2	\$400,000
Public Outreach	\$200,000	1	\$200,000
Total Project Cost			\$10,250,000

50% of the total project cost (\$5,125,000) will be funded through the ATCMTD grant and the remaining project cost (\$5,125,000) will be funded locally through State Only Chicago Commitment (SOCC) funds.

Funding Sources

The City has approved the allocation of the SOCC funds it receives from the Illinois Department of Transportation on an annual basis in order to provide the necessary local match for the CSPS project. Annually, the City receives \$40,000,000 in SOCC funding for use as match to federal funds and for improvements benefiting the State's system. The City has enough of the SOCC funds available to cover the local match for this project for the next four years.