CITY OF LINCOLN

TRAFFIC MANAGEMENT MASTER PLAN

TRAFFIC ENGINEERING | 949 W BOND ST

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Preface

This is a Plan to improve the Traffic Management Systems in the City of Lincoln, NE. By the time you read this Plan, it is already outdated. Through the continuous, diligent work of dedicated staff, much of the data and work flow included in this document has already been further improved. Things impacting Traffic Engineering change quickly – weekly, daily, and minute by minute. Change is inevitable. Thus, much more the reason to take pause in the daily chaos and document resources necessary to sustain these important assets and functions. Assets and functions that help move all modes of traffic in the City of Lincoln.

In the past 24 months, our team has completed self-assessment and asset management inventory work. This has led to changes in how we do business, how we use technology, and what we know about our systems, staff, and processes. We are different. We are poised for the implementation of vast improvements City wide. With your support, in another 24 months we will again be fundamentally different. We will be better. The Citizens of Lincoln will reap the benefits. Travel will be safer and more efficient. With your support, we will move all modes of traffic as good or better than any agency in the nation.

- Lonnie Burklund, PE, PTOE
November, 2015

Executive Summary

The City of Lincoln strives to provide a transportation system that has superior operational and safety characteristics for our citizens and visitors to the Capitol City. Our transportation network has several components that must work together to provide this desired level of service, thus the continued planning, design, construction, and maintenance of these assets is vital. One such primary asset often at the forefront of public scrutiny is the City's traffic signal system. While this system has many parts that are visible to the daily commuters (poles, mast arms, red-yellow-green signals, etc.), there are several items that are not as visible. These include the complex system of central software, controller hardware, cabinets with electronic components, vehicle sensors, pedestrian detectors, cameras, and a maze of underground conduit for fiber optic communications. These crucial parts make up a portion of the overall Intelligent Transportation System (ITS) and work together in an effort to safely move all modes of traffic through City streets and intersections.

The Traffic Operations Division of the Public Works Department is responsible for the planning, design, operation, and maintenance of the City's 430-plus traffic signal system including over 150 miles of communications lines that support all city wide Departments and public facilities. While Traffic Operations staff conducts many other important functions, the content of this master plan is focused primarily on the traffic signal and ITS components, and the need to improve and enhance its infrastructure, operational function, staffing, and response.

Asset Management is a key component of any complex system. By vastly improving upon the data access, knowledge, and condition status of these systems in 2014-2015, Traffic Operations has revamped maintenance programs and workflow. More is known about the system components and communications network (both historical and new items) than ever before. Information sharing via web-based GIS tools, field techs logging work and system updates on mobile tablets, and efficiencies in troubleshooting via automated notifications – are all items that have improved with a focus on asset management.

With the enhancements of diligent asset management comes the benefit of real, accurate, self-assessment. The power of self-assessment with any system or program is learning about, and measuring performance. Often times this "look in the mirror" yields positive results and outcomes, and sometimes a closer examination can provide great opportunity for improvement. The goal of this Traffic Management Master Plan is to document both, and provide a path to overcome the challenges.

Many of the identified challenges with the existing system appear daunting. Change is needed. A refreshed focus into the operations of the traffic system by the Public Works Department is already occurring. With proper evaluation, planning, and phased implementation of improvements, significant benefits can be realized. With a focused plan, change is not intimidating, change is good.

Despite robust maintenance efforts, many system components are becoming outdated. Similar to transportation facilities across the nation, the challenge of replacing vital hardware has not kept pace with local needs. As described in later sections, the traffic signal rehabilitation program is in need of a boost. Additionally, software and operational requirements are not on par with modern changes in the industry. Agencies are deploying high-tech, IP-based systems that allow maximum flexibility in the proactive management of traffic. New technologies allow for enhanced monitoring, modified signal phasing, and improved traffic flow that the public demands.

The City's current central signal system software that communicates with all signalized intersections city wide to deploy signal timing information, has not been updated in over 16 years. It was implemented in 1999 and is no longer supported by the manufacturer, it is no longer supported by the vendor, and is no longer compatible with recent upgrades to the city wide computer operating systems. The software is not compatible with a newer platform than WindowsXP. Can you recall the computer you utilized in 1999, the software, the operating system, or what type of mobile phone you had?

Additionally, once prominent vehicle detection systems are declining – a primary reason for the majority of logged complaints and signal operational calls from the motoring public (daily/weekly). Aging hardwire loops in the pavement are damaged from continuous environmental exposure, paving rehab needs, and degraded wiring within saw-cut pavement installations. Older model detection cameras (beyond 15 years old) are reaching end of life and do not include newer technology and robust components. Based upon recent data, over 30% of all detection city wide is faulty – making signal timing adjustments and safe operations even more challenging with limited staff and resources.

These are just a few of the issues that result in the need for a fresh approach, a revised and formal plan to improve traffic operations in the City of Lincoln. Continued transportation funding gaps, correct staffing allocation to adequately manage the system, and improved response to citizen needs are also apparent. The city continues to grow and expand – both in population and land area, resulting in additional intersections and traffic management issues for commuters.

To combat this less-than-favorable information, there is also GOOD NEWS! The City of Lincoln has done a fantastic job over recent years in expanding and leveraging its communications system infrastructure. Typically, for most agencies needing to do major system upgrades, the costs of new conduits and fiber can be the single largest cost (impediment) to funding improvements in the traffic system – often tens of millions of dollars alone. Traffic Operations has been working in concert with the Broadband Infrastructure initiatives to install, maintain and modernize dozens of miles of new fiber optic connections. Working cooperatively with private entities and installing infrastructure as part of CIP projects has resulted in an expansive and redundant communications network that is continuing to be well built out and geared towards the future! In short, the city can focus more of its traffic engineering resource needs on staff, software, and other hardware that will result in benefits to motorists.

In addition, a primary focus of needed upgrades to the system will allow for the implementation of new signal phasing, and new optimized signal timing plans on major arterials city wide. These signal optimization projects typically result in enormous benefit/cost ratios – minimum of 15:1 to 20:1 for improved corridors, and up to 40:1 when other minor improvements are included. Utilizing these performance metrics and the average cost of signal retiming projects at $3,500 per intersection, it is quick to realize the public benefit for a system the size of Lincoln's:

(430 traffic signals x $3.5K per intersection = cost of $1.5M)

(At a B/C of 15:1; yields over $22M in benefit)

Just a few of the benefits to the motoring public include:

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"OUR HOME, OUR FUTURE, OUR CHOICE"

- Reduced delays and stops
- Smooth commutes & less driver frustration
- Reduced emissions and pollutants
- Fuel savings
- Travel time savings for public, transit, and emergency vehicles
- Improved safety performance, reduced crashes
- Postpone or eliminate the need for costly road capacity construction

The Federal Highway Administration (FHWA) estimates that over 75% of all traffic signals can easily be improved through the updating of equipment and adjusting signal timing. This includes not only operational benefits, but overall enhanced safety amongst an agency's major arterials.

Furthermore, expenditures on technology driven components of the system upgrades also tend to provide a high return on investment for the greater population of the entire city when compared to

major capacity projects. Often times the cost of these lower hanging fruit improvements can vastly improve the performance of roadways beyond the "dirt, pipe, and concrete" infrastructure. As an example, utilizing present day construction costs – for the same amount of money we can either:

- Pave ¼ mile (3 blocks) of a new arterial roadway somewhere in the City of Lincoln

Or, we can….

- Implement new signal system software and controllers at ALL 430 traffic signals Citywide

For the cost of building another 3 blocks of urban arterial road, we could fix ALL vehicle detection Citywide with modern equipment – enhancing traffic flow, and eliminating citizen complaints regarding such. While there is much work to be done to modernize the system, there is documented value in enhancing capacity of current roadways, versus the high costs of additional lanes of paving and the follow up required maintenance of such.

The Traffic Management Master Plan identifies several areas for evaluation and proposed enhancements. A few of the primary system needs include:

- Advanced Traffic Management System (ATMS) hardware and software
- Location and functionality of the Public Works Operations Center (PWOC)
- Vehicle detection
- Signal phasing alternatives
- Signal optimization program
- ITS field devices - CCTV cams for system monitoring
- Arterial dynamic message signs (DMS)
- Communications systems
- Traveler information to the public
- Pedestrian and bicyclist safety
- Signal rehabilitation
- Traffic system management (staffing)
- Operations and maintenance activities

It is important to note that on an annual and on-going basis, subtle upgrades to the system are continually being implemented – either through CIP arterial roadway projects where signalized intersections are included within these limits, or as part of smaller project upgrades and stand-alone signal equipment replacement projects. There are also incidents (too frequently) each year that require emergency repairs due to equipment failures or vehicular crash damage at intersections – signal cabinets run over, poles hit etc. In these instances, new equipment that is consistent with the future (pending budget limitations) is deployed such that future needs at those intersections are being addressed ahead of time.

Other on-going maintenance work includes the replacement of signal bulbs (from incandescent to more energy-efficient LED bulbs), installation of countdown pedestrian signal indications, and improved push-button detectors. During annual cabinet maintenance activities, other components are upgraded as needed including signal conflict monitors and communications equipment. Many of these smaller interim projects help extend the life of intersection equipment.

The following list summarizes *key* recommendations identified in this master plan. Sections 4 and 5 of the master plan provide additional detail and cost/benefit information for these improvements that will alleviate public frustration and improve response to citizens.

ATMS Hardware and Software

- Procure and integrate a modern ATMS software to operate, monitor, manage, and maintain traffic signals and ITS field devices.
- Replace all existing traffic signal controllers with advanced traffic controller (ATC) protocol that are NTCIP compliant with appropriate local controller software in the field.
- Upgrade necessary traffic signal cabinets to TS2, Type I minimum standard that allows for compatibility with future detection needs and IP communications infrastructure.
- Implement operational hardware and software in the PWOC for management of the system.

Vehicle Detection and Signal Phasing

- Upgrade vehicle detection at existing faulty locations citywide with a mix of non-intrusive detectors (cameras and/or microwave radar) and preformed loops under pavement as needed.
- Continue annual replacement and conversion of mainline corridor detection to cameras for stop bar detection, and enable viewing of intersection approaches with the camera management software.

Signal Optimization Program

- Implement cyclical signal optimization program enabling primary arterials to be retimed every 3-5 years.
- Evaluate and install updated signal phasing hardware (Flashing Yellow Arrow) at all required protected/permitted left-turn locations.
- Develop City of Lincoln standard traffic signal optimization guidelines for internal and consultant staff use on signal timing projects.
- Continue deploying emergency vehicle preemption (EVP) systems per available funding in place with various public safety agencies.

- Coordinate with StarTran to facilitate evaluation of transit signal priority (TSP), bus rapid transit (BRT), or other transit projects as needed.

Intelligent Transportation System (ITS) Devices

- Deploy closed-circuit television (CCTV) cameras with pan-tilt-zoom (PTZ) capabilities across the city at the intersections of arterial roadways, as well as other locations as needed to monitor traffic performance and incidents.
- Deploy arterial DMS and trailblazer signs on primary routes for incident management, special events, congestion management, and travel time information.
- Deploy additional system sensors (microwave radar and Bluetooth/Wi-Fi) as needed for automated travel time collection and performance measurement.

Communications System

- Continue construction of the redundant, self-healing gigabit Ethernet fiber optic network.
- Implement wireless communications to signals not located on arterial roadways.
- Establish internet protocol (IP) based communications on the network to all devices.

Traveler and Public Information

- Install kiosks or other traffic-related information displays at City Hall or other high-activity areas to display important traffic/travel condition information for daily and event traffic.
- Explore software that integrates a future parking management and information system with the proposed central traffic signal management system software.
- Evaluate methods to quickly disseminate emergency traffic information via the City's website, social media, and other apps.

Pedestrian & Bicycle Safety

- Continue the evaluation of pedestrian signals at key crossing locations – implement rectangular rapid flashing beacons (RRFB).
- Implement necessary system detection for bicycle facilities (cycle tracks, bike lanes) to monitor efficiency and operations.
- Develop additional public information regarding ped/bike safety programs and planned facilities.

Traffic Signal Rehabilitation

- Program annual replacements of aging traffic signal infrastructure based on structure lifespan and on-going inspection results, and remove unwarranted signals.
- Look to implement roundabout intersection control at existing traffic signal locations as relevant for traffic and environmental conditions.
- Continue non-destructive testing of structures and signal pole inspection program.

Traffic System Management

- Program additional staff to provide one PWOC operator to monitor the traffic signal system and related devices from 6 am to 9 am and 3 pm to 6 pm, Monday through Friday, at a minimum.
- Program additional traffic engineering and technician staff to adequately manage the system.
- Continue to dedicate staff for evaluation of existing timing settings to ensure that they adhere to the latest Manual on Uniform Traffic Control Devices (MUTCD) and industry best practices.
- Optimize traffic signal coordination plans, at a minimum, every 3 to 5 years based on traffic volume and pattern fluctuations.
- Determine the feasibility and/or benefits of installing an adaptive or responsive system on corridors with closely-spaced signals and fluctuating, unpredictable traffic volumes.
- Develop, implement, monitor, and revise timing plans as necessary to accommodate special event traffic around major traffic-generating facilities.
- Staff adequately to respond to public inquiries with technical expertise in a timely fashion.

Maintenance

- Program additional staff positions to properly maintain the communications network and additional ITS devices deployed in the field.
- Continue to perform general traffic signal maintenance using internal maintenance staff, including fiber optic cable repairs.
- Continue to develop and implement a comprehensive and regular preventative maintenance program.
- Provide training for maintenance and operations staff to adequately maintain the traffic signal system.

By implementing the above recommendations, and continuing to proactively plan, fund, operate, and maintain a growing traffic management system, we will provide the citizens of Lincoln with a vastly improved travel experience. Many of the pieces are coming together. With additional support, the safe and efficient movement of all modes of traffic will result in sustainability of the transportation network and improved quality of life. The Public demands our program, and they deserve a better one. The future is bright. Are you ready?

“Change is the law of life. And those who look only to the past or present are certain to miss the future”

- *John F. Kennedy*

Document Version Control

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Document Authors

Traffic Engineering Team

Table of Contents

LIST OF FIGURES:

LIST OF TABLES:

APPENDICES:

“Although no one can go back and make a brand new start, anyone can start from now and make a brand new ending”

- *Carl Bard*

1.0 Introduction

The City of Lincoln strives to provide a transportation system that has superior operational and safety characteristics for our citizens and visitors to the Capitol City. Our transportation network has several components that must work together to provide this desired level of service, thus the continued planning, design, construction, and maintenance of these assets is vital. One such primary asset often at the forefront of public scrutiny is the City's traffic signal system. While this system has many parts that are visible to the daily commuters (poles, mast arms, red-yellow-green signals, etc.), there are several items that are not as visible. These include the complex system of central software, controller hardware, cabinets with electronic components, vehicle sensors, pedestrian detectors, cameras, and a maze of underground conduit for fiber optic communications. These crucial parts work together in an effort to:

- Safely assign vehicle right of way through a busy intersection
- Efficiently progress all traffic through a series of intersections to minimize congestion
- Allow pedestrians and bicyclists to safely traverse busy streets
- Improve the flow of commercial traffic and emergency response vehicles

In the City of Lincoln, the Traffic Engineering team within the Public Works Department is responsible for the planning, design, operation, and maintenance of the City's over 430 traffic signals. In addition, a network of over 60 CCTV cameras, 50 portable and permanent dynamic message signs, and over 150 miles of signal/communications conduit infrastructure is operated on a daily basis.

Due to the current age, condition, and capabilities of this system in a constantly changing environment, this Traffic Management Master Plan has been developed to:

- Provide a baseline of current conditions and existing system operations
- Evaluate and summarize opportunities to improve the system and service to the public
- Prioritize the system needs and develop a phased implementation strategy

The goal of this Traffic Management Master Plan is to document the improvements necessary to deploy a modern system that provides value, sustainability, and improved quality of life, for the Citizens of Lincoln.

The City of Lincoln currently operates a traffic signal system that utilizes controllers and management software that was largely developed in the 1980s and early 90s. The system communicates via a network of underground and overhead copper, multi-mode and single mode fiber media, and wireless radios. Major expansions in the fiber communications infrastructure have fortunately helped this costly component of the overall system keep pace in terms of communications. There are however, on-going communications issues to critical field locations that mandate continued maintenance and after-hours service call outs. Other components of the system have become, or are becoming obsolete, increasingly difficult to obtain, and functionally outdated in terms of their operation, user access, and notification.

In addition, the central software installed on computers at the Municipal Service Center (MSC) is no longer supported by the manufacturer or by the software vendor. This is also the case with local controller software running in the field at all signal locations throughout the City. An additional complication is that this current software will not operate on a platform newer than Windows XP operating system. The City has recently upgraded all computers and servers away from this operating system, as Microsoft no longer supports WindowsXP. In short, the system is functionally obsolete for many of the traffic management needs of a large and growing metropolitan area.

The Traffic Engineering team has been documenting many of these needed system improvements through self-assessment work over the last several months. This master plan will address major system components including traffic signal system hardware and software, operations center capabilities, continued communications infrastructure improvements, and the ability to phase upgrades in systems and staffing that are manageable. This plan will also address the relevant intelligent transportation systems (ITS) field devices including cameras, traffic sensors, and arterial dynamic message signs (DMS), data sharing among key stakeholders, and providing key information to the traveling public. The system will also need to be scalable and expandable to meet future system needs. The goal of this project is to document the improvements necessary to deploy a modern system that provides value, sustainability, and improved quality of life for the Citizens of Lincoln.

The remaining sections in this master plan address the Existing System Evaluation, Needs Assessment, Future System Improvement Strategies, and Implementation.

“You cannot escape the responsibility of tomorrow,

by evading it today”

- *Abraham Lincoln*

2.0 Existing System Evaluation

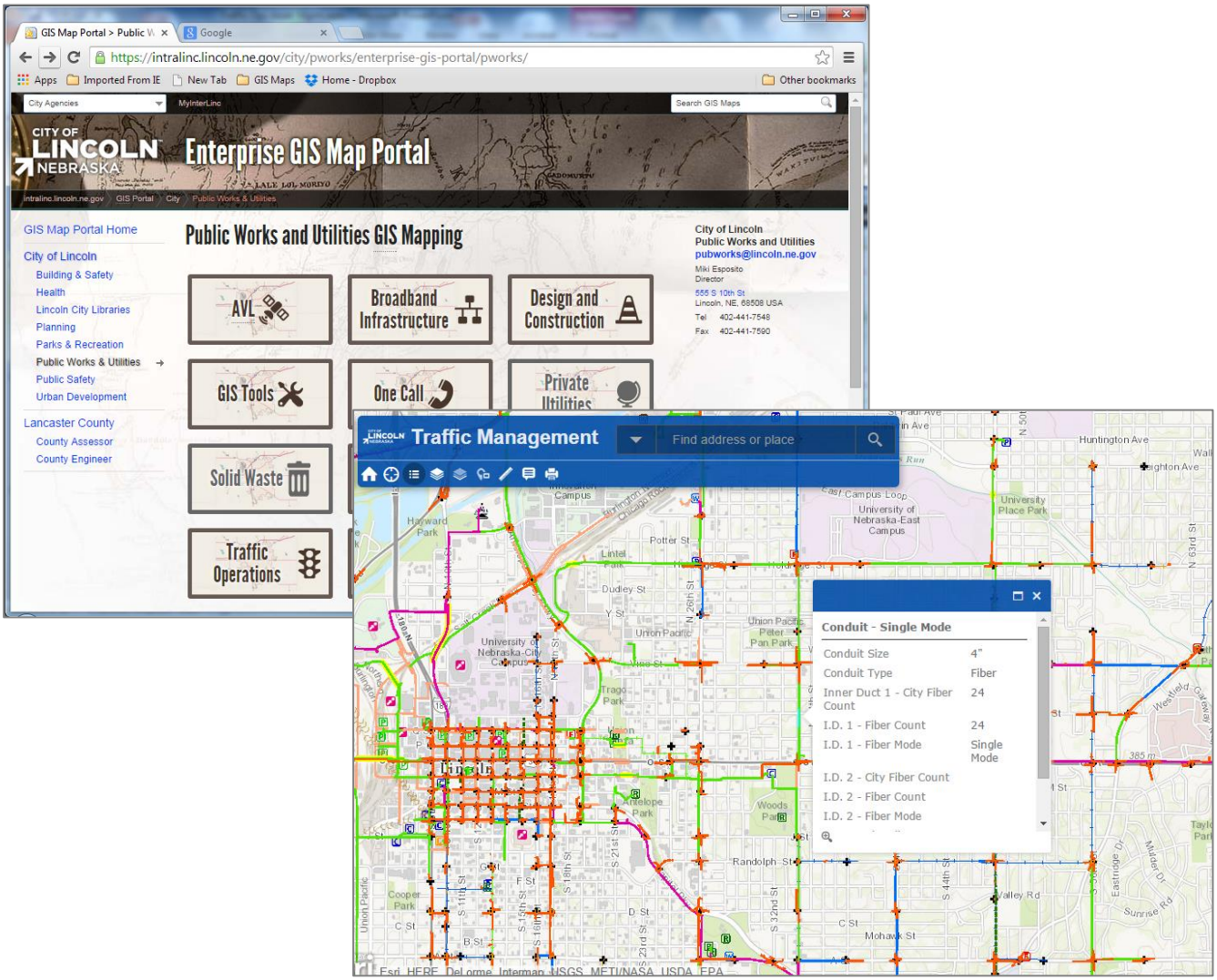
In order to properly conduct any system evaluation, detailed knowledge of the existing conditions is required. There are many components to the various traffic management system assets – multiple types of equipment, products, technical specifications, and annual purchase contracts for infrastructure, in addition to annual maintenance logs, and work orders. As such, getting a pulse of these current system components – age, condition, compatibility, and operational characteristics, reveals information about the overall system health.

A major effort was undertaken in 2014 to improve upon the records and asset management of this system information. What started as a plethora of hard copy data and unknowns in folders and cardboard boxes, was updated into a fully electronic, GIS mapping and database effort, with web-based tools to store all valuable information.

Asset Management is a key component of any complex system. By vastly improving upon the data access, knowledge, and condition status of these systems in 2014-2015, the Traffic team has revamped maintenance programs and workflow. More is known about the system components and communications network (both historical and new items) than ever before. Information sharing via web-based GIS tools, field techs logging work and system updates on mobile tablets, and efficiencies in troubleshooting via automated notifications – are all items that have improved with a focus on this asset management.

With the enhancements of diligent asset management comes the benefit of real, accurate, self-assessment. The power of self-assessment with any system or program is learning about, and measuring performance. Often times this "look in the mirror" yields positive results and outcomes, and sometimes a closer examination can provide great opportunity for improvement.

With the massive amounts of data now at our fingertips, and easy to find and navigate, more and more is known about the systems daily. Every traffic signal pole, every cabinet, every pull box and underground piece of conduit, every fiber optic cable – where it runs, where it is spliced and which facility it serves, is now all known. Every vehicle detector loop, every camera, every signal and flashing beacon is now mapped, with database characteristics through the Map Portal. And more importantly, new data is added almost daily, and locations of facilities can be corrected on the fly through the One-Call Locate process, and field staff outfitted with mobile tablets. This further improves the reduction of utility hits, and costly emergency repairs. The sections that follow summarize many of the existing assets. In addition, an asset management inventory is included in Appendix A.



2.1 Traffic Signal System Hardware

Several of the specific traffic signal system components were documented and evaluated as part of reviewing the existing system. While there are dozens of key hardware items, the priority components are summarized in the subsections that follow.

2.1.1 Traffic Signals

The City of Lincoln currently owns and operates approximately 430 traffic signals. The Nebraska Department of Roads (NDOR) currently owns and operates 5 traffic signals, in and around the city.

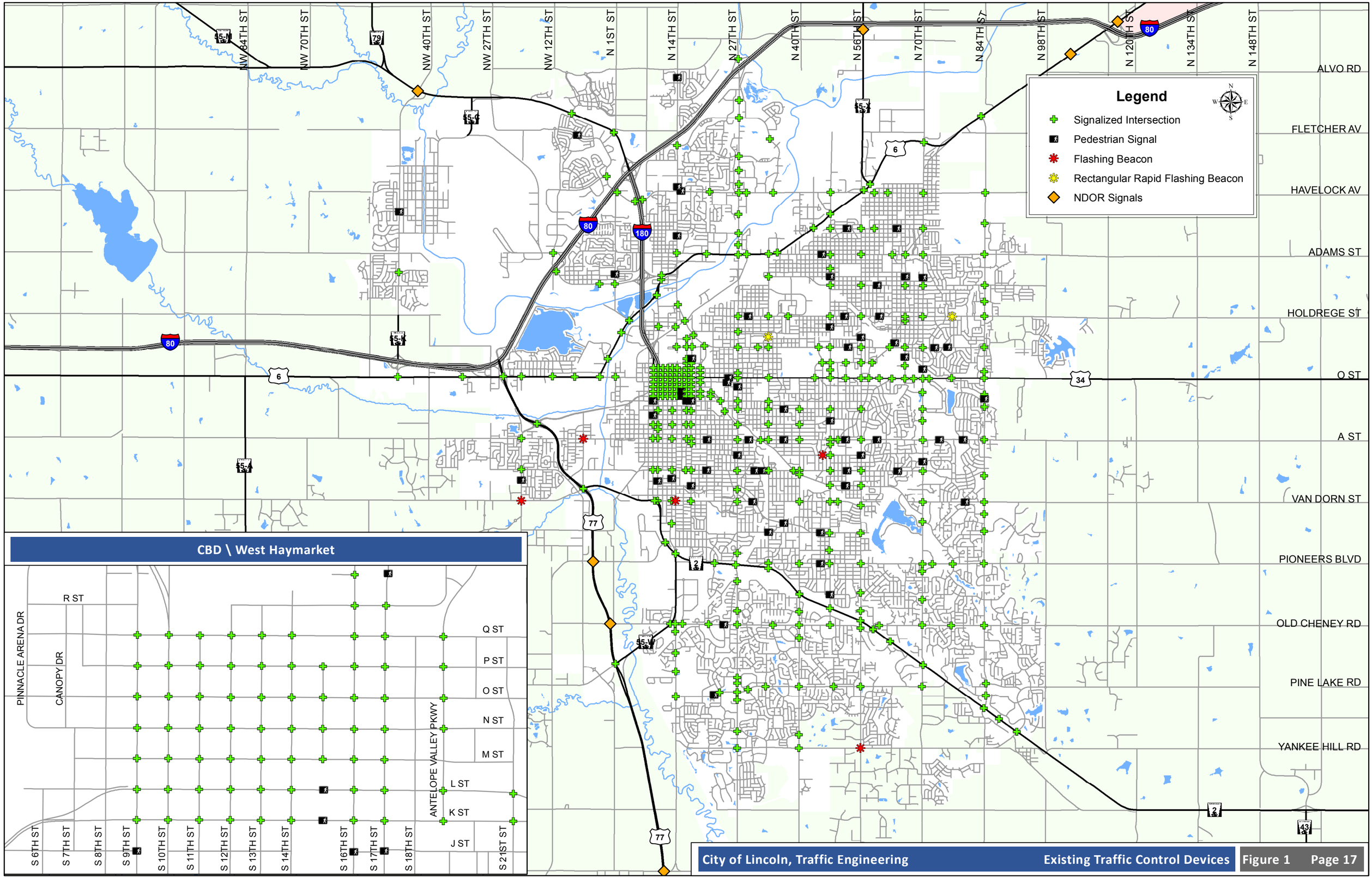
Table 1 summarizes the number of traffic signals by type, including full vehicle installations, pedestrian installations, rectangular rapid flashing beacon (RRFB) locations, and other flashing beacon facilities.

TABLE 1 – TRAFFIC SIGNAL TYPES

Type of Installation	Number
Vehicle Signals	350
Pedestrian Signals	66
Flashing Beacons	14
RRFB Locations	2
TOTAL	**432**

*Note: Currently 71 intersections are still span wire construction.

Additional signals are expected to be constructed and/or activated during the 2015/2016 construction season. Some of these projects will be upgrades to existing signals. Figure 1 illustrates the type and location of all existing traffic control devices.


NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST
ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD
Legend
Signalized Intersection
Pedestrian Signal
Flashing Beacon
Rectangular Rapid Flashing Beacon
NDOR Signals
CBD \ West Haymarket
R ST
Q ST
P ST
O ST
N ST
M ST
L ST
K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST

2.1.2 Signal Controllers

Current traffic signal controllers in the field are Eagle EPAC models, operating on SEPAC local software. The city currently uses 3 different chassis with a variety of different versions of this software. As an example the "M52" controller model has up to 4 software versions, all with subtle differences and capabilities. Table 2 summarizes the types of controllers and number of each utilized throughout the City of Lincoln.

TABLE 2 – TRAFFIC SIGNAL CONTROLLER TYPES

Controller Type	Number
M52 – RELEASED 2002	225
M40 – RELEASED 1996	135
M03 – RELEASED 1984	56
TOTAL	**416**

2.1.3 Cabinets

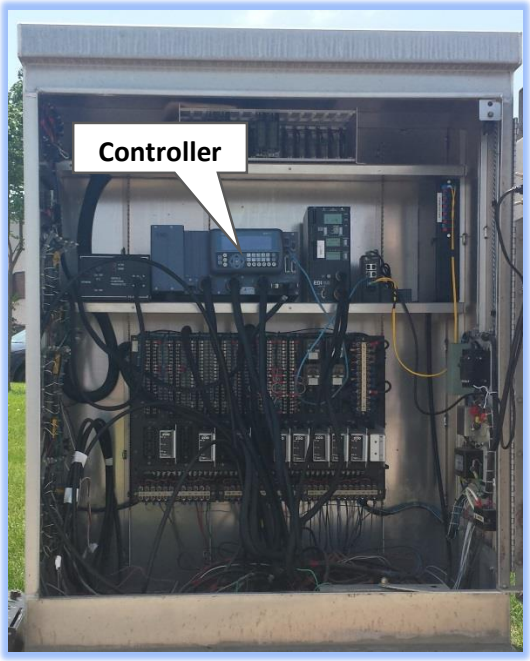
The City of Lincoln has a variety of traffic signal and ITS cabinets in the field. Table 3 summarizes the types of cabinets and number of each utilized throughout the City of Lincoln.

TABLE 3 – TRAFFIC CABINET TYPES

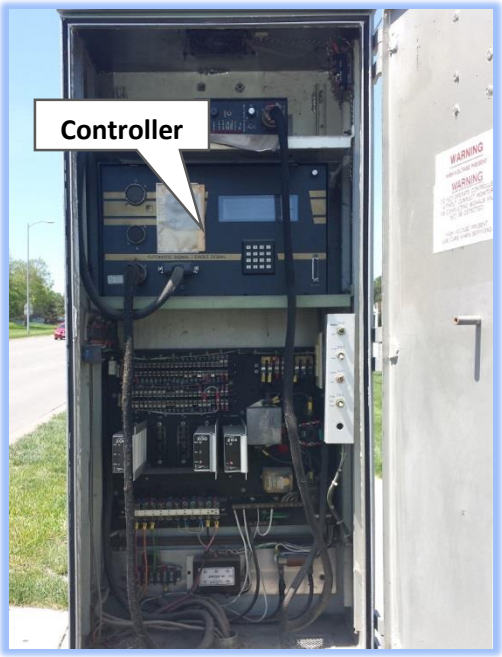
Cabinet Type	Number
TS-C	304
TS-B	61
TS-A	75
346 ITS	5
TOTAL	**445**

Today the National Electrical Manufacturers Association (NEMA) maintains the TS2 standard for traffic signal cabinets, controllers and related equipment used by the City of Lincoln. The TS2 standard that new city cabinets are built to is backwards compatible with the TS1 standard that the city's older cabinets were previously built to. These standards specify a range of cabinet sizes, which are designated as A, B and C; all having shelves, and a door on one side. Lincoln cabinet inputs and outputs consist of binary (on / off) logic wires connected to the controller via three connectors designated as 'A', 'B', and 'C'. It is common for these cabinets to provide additional input / output control wires via a connector designated as 'D'. All of the controller inputs and outputs are available to the operator via the cabinet back board or side panels.

The photos below illustrates different cabinets and different internal components.



NEMA TS-C Cabinet



NEMA TS-A Cabinet

2.1.4 Detection

Throughout the traffic signal controlled intersections across the City, different types of vehicle detection are utilized to detect the presence and approach of vehicles on various legs of the intersection. These vehicle detectors are required to help the signals run efficiently and assist with safety (clearance intervals) on higher speed approaches. The detectors are identified as 1) inductive loops, 2) optical cameras, 3) magnetic probe, 4) infrared cameras, and 5) wireless magnetics. In addition, pedestrian crossing signals generally use pedestrian-activated push-button detection. The remaining signals may or may not have detection, depending on their specific function, location and actuation requirements. (Example – CBD area intersections that run in "pretimed" mode). Most signals use a combination of primarily loops and cameras. Table 4 shows the breakdown of these intersections.

TABLE 4 – VEHICLE DETECTOR TYPES

Detector Used	Number of Intersections
Loops Only	156
Loops w/ Cameras	134
Camera Only	18
No Detection Used	108

Despite rigorous maintenance activities, the existing system of detectors are in need of updating. Based upon inventory data, more than 30% of the current detection is faulty. Due to continued pavement rehab projects historically that have resulted in saw-cut loops with shorter lifespan, or outdated camera detectors beyond their lifecycle and warranty, the resultant detection system requires priority attention. The photos below depict typical loop placement in the pavement that are no longer in service.

Saw-cut Loop in Damaged Pavement

Saw-cut Loop Wire Damage

Many of the arterial / arterial intersections can have upwards of 60 to 70 loops – both stop bar detection and advanced detection loops on the approaches. With over 15,000 vehicle detection locations Citywide it is evident that this aging infrastructure, in addition to paving rehab projects, presents operational challenges.

An additional opportunity for improvement lies within several of the older camera detection locations that have experienced an increasing failure rate over the last 3 seasons. Much of this is due to the age and technology components within the older model cameras and the need for field hardened requirements. The Traffic Engineering team has completed new procurement specifications and has approved new products as of this Fall, 2015. A picture of typical, older, non-intrusive camera detection on a signal mast arm is illustrated at right.

Many of the weekly calls and complaints from citizens regarding the signal system are in response to failed detection issues. Whether it is an issue of side street traffic not being detected and being served a green signal indication, or mainline arterial signals turning red, with no side street vehicles present, this is typically an issue with the intersection detection system. Figure 2 illustrates the existing faulty detection locations.

NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST

ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD

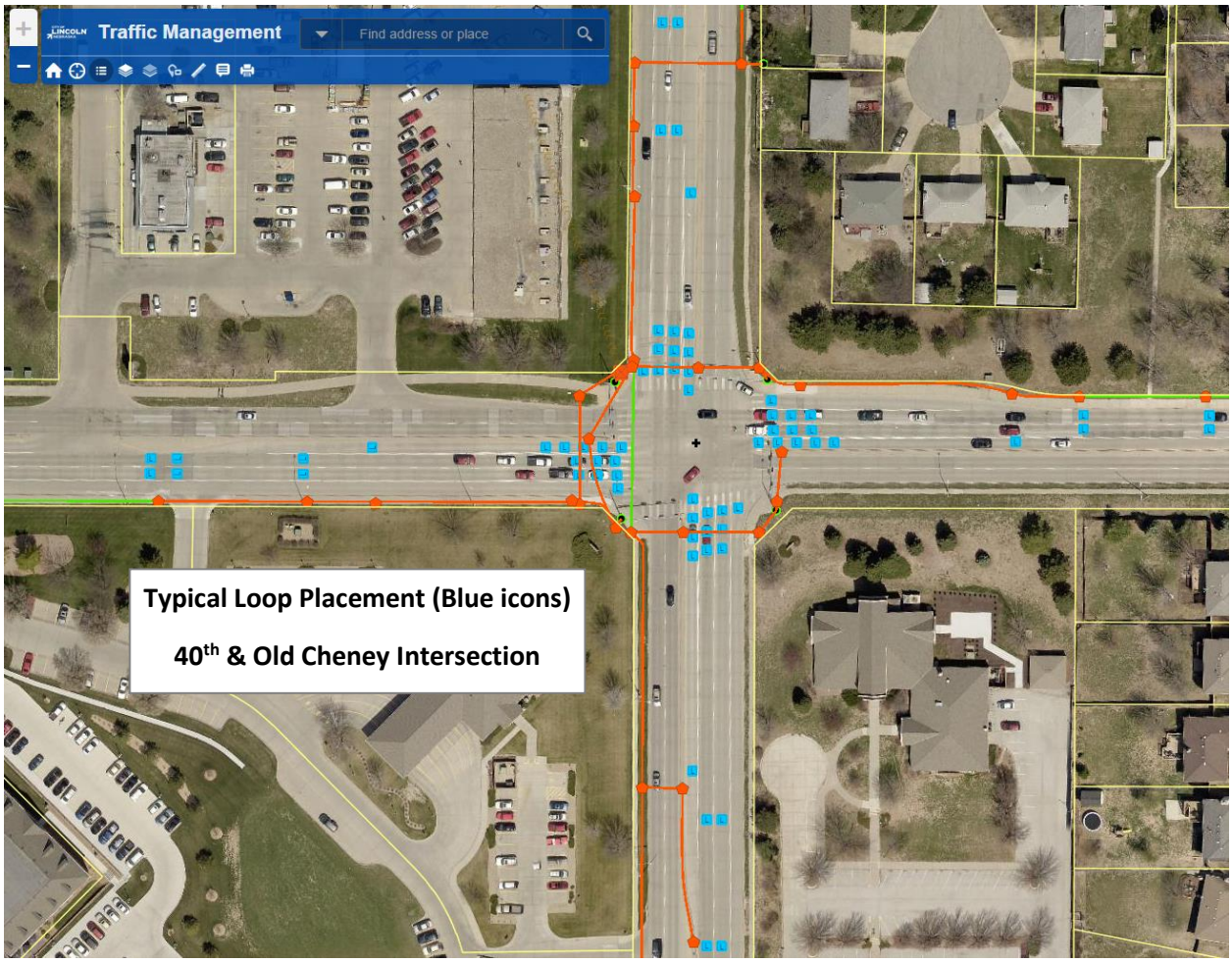
Legend

- Signalized Intersection
- Pedestrian Signal
- Flashing Beacon
- Rectangular Rapid Flashing Beacon
- NDOR Signal
- Faulty Detection

CBD \ West Haymarket

R ST
Q ST
P ST
O ST
N ST
M ST
L ST
K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST

As depicted in the typical intersection layout below (40th & Old Cheney), when these detection locations begin to fail, it costs money and time to troubleshoot specific locations. Furthermore, for individual loop fixes it can mean lane closures and lengthy downtime and delays for traffic if new saw-cut loops are needed.



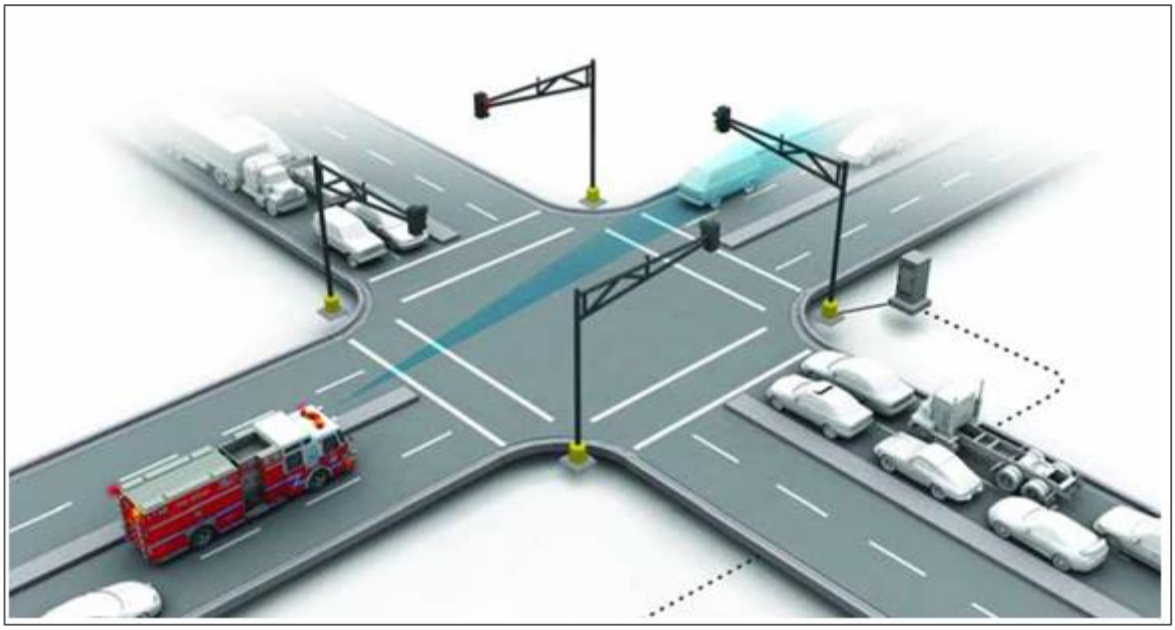
Typical Vehicle Detection Zone Layout

Traffic Operations has enacted an internal best practice of "no new saw-cut loops" in pavement if they can be avoided with any other feasible solution. The goal is to avoid damage to old concrete, or elimination of these cuts in newly rehabilitated pavement. In addition, with costs of loop replacement at approximately $1,000 each it is easy to drive detection costs north of $50,000 during rehab work. By comparison, a new non-intrusive detection system can be installed for less than $25,000 per intersection. Options for these types of deployments within the existing environment will save time and money.

2.1.5 Emergency Vehicle Preemption (EVP)

Emergency vehicle preemption systems give priority to specific emergency vehicles as they approach an intersection (causing the signal to cycle and provide green indications quickly in a responsive manner). EVP systems are currently deployed at 166 signals in the City of Lincoln. Some intersections are equipped with only a single approach to the intersection, and others with multiple approaches depending on typical emergency vehicle routes.

EVP systems include one or two receivers mounted on signal mast arms and in-vehicle transmitters with the various emergency responder vehicles. All current EVP systems use infrared technology to provide preemption for any emergency vehicles (typically police, fire, ambulance) equipped with a transmitter device and approaching a signal from any direction.



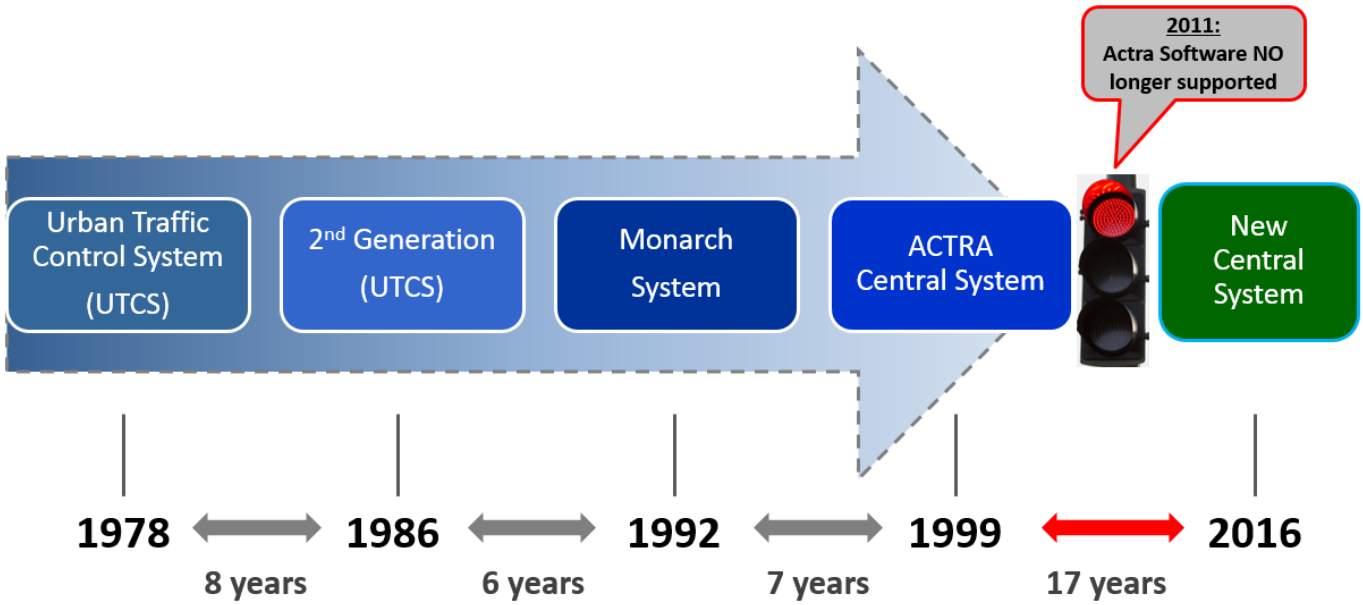
Typical EVP System Concept

These locations are periodically review with Lincoln Fire and Rescue for additions, removals, and/or modifications based upon new station locations or new traffic signals constructed. A continued challenge of these systems is the request for new locations or maintenance of existing locations with no prioritized and defined budget for such between the emergency response agencies and Public Works.

2.2 Central Signal System Software

The City of Lincoln currently utilizes a central signal system software package to communicate in near real time to the majority of the traffic signal controlled intersections throughout the City. This software is installed at the MSC and is used to keep field controller clocks in synch, download and upload signal timing information, store signal settings in the database and provide alarm notifications of system or communication failures.

In 1999 the City of Lincoln purchased this Actra system, a Siemens product. It has been the software used for timing and coordination of the City's intersections. While the system has been a good product, it has become dated, along with the associated controller hardware and software that is installed in the field locations. As of 2011 Siemens stopped servicing or updating additional builds and patches for the software. Thus the vendors that sell and represent the products also discontinued support and servicing of the Actra software package. A timeline of the City of Lincoln signal system software packages, and migration path is illustrated below.



City of Lincoln – Signal System Upgrade Timeline

An additional, paramount challenge is that the system is not compatible with operating systems newer than Windows XP. Due to the City's recent upgrade of Windows 7 across user PC's and system servers, this enterprise software now resides solely on one computer in the Traffic Team offices, and one laptop in the traffic signal shop. As such, critical staff beyond the signal system technician do not have access to this software, including the Traffic Engineer.

2.3 Communications Systems

The following section provides a brief description of the existing communications infrastructure currently in use, its condition, and the typical installations for the traffic management system. The previously developed "Lincoln Technology Improvement System, Broadband Infrastructure Plan" was completed in coordination with Traffic Engineering staff and provides additional detail on the City's overall communications network. An Executive Summary of this document is included in Appendix C for additional information.

Traffic ITS and Communications staff currently operate and maintain the entire City of Lincoln communications system. This includes both wired and wireless infrastructure to all signals, field devices, and City buildings throughout the network. Much work has been done to continue to improve the high speed characteristics of this system providing improved reliability and connectivity to various stakeholders.

2.3.1 Existing Communications Infrastructure

There are currently three primary types of communication media throughout the City: 1) twisted pair copper (overhead and in conduit), 2) wireless radios, and 3) fiber optic cable. Table 5 summarizes the type of communication media in use by the traffic field devices.

TABLE 5 – INTERSECTION COMMUNICATION IN-USE

Communication Type	Number of Cabinets
Fiber	213
Copper	170
Radio	33

**Note: Intersections may use multiple communication types*

Copper communication lines are the oldest of all types of communication media. Many older parts of the city are still connected using these copper links. Radios are used when no conduit connects isolated intersections and to bridge unconnected areas. The city has recently been focusing on installing fiber optic cable, with a majority installed to numerous intersection locations and facilities. The City has underway several upgrade projects to replace all of the multi-mode fiber to single-mode fiber and hopes to have it all replaced within the next 2-3 years. Table 6 below and Figure 3 on the following page illustrates the existing communications system characteristics and locations.

TABLE 6 – COMMUNICATION LENGTHS

Communication Type	Length
Fiber	144 miles
Copper	27 miles
Radio	25 miles
All Aerial	19 miles

NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST

ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD

Legend

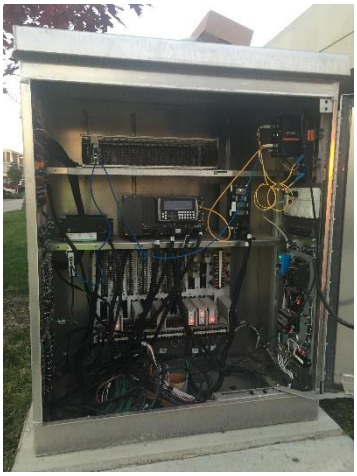
- Multi Mode Fiber Cable
- Aerial Cable
- Single Mode Fiber Cable
- Aerial Cable
- Copper Cable
- Aerial Cable
- Wireless Signal

N
W
E
S

CBD \ West Haymarket

R ST
Q ST
P ST
O ST
N ST
M ST
L ST
K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST

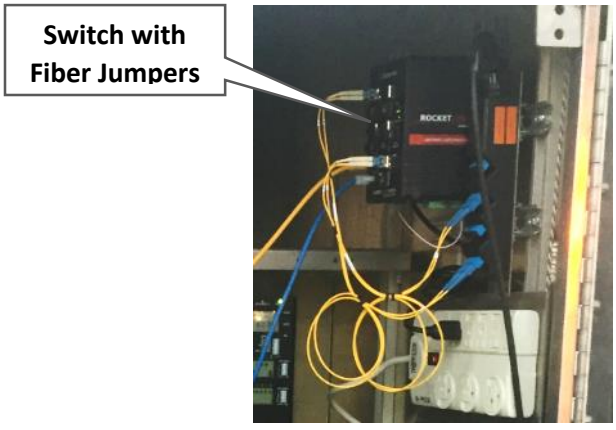
Vast improvements have recently been made to the way that cabinets and infrastructure is tied to the fiber optic communications system. Previously, fiber optic cables were brought into the physical signal or ITS cabinets via the underground system of conduits and pull boxes. The cables were then terminated within cabinets (physically cut) and then routed back out of these cabinets and down the line to the next facility. Recent changes to this setup have been made by the Traffic Team to avoid damage to fiber cable within cabinets that are in turn damaged during vehicle crashes or construction activity. In addition, only the fibers utilized for connectivity (one pair) are cut and spliced with fiber optic jumpers underground in the nearby pull box. This allows for no degradation to the mainline cable (losses) and maintains improved infrastructure for future users.



Signal Cabinet

Fiber Box with Splice Enclosure

Within the field device cabinets, the City is installing managed Ethernet switches so that signal controllers, detection, cameras, and other devices can be plugged in and assigned IP addresses on the network. These allow for remote monitoring of the communications system and improved efficiency while deploying additional equipment.



2.4 Intelligent Transportation Systems (ITS) Devices

Several ITS devices are operated and maintained in the current Traffic Management System. These devices are utilized to proactively manage traffic, provide traveler information, and evaluate performance of intersections and roadways. The following sections summarize these existing ITS devices.

2.4.1 Closed Circuit Television (CCTV) Cameras

Traffic Operations currently maintains and operates over sixty pan-tilt-zoom (PTZ) CCTV cameras. They are located throughout the city at major intersections and other strategic view locations such as Haymarket Park and select parking structures. The cameras are vital to monitoring special event traffic and are coordinated with viewing privileges amongst many other City entities including the Lincoln Police Department, Lincoln Fire and Rescue, Street Maintenance etc. In addition, local news affiliates are also granted limited viewing access. All of the existing cameras are IP addressable (Ethernet communications). Currently the software used to view all of the cameras, a basic AXIS viewer, is no longer supported and is a Windows XP based program. The Traffic Team working in coordination with the GIS team, developed a basic web viewer as part of the GIS Web Portal initiative. Traffic Engineering is currently leading a City and County procurement of a camera management software that will be compatible amongst all local agencies including partnerships with the University of Nebraska Transportation Center, and UNL Police Department amongst others.

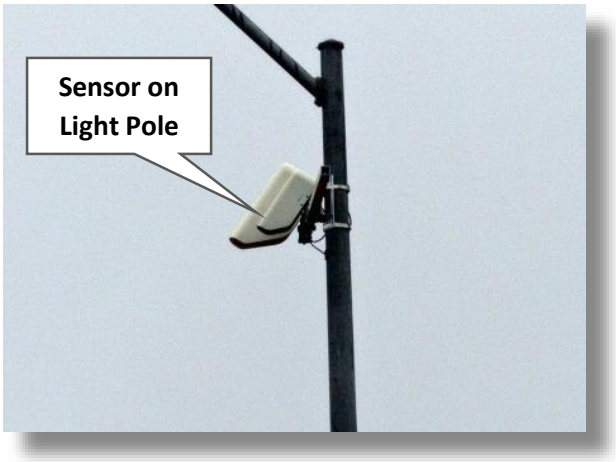
2.4.2 Dynamic Message Signs (DMS)

The City of Lincoln currently owns and operates a fleet of 44 DMS, consisting of approximately 27 Portable DMS Trailers, and 17 Permanent DMS on arterial roadways. The signs are used frequently for construction project traffic control and detour information, special event traffic management, and public safety announcements. With the recent addition of Pinnacle Bank Arena, the portable boards have been deployed multiple times at recurring locations to provide parking information.

The fleet of both portable and permanent signs each have a mix of primarily two separate make/models, provided by a variation of differing vendors. These signs are also currently controlled by a mix of different software applications. These applications include Centrallo, Northra, and Vangaurd control software. With the exception of newer, off the shelf software supplied with recent permanent DMS on the N. 27th Street arterial, most of the other software packages are outdated, no longer supported by the manufacturer and/or vendor, and are not easily accessible by multiple staff. Often times, the simple task of creating, and sending a message remotely to these signs is not achievable from the office, thus requiring staff time and resources to manually post messages in the field at the sign location on site. This results in challenges during emergencies and incidents (like the recent flooding events in 2015).

2.4.3 Condition Detection and Warning Systems

There are currently two bridge locations in the City that are instrumented with Ice Detection and Warning Systems to provide additional traveler information during inclement weather. These systems are located on the Harris Overpass ('O' Street), and on the newly rehabilitated N. 27th Street Viaduct over Leighton Avenue. The condition detection component consists of a non-intrusive sensor (infrared camera) mounted on a bridge light pole. The sensor can provide surface state temperature, moisture conditions, and calculates a "grip" coefficient. The warning system components include two permanent arterial DMS locations in advance of the bridge that are connected to the sensors and communications network/equipment at centralized cabinets below the structures.



The systems can be set to automatically post warning messages to the DMS, based upon sensor outputs during snow/ice conditions. Traffic staff have access to the sensor status remotely, and can also override any messaging for the system. Routine maintenance and calibration testing of the systems are required to keep them in acceptable operations.

Additional condition detection and warning systems include the "Road Impassable" detection and flashing beacon systems located at select underpass locations near Cornhusker Highway with both 48th Street and Havelock Avenue. These systems are currently linked via radio communications to the pump station locations. The assemblies also have outdated hardware that is frequently repaired and maintained to remain operational in times of flooding. Figure 4 illustrates the City of Lincoln existing ITS devices, while Figure 5 illustrates the total Traffic Management System.

NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST

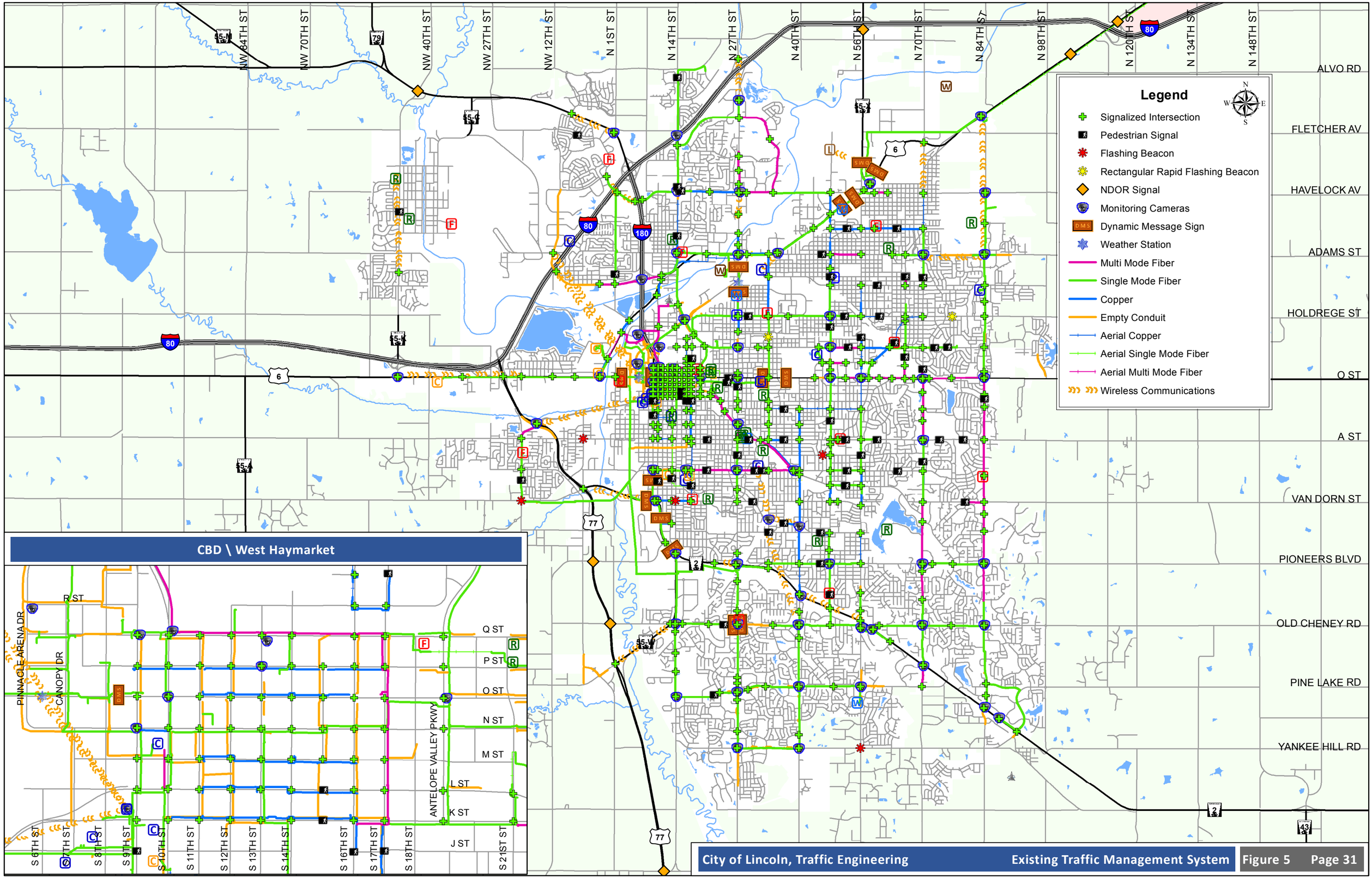
ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD

Legend

- Monitoring Camera
- Dynamic Message Sign
- Weather Station

CBD \ West Haymarket

R ST
Q ST
P ST
O ST
N ST
M ST
L ST
K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST


NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST
ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD
Legend
Signalized Intersection
Pedestrian Signal
Flashing Beacon
Rectangular Rapid Flashing Beacon
NDOR Signal
Monitoring Cameras
Dynamic Message Sign
Weather Station
Multi Mode Fiber
Single Mode Fiber
Copper
Empty Conduit
Aerial Copper
Aerial Single Mode Fiber
Aerial Multi Mode Fiber
Wireless Communications
CBD \ West Haymarket
R ST
Q ST
P ST
O ST
N ST
M ST
L ST
K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST

2.5 Traffic System Management - Existing

The following subsections describe the existing conditions assessment of system staffing, key operational activities, preventative maintenance, and the signal rehabilitation program.

2.5.1 Existing Staffing

All staff that conducts work related to the traffic management system are a part of the Traffic Engineering Division within the Public Works Department. In general, there are numerous roles and responsibilities that are carried out by staff in various subsections of the Traffic Team. This includes not only specific signal system related work flow, but overall requirements to address traffic engineering functions within the City of Lincoln metropolitan area. There is a wide array of needs required within these sections as numerous citywide projects and initiatives involve the traffic engineering discipline, and associated coordination. On a daily, weekly, monthly, or annual basis, the Traffic Engineer and support staff are engaged in multiple tasks – a sampling is included below:

- Management, task scheduling, & performance evaluation of staff
- Budget management of (signals, signs/markings, safety, CIP)
- Specifications development and annual updates for over 50 traffic products (equipment/hardware)
- Development & update of City specifications and over 20 Lincoln Standard Plans
- Review, update, accept and process over 20 annual commodity and service contracts
- Coordination with multiple other City Departments on planning initiatives & inquiries
- Maintenance, operations, and inspection of over 430 traffic signals citywide
- Maintenance, operations, and inspection of 70 CCTV cameras
- Maintenance, operations, and inspection of 17 permanent DMS and 27 PDMS for traveler info.
- Guidance & input as member of City's Complete Streets Committee
- Guidance & input as member of NDOR Safety Committee
- Review & response to over 600 annual traffic inquiries from public & internal stakeholders
- Coordination w/ ten engineers & PM's in Design & Construction (D&C), including numerous construction inspection staff on multiple CIP projects
- Design review of plans, specs & estimate packages for Traffic related components of D&C CIP projects
- Management of annual citywide durable marking contract
- Coordination of temporary traffic control plan design/approvals
- Detour route planning & analysis
- Consultant oversight & Traffic Operations project management
- Delivery & oversight of citywide traffic count program
- Delivery & oversight of citywide Crash Study program
- Guidance & input as member of City's Special Events Team
- Review & approval of over 250 special event permits annually
- Field review and operational support for special events

- Coordination & deployment of temporary traffic controls for numerous city-sponsored special events
- Emergency response/callouts with LPD officers to fatality crashes
- Emergency response and repair to over 50 annual traffic equipment damage incidents (vehicle hits)
- Regular on-call for emergency signal malfunctions
- Maintenance & replacement programming of 40,000 signs
- Inspection & contractor inquiry response to signal, signing & marking projects citywide
- Planning, design, contractor coordination & final inspection of fiber optic projects
- Maintenance, operations & inspection of over 150 miles of communications conduit/cable
- Analysis & evaluation of traffic studies for capacity, pedestrians, cyclists, speed limits, signal warrants, signal phasing & safety
- Evaluation & update of school route walking maps for all LPS school facilities citywide
- Review and planning support for LPS school projects & on-going inquiries at existing sites
- Review, approval, and processing of over 500 annual invoices for products, equipment & services
- Evaluation & input as part of consultant design project selection committees
- Coordination with Railroad field and management staff regarding at-grade crossings & pre-emption
- Monthly testing/documentation of Railroad Quiet Zone equipment at crossing sites
- Input and guidance with Planning Dept. staff as part of Oversight Team on LRTP development
- Traffic signal timing evaluation and phasing adjustments
- Pedestrian & Bicycle route analysis, signing, marking, and crosswalk evaluation

In addition to the above sampling of tasks items, the Traffic Team has staff involved in numerous daily meetings to facilitate coordination with multiple departments on status of projects, inquiries, reviews and approvals for new developments, on-going construction activities, and many other strategic planning activities.

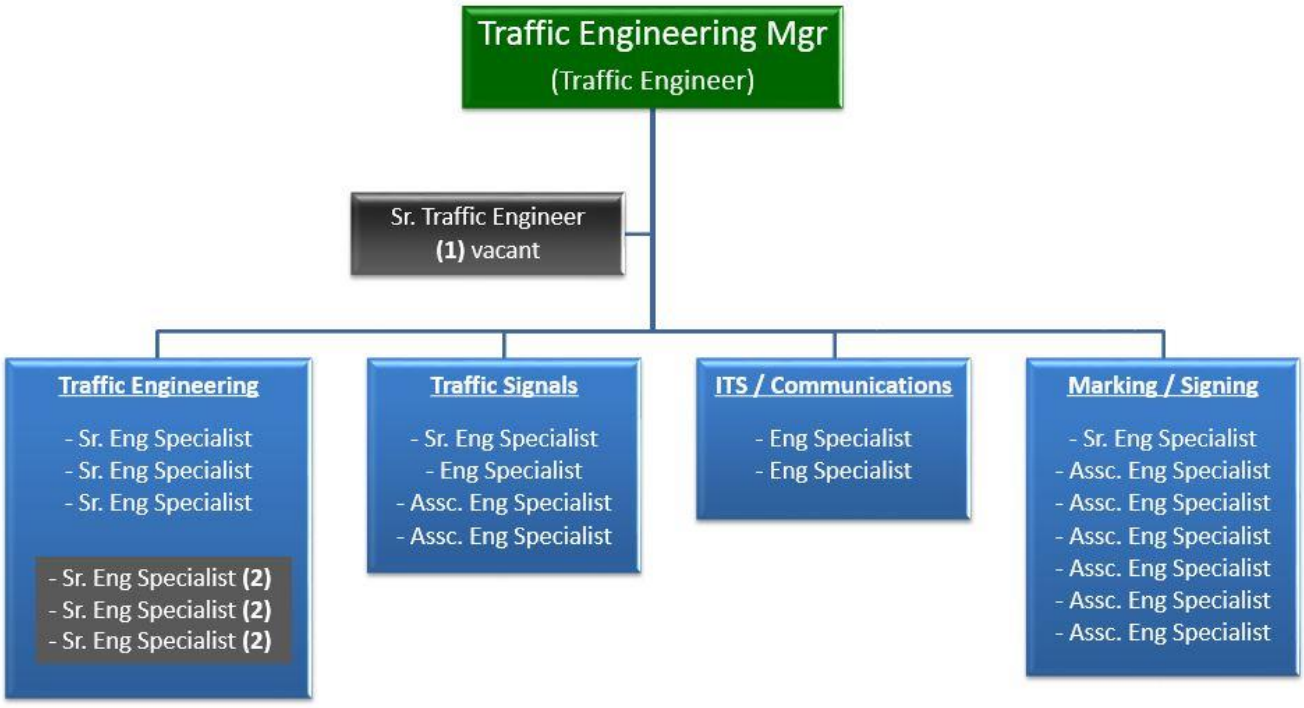
More specifically, there are functional sections within Traffic Engineering to address the demanding workload and varied work type. These include the following:

- **Traffic Operations & Safety** – Traffic studies, data collection, capacity and safety analysis, special events, traffic control, project development, planning and programming, GIS asset management, public response etc.
- **Traffic Signals** – Maintenance and operations of signal system, inspections, cabinet evaluation program, overhead electrical, construction project inspection & management, signal planning and programming, GIS asset management, contractor coordination, utility locates etc.

- **ITS / Communications** – Maintenance and operations of citywide fiber optic infrastructure and network to all city facilities, ITS device planning, installation and maintenance, GIS asset management, and review, approval, inspection of fiber optic communications system installations by contractors
- **Marking / Signing Shop** – Maintenance and operations of 40,000 signs citywide (not including street name signs) and pavement marking program, operations of sign trucks for installations, marking equipment operations – paint trucks, paint carts, parking stall reviews, and project inspections & installations

For purposes of the systems included for discussion within this Traffic Management Master Plan, the staffing resources include the following:

Currently, staff members that have duties devoted to the traffic signal system and ITS infrastructure are located at the MSC facility. This includes 6 full-time technician staff located in the signal shop, one full-time technician with primary signal system/timing responsibilities, and one Manager / Traffic Engineer with ¼ time dedicated to the system. Of these staff, two (2) of the 6 technician staff members are dedicated solely to ITS and communications infrastructure, and one additional signal technician is dedicated to full-time underground Traffic Utility Locate work during construction season (75% workload annually). An existing conditions organizational chart illustrating these staff, and the entire Traffic Team is included below:



(1) Moved to Traffic Engineering Manager with formation of ROW Construction Mgmt Section
(2) Moved to implement ROW Construction Mgmt Section

As illustrated in the functioning organizational chart, one manager and three additional technician level staff were utilized to join members from other Sections in the implementation of the City's new ROW Construction Management Section. This section was formed in timely fashion ahead of the coming construction season to better allow the City to coordinate and ensure performance of private construction in the public street Right of Way.

The technical staff perform typical work hours covering time periods from 7AM to 5PM on a Monday through Friday schedule. Staff in the traffic signal shop overlap hours in the morning and afternoon to better cover traffic activity (10 hrs of the day). Currently, there are no 24/7 operations, nor staffing coverage during the remainder of the AM and PM peak traffic periods on a daily basis. Members of the traffic signal shop do rotate weekly (single staff member) to provide an emergency "on-call" staffing as needed for equipment failures, damaged equipment, power outages, facilities hit by contractors etc. These staff work on a "call-back" pay system and receive overtime pay for work performed outside normal business hours.

Based upon current resource levels, goals and requirements for many on-going maintenance and operational activities in Traffic Engineering are not being satisfied. Several publications and sources for recommendations on how best to support a City's system of traffic infrastructure have been documented. Information summarized by the Federal Highway Administration (FHWA) *Improving Traffic Signal Management and Operations*, and the Institute of Transportation Engineers (ITE) *Traffic Engineering Handbook and Traffic Control System Operations: Installation, Management and Maintenance Manual* are just two industry standard sources.

Often, the number of signalized locations and other service area size parameters are utilized to derive the number of required staff and other program needs. As an example, the number of traffic signals not only results in on-going maintenance needs and technical signal timing analysis, but also drives requirements for annual data collection, response to public inquiries and/or complaints, and documentation of safety and operational characteristics. Recommendations of one traffic engineer needed to properly operate and maintain every 75 to 100 signals, and one signal technician to operate and maintain every 40 to 50 signals has been identified as industry standard. Using these guidelines for the existing system, **the City would have an existing staff of 4 to 5 traffic engineers and 8 to 10 signal technicians.** A further description and recommendation for future staffing is included in Section 4 of this plan.

2.5.2 Traffic Signal Timing

Currently traffic signal timing for all the signals is conducted by a Senior Technician with input from the Traffic Engineer. This includes basic timing (e.g., yellow-change and all-red clearance intervals, pedestrian walk and clearance intervals) and coordination parameters (cycle lengths, splits, and offsets), as well as responding to timing-related citizen complaints. Currently, most traffic signals operate within a coordinated time of day plan with others operating in free mode. Most intersections operate on different patterns for different times of day and special events.

As highlighted in the Executive Summary signal optimization and formal, scheduled re-timing programs have profound benefits to motorists and the City's transportation network. Due to resources and staffing, the City of Lincoln has not conducted formal signal timing optimization work in over a decade. This includes both consultant (outside) assistance, and internal development of corridor wide timing plan updates with documented before and after study results. This is a priority need that can result in huge benefits for the citizens of Lincoln.

Facts on Signal-Related Congestion

Delays at traffic signals contribute an estimated 5 to 10 percent of all traffic delay or 295 million vehicle-hours of delay on major roadways alone.[1] Further, the *2011 Urban Mobility Report* notes that in its reporting areas 61 percent of the street miles in the cities had some level of traffic signal coordination that reduced delay by 21.7 million person hours.[2] The U.S. Department of Transportation Intelligent Transportation Systems Joint Program Office maintains a database that documents traffic signal management and operations studies conducted by various agencies demonstrating benefit-cost ratios exceeding 40:1.[3]

[1] Congestion Reduction Toolbox. U.S. Department of Transportation Federal Highway Administration. Accessible via www.fhwa.dot.gov/congestion/toolbox

[2] *2011 Urban Mobility Report*. Methodology-Benefits of Operational Treatments. Texas Transportation Institute, 2011. Accessible via http://mobility.tamu.edu/files/2011/09/operational-treatments.pdf

[3] ITS Benefits, Costs and Lessons Learned Database. U.S. Department of Transportation (U.S. DOT) Intelligent Transportation Systems Joint Program Office. Accessible via www.benefitcost.its.dot.gov

2.5.3 Incident Management

The City of Lincoln currently does not have updated, pre-determined incident management signal timing modification plans for major arterial events. The Nebraska Department of Roads (NDOR) sponsored a project several years ago to develop incident management plans involving traffic diverted off I-80 for a major shutdown along various segments. The focus of this work was primarily dissemination of traveler information via permanent and portable DMS locations. As a result, a portion of this infrastructure was made permanent. To date, no major refresh of that activity has taken place. In general, City Traffic staff is notified of major incidents (vehicle crashes, fires, HazMat spills) within the city limits, and is a first responder to assist with temporary traffic control and detour routing as needed.

2.5.4 Special Event Management

The primary special event management coordination that takes place with Traffic Engineering are with City sponsored events such as Uncle Sam Jam, and the Lincoln Marathon. During these events, several staff and equipment are deployed to provide temporary traffic control along event areas and coordination with other law enforcement agencies and departments is conducted. In addition, the major traffic signal related impacts are during UNL home football games and other major events at Pinnacle Bank Arena. For UNL football, predetermined special event timing plans are input to the system controllers remotely from the MSC during both pregame and postgame time periods. Major coordination with LPD, and UNLPD occurs during these times of pedestrian and vehicular ingress and egress. The operation is somewhat limited currently due to lack of an ATMS software to manage all devices simultaneously. During a recent home football game, post-game operations were severely limited due to a failure in the system, causing major delays, motorist frustration, and increased manual direction by LPD officers. All of this could have been avoided with a modernized system and basic remote access by a signal system engineer.

UNL Football Game Day Traffic

2.5.5 Traffic Signal Preventative Maintenance

Traffic Operations has a new and efficient preventative maintenance program, which was just recently upgraded to a complete digital process using Beehive Software. Limited only by staffing resources which force much work task overlap during construction season, the program is lean but performing at a high level. Each year a technician visits each traffic signal cabinet to remove, test, and replace the signal conflict monitor and check and repair every component inside of the cabinet. Every 3 years an overhead technician ideally visits each intersection to visually inspect all hardware on the mast arms and poles, and will replace or repair as necessary any brackets and mounting hardware (current resources limit this). Through pro-active work scheduling versus knee-jerk field reviews, technician staff with mobile devices are now able to complete work logs remotely and be efficient with time and vehicle fuel savings by areas of the City where they are scheduled.

2.5.6 Communications Maintenance

Traffic Engineering ITS staff monitors the status of the communications system on a daily basis. Every traffic signal, PTZ camera, wireless radio, UNL devices, serial to Ethernet devices, and various equipment for other city departments are verified online every morning and throughout the day. Using network software analytics and device polling, an increasing portion of the remote work is able to be confirmed. When an issue arises with field devices or network connectivity to City facilities staff responds as quick as possible to replace or repair the issue. In addition, annual unit price contracts and on-call contractors are used if there are major construction impacts or fiber cuts that need to be spliced.

2.5.7 Traffic Signal Rehabilitation Program

In addition to the planning, design, operation, and maintenance of the traffic signal system level infrastructure and ITS components, the City of Lincoln Traffic Team is also focused on a routine Signal Rehabilitation Program. This includes the on-going and necessary replacement of aging traffic signal poles, mast arms, combo lighting, cabinets, wiring etc. at existing traffic signal locations.

A typical life-span of 30 years for signal structures is the primary threshold for total replacement needs based on pole standards, with many of the other signal components having a much shorter service life (detection, cabinet equipment etc.). Beyond the annual development impacts that often require new or existing intersections to be controlled with traffic signalization, the current signalized intersection inventory must be evaluated for replacement of aging and functionally obsolete equipment. In general, the City replaces 2 to 3 traffic signals as needed annually as part of major roadway projects during the construction season. Unfortunately, these roadway project locations alone do not always align with the highest priority need for individual traffic signal replacements at specific older intersections city wide. As such, Traffic Engineering also attempts to replace as much of the older infrastructure as fiscally feasible. An additional 2-3 stand-alone signal projects are programmed annually. In addition to these two scenarios, there are typically a couple brand new signals turned on each year due to new development – adding further to the overall signalized intersection total.

“To improve is to change; to be perfect is to change often”

- *Winston Churchill*

3.0 Needs Assessment

Based upon the summary and evaluation of the existing traffic management system components a typical needs assessment process was conducted. This activity of identifying gaps in the system based upon current status and desired goals and objectives is typical and similar to what many agencies conduct during a major system upgrade. From the day to day working knowledge of all portions of the current system and staff involvement with maintenance and operations, a list of high level needs categories was identified as shown below:

1. Arterial Traffic Management
    - Improve operations for all modes of transportation
    - Improve efficiency of the traffic signal system
    - Improve efficiency of engineering, operations, and maintenance staff
2. System Safety
    - Improve safety for all modes of transportation
    - Improve safety for drivers making left turns
    - Improve safety for pedestrians at intersections and mid-block locations
    - Improve safety for bicyclists at signalized intersections
    - Improve safety and operations for drivers during winter driving conditions
    - Improve safety for drivers and pedestrians by reducing speed-related crashes
    - Improve safety for drivers by reducing vehicle-to-vehicle crashes
3. Communications Systems
    - Improve performance of the traffic signal system
    - Improve efficiency of engineering and maintenance staff
    - Improve security and scalability of network to support traffic signal system goals
4. Incident Management
    - Improve operations for drivers during incidents
    - Improve safety for the public and emergency response personnel
    - Improve incident clearance time to restore roadways to normal operations
5. Traveler Information Systems
    - Improve operations for drivers by dissemination of real time transportation information
6. Public Transportation
    - Improve operations for transit vehicles at traffic signals
    - Improve safety for transit vehicles
7. Maintenance and Construction Operations
    - Reduce failures of traffic signal system components
    - Improve efficiency of technician staff
    - Improve safety and efficiency of traffic approaching and moving through work zones
    - Improve efficiency of staff and equipment during maintenance and winter operations
    - Improve preventative maintenance
    - Improve asset/infrastructure monitoring capabilities

Table 7 summarizes the high-level needs, constraints, and expectations for these categories. Priority for each need was identified as high (H), medium (M), or low (L). In addition, the existing status of the fulfillment was identified as nonexistent (N), partially complete (P), or complete (C).

TABLE 7 – PRIORITY AND STATUS OF NEEDS, CONSTRAINTS, AND EXPECTATIONS

NO.	NEEDS, CONSTRAINTS, AND EXPECTATIONS	PRIORITY	STATUS
1.0	**ARTERIAL TRAFFIC MANAGEMENT**		
1.01	Replace controllers	H	N
1.02	Install upgraded software on controllers	H	N
1.03	Provide additional space in cabinets for additional components	M	P
1.04	Integrate traffic signals into a single traffic control system software	H	P
1.05	Integrate ITS field devices into a single management software	H	N
1.06	Designate central location for signal timing databases	H	C
1.07	Provide ability to easily update controller settings in the field	M	P
1.08	Improve system operation monitoring	H	P
1.09	Provide access to management software to various staff in various locations	H	P
1.10	Improve ability to remotely modify signal timing	H	P
1.11	Provide notification of detector failures	H	P
1.12	Deploy timing plans to groups of intersections simultaneously	M	P
1.13	Receive automatic notifications for coordination errors	H	P
1.14	Setup alarm notifications for user-defined thresholds for various parameters	H	P
1.15	Download user-friendly operational reports on signal system operations (such as communications failures), timing data, and traffic data	M	P
1.16	Provide alarms for excessive queuing	L	N
1.17	Develop an automated logging system	H	N
1.18	Automatically archive data	H	P
1.19	Conduct traffic flow monitoring in real time	H	P
1.20	Obtain access to existing freeway monitoring capabilities	L	P
1.21	Provide high-quality real-time traffic information	M	N
1.22	Provide timely congestion and incident information to public	M	N
1.23	Provide the public with limited access to traffic management tools and activities	H	N
1.24	Integrate traffic data collection software with traffic signal system modeling software	M	N

NO.	NEEDS, CONSTRAINTS, AND EXPECTATIONS	PRIORITY	STATUS
1.25	Integrate traffic signal system modeling software with ATMS software	M	N
1.26	Improve signal coordination	H	P
1.27	Maintain high-quality coordination	H	P
1.28	Provide the ability to modify coordination correction modes	M	P
1.29	Conduct traffic data collection from permanent stations	M	N
1.30	Measure signal timing performance	H	N
1.31	Provide dynamic lane assignment based on user-defined traffic data inputs	L	N
1.32	Develop special event timing	H	P
1.33	Install adaptive traffic control on certain corridors	H	N
1.34	Provide adequate staffing to perform functions	H	P
1.35	Provide adequate staff training	H	N
1.36	Develop interagency agreements	M	P
1.37	Evaluate future vehicle-to-vehicle communications systems	L	N
1.38	Evaluate pedestrian and bicycle concerns	M	N
2.0	**SYSTEM SAFETY**		
2.01	Provide automatic notifications for power outage and cabinet knockdowns	H	N
2.02	Provide the ability to implement flashing yellow arrow operation for permissive turns within management software	H	N
2.03	Provide the ability to implement a pedestrian beacon within management software	H	P
2.04	Provide the ability to implement pedestrian scramble operation within management software	H	P
2.05	Provide the ability to implement audible or accessible pedestrian features within management software	H	P
2.06	Implement detection and develop timing specific to bicycles	H	N
2.07	Provide anti-icing systems on high-volume approaches with steep grades	L	P
2.08	Monitor speeds in real-time and conduct data collection at speed feedback sign locations	L	N
3.0	**COMMUNICATIONS SYSTEMS & INTEGRATION**		
3.01	Increase speed, bandwidth, and reliability of field to field communications	H	P

NO.	NEEDS, CONSTRAINTS, AND EXPECTATIONS	PRIORITY	STATUS
3.02	Increase speed, bandwidth, and reliability of center to field communications	H	P
3.03	Provide staff in the field access to network	H	P
3.04	Provide the ability to transmit video	H	P
3.05	Provide central information clearinghouse	M	N
3.06	Develop interagency agreements	M	P
3.07	Provide communications to all signals	H	P
3.08	Provide remote access to the traffic signal network for management, software upgrades, and troubleshooting	H	P
3.09	Develop and implement network security protocols	H	P
3.10	Develop traffic signal IP schema/architecture for participating	H	P
3.11	Evaluate IP schema/architecture	M	P
4.0	**INCIDENT MANAGEMENT**		
4.01	Improve incident detection	M	N
4.02	Verify and monitor incidents	H	P
4.03	Provide staff to actively monitor and coordinate	H	P
4.04	Improve incident response coordination between agencies	H	P
4.05	Reduce traffic delays for emergency response vehicles	H	P
4.06	Develop methods for deployment of incident management for select corridors	M	N
4.07	Provide better coordination for ending incident management activities	M	N
5.0	**TRAVELER INFORMATION SYSTEMS**		
5.01	Provide traveler information on the roadside	H	P
5.02	Provide quality real-time congestion-related information	M	N
5.03	Improve and expand traveler information delivery methods	M	N
5.04	Improve procedures to get accurate information disseminated in a timely manner	H	N
5.05	Provide better work zone information and notification	H	P
6.0	**PUBLIC TRANSPORTATION**		
6.01	Provide transit priority at signals	L	N
6.02	Provide information exchange to/from transit agency	M	N

NO.	NEEDS, CONSTRAINTS, AND EXPECTATIONS	PRIORITY	STATUS
6.03	Use AVL data for traffic management	M	P
6.04	Provide transit ETA information	L	P
7.0	**MAINTENANCE AND CONSTRUCTION OPERATIONS**		
7.01	Conduct preventative maintenance on traffic signals at regular intervals	H	P
7.02	Standardize traffic control equipment	H	P
7.03	Standardize cabinet setup	H	P
7.04	Improve coordination on construction notification and information distribution	M	P
7.05	Improve work zone traffic handling plans	M	P
7.06	Monitor traffic remotely in and around work zones	M	P
7.07	Provide weather and pavement data collection to aid winter operations	M	P
7.08	Provide automated vehicle locations systems for maintenance and construction operations vehicles	L	N

Priority: H – High, M – Medium, L – Low; Status: N – Nonexistent, P – Partial, C – Complete

The above items provide further discussion topics and the continued identification of system needs and opportunities to greatly improve the daily function of the overall team and equipment. Through the identification of self-assessment gaps, future system improvement strategies were developed including required resources to provide the citizens of Lincoln with improved mobility citywide.

“Isn’t it funny how day by day nothing changes,

but when you look back, everything is different”

- *C.S. Lewis*

4.0 Future System Improvement Strategies

This section highlights further discussion of many of the traffic management system components and strategies for improvements. These items will be the focus of priority within the Traffic Engineering Capital Improvement Program and operating budgets looking forward. Additional detail regarding these items is included in the sections that follow.

4.1 Traffic Signal System Hardware

Traffic signal system hardware components will need to be upgraded as the City of Lincoln looks to integrate required ATMS software and continues the buildout of a robust, IP based system with Ethernet over high speed fiber communications. Primary hardware components will need to be prioritized up front, with continued updating of relevant equipment in the near term.

4.1.1 Controllers

The traffic signal controllers should be updated to modern standards and be compliant with advanced traffic controller (ATC) protocols that provide improved flexibility with new NTCIP communications standards. These controllers should be equipped with new industry standard local controller software that will allow for additional signal phasing alternatives, improved coordination capabilities, and allow for ease of data transfer and multiple ITS applications within the cabinets. In addition, the replacement of all City of Lincoln traffic signal controllers will likely be a project that should be phased in swiftly, but corridor by corridor. As such, the transfer of traffic signal timing database information will be a key component of the upgrade.

4.1.2 Cabinets

The City of Lincoln should continue to deploy the latest specification of current standard cabinets that have been upgraded to a NEMA TS2, Type I minimum standard. In addition, deployment of the newer Hybrid Signal Cabinet as recently contracted should be conducted at key communications hub locations at a minimum, and where other aggregation of ITS devices and additional detection makes it more advantageous.

Hybrid Cabinet

4.1.3 Detection

Based upon the current faulty detection problems citywide, the programming and deployment of new non-intrusive vehicle detection should be a priority improvement. With implementation of a new system, proper working detection will be a requirement to maximize the full potential of signal optimization and new timing plans. Continuing with the application of camera detection for stop bar locations and other side fire microwave detection on advanced approaches as needed, would allow for additional viewing of intersection approaches if brought back through the camera management software.

Traffic Engineering staff should look to deploy and test various technologies so that careful consideration as to the maintenance and replacement requirements are documented. In similar fashion, a mix of detection strategies should be evaluated under any new signal construction scenarios so that future adaptive signal control strategies or other performance measurement data can potentially be acquired from the detectors.

The increase in the use of bicycles both in mixed traffic and on exclusive bicycle facilities may create safety and/or operational issues that could be mitigated with better bicycle detection. The City should continue its evaluation of the wireless magnetic detection that is being implemented with the first "Cycle Track" project along the N Street corridor. These detectors are intended to obtain mid-block counts and also presence detection of bicycles for proper signal phasing.

4.1.4 Emergency Vehicle Preemption (EVP)

With continued increase in traffic volumes and congestion on primary corridors, this often limits the mobility of emergency vehicles to safely maneuver through traffic. Traffic and congestion can reduce vehicle response times to the detriment of the safety of the general public. Emergency vehicle preemption (EVP) systems have been successfully deployed throughout Lincoln and have an adequate track record for continued use.

The City of Lincoln should continue deploying EVP systems per the funding resources available with various public safety agencies. Systems should be evaluated however, that are consistent with potential longer range plans for other priority based systems such as transit signal priority (TSP). Often times shared costs and magnitude of scale can help stretch budget dollars for similar systems that can utilize the same field equipment.

4.2 Central Signal System Software

As identified in the existing system evaluation, the current signal system software is outdated and no longer supported. A detailed procurement document should be developed for replacement of this system as soon as possible. The procurement of a modern ATMS software package should include requirements that are developed by Traffic Engineering and are consistent with the needs identified for safety and operations. The system should be able to be accessed remotely by engineering and field technician staff as needed from either cpu or mobile tablet devices. A host of primary control should be included for not only traffic signals, but also other relevant ITS devices. Reporting requirements and data archiving are also important characteristics which will need to be included in the system capabilities.

4.2.1 Adaptive Signal Control Technology (ASCT)

The City of Lincoln is just beginning the evaluation and design of its first ASCT system on the N 27th Street corridor from O Street to I-80. This system was funded as a safety project through the NDOR. The adaptive project will deploy hardware and software that allow the signal controllers to “adapt” to changing traffic patterns and keep coordination of traffic for priority movements. As this project gets underway this winter season and goes to eventual deployment, the City of Lincoln should evaluate the benefits of such an install for other future opportunities. An ASCT software system could consist of a stand-alone solution, or one that is a “module” of whichever ATMS software is procured by the City ahead of time. Other corridors have been potential candidates for such a system including the Antelope Valley Parkway and East O Street.

4.3 Communications System

Much work is being done on the City of Lincoln communications system. The Traffic Team is working side by side with the Fiber Optic Manager, additional GIS staff, and several private providers to continue to build out the communications infrastructure. Leveraging of public/private partnerships and additional capital projects has led to widespread improvement of the broadband system. The City of Lincoln should continue on this path and look for ways to exponentially make progress on construction of these assets. Figure 6 illustrates the proposed future communications system infrastructure for the traffic management system.

4.4 Intelligent Transportation Systems (ITS) Devices

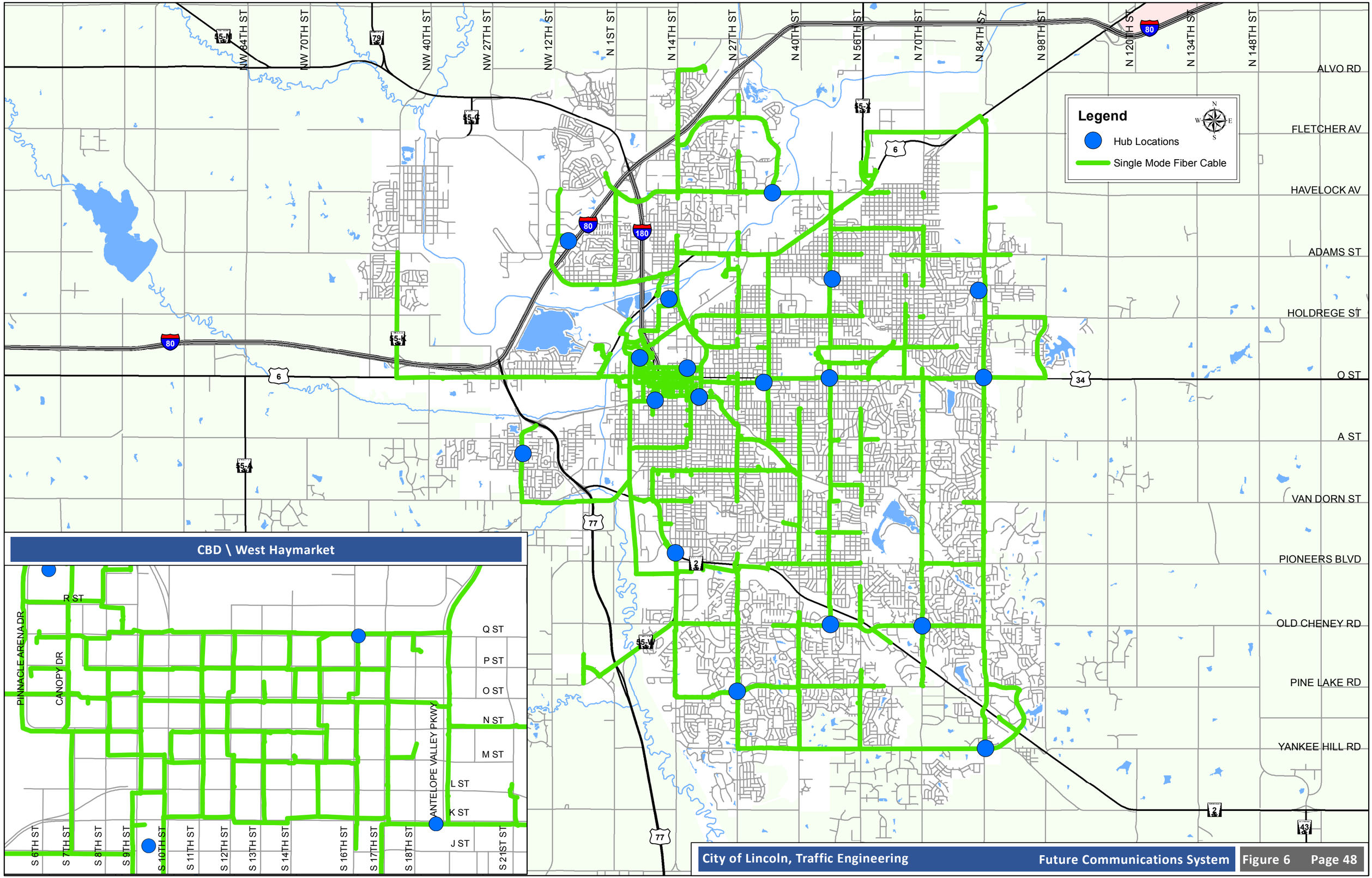
The City of Lincoln has benefited from the deployment of ITS at key locations in recent years. The coordination between emergency responders and Traffic Team members during special events, and times of incident management have been many. Being able to remotely see an issue at an intersection within a moment's notice has saved countless hours of field review and wasted response. Monitoring of construction activity and road closures, in addition to data collection, have also been key activities beyond the typical peak period traffic flow monitoring.

4.4.1 Closed Circuit Television (CCTV) Cameras

The City of Lincoln should continue to upgrade existing locations as needed and deploy additional CCTV cameras at priority arterial roadway intersections. This provides a way to remotely monitor the conditions of an intersection and if necessary, dispatch equipment and personnel to repair equipment failures or assist in coordinated incident management. The ability to view real-time conditions at an intersection from an operations center or workstation provides the operator with the ability to troubleshoot certain conditions as they occur. The live images can be shared with other departments (fire or police) or with adjacent agencies to assist with regional traffic management.

4.4.2 Dynamic Message Signs (DMS)

In similar fashion to the CCTV cameras, the City should look to implement additional DMS at strategic locations to provide valuable information including construction project traffic control and detour information, special event traffic management, and public safety announcements. These signs should be prioritized at major ingress/egress points to the city and amongst major commuter routes for events.


Legend
Hub Locations
Single Mode Fiber Cable
N
W
E
S
NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST
ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD
80
180
6
34
77
2
43
15-M
15-A
15-C
15-H
15-V
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79
CBD \ West Haymarket
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Q ST
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N ST
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K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
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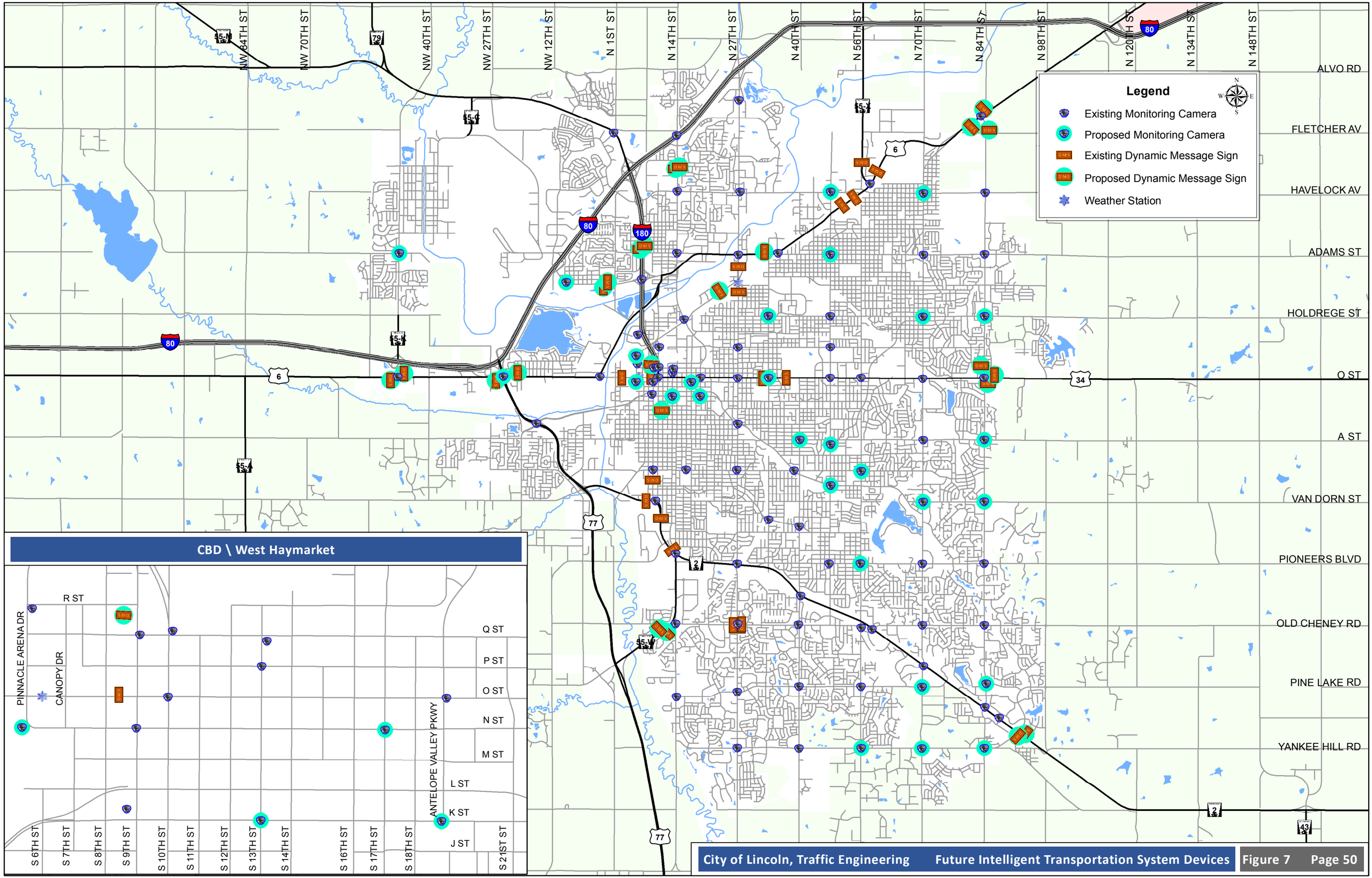
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST

4.4.3 Condition Detection and Warning Systems

Based upon the current status of the ice detection and warning systems, and follow up discussions with Street Maintenance, it is recommended to update the minor server requirements for these existing sites. In addition, developing cost information and potential project design for a research and development project for installation of remote weather information systems (RWIS) sites at key locations is also desired. The current condition systems are non-intrusive and can provide a wide array of temperature and roadway surface state information. Through deployment of other less expensive sensor technologies that are linked to a database, additional detailed climate information can be tracked to better prepare for winter snow operations. Traffic Engineering and Street Maintenance will review potential locations that are near existing communications and power service, that would be a lower cost implementation. Figure 7 illustrates the future ITS devices for the traffic management system.

RWIS Pavement Sensors


Legend
Existing Monitoring Camera
Proposed Monitoring Camera
Existing Dynamic Message Sign
Proposed Dynamic Message Sign
Weather Station
NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST
ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
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ANTELOPE VALLEY PKWY
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S 18TH ST
S 21ST ST

4.5 Transit Signal Priority (TSP)

Transit signal priority (TSP) uses technology on the transit vehicle and in traffic signal controllers to improve transit operation with reduced trip times and delays caused by traffic signal operation. As buses approach a traffic signal, a signal is sent to the intersection controller requesting priority based on specific, user-defined requirements. Within limits potentially set to coordinate with the actual traffic counts at an intersection, the green time for the transit vehicle approach can be shifted or extended.

TSP allows buses to be granted priority service at selected intersection. The long queues restricting the bus progress could be flushed through the signalized intersection(s). Buses would suffer fewer schedule disruptions due to traffic congestion at traffic signal controlled intersections, and the reliability of service would improve. TSP is an important component of Bus Rapid Transit (BRT). The goal of BRT is to decrease transit vehicle travel times along an entire corridor in order to make transit more appealing to commuters. BRT is often implemented in concert with Next Bus Arrival Signs and fewer bus stops.

TSP provided to small fleets and select intersections can be deployed at a relatively low cost. A number of equipment strategies can be used including: strobe light-based installations such as those already used for emergency vehicles in the City, dedicated short range communications (DSRC) based transponders, GPS based systems, and wireless radio frequency (RF) transmitters communicating with receivers at the controller cabinet.

Some relatively minor traffic signalization infrastructure changes may be required. These may include the addition of left or right-turn signals at some intersections. Alterations in the “normal” signal operation can be identified for the signalized intersections within the corridor on an intersection-by-intersection basis. Priority is distinct from pre-emption in that a priority call can be accommodated without disrupting coordination; however, in order to provide the necessary slack time in the cycle, a longer cycle length must be used than may otherwise have been provided, which has the effect of slightly increasing delay to other users. Traffic Engineering should coordinate with StarTran to facilitate evaluation of TSP, or other transit projects as needed.

4.6 Transportation System Management - Recommended

The following subsections describe the recommended system staffing, facilities, maintenance and management capabilities that the City of Lincoln should implement to provide acceptable service and proactive traffic management to the citizens of Lincoln.

4.6.1 Staffing

Based upon the existing conditions summary of staffing resources included in Section 2 of this plan, further evaluation of proposed structure was conducted. As identified previously in section 3, information summarized by both the FHWA and ITE includes industry standards for staffing based upon the magnitude of system infrastructure. These recommendations summarize one traffic engineer for every 75 to 100 signals, and one signal technician for every 40 to 50 signals, in order to maintain proper operations and maintenance of the system.

In addition, a review of Peer Cities was conducted to identify other agency characteristics within their specific Traffic Engineering Departments or other relevant traffic-specific operating divisions. Information provided by the agencies, and other comments gathered from management staff and traffic engineers provided valuable insight and similar discussion amongst many. A summary matrix of key comparative data is included below.

Peer City Traffic Engineering Staff Comparison

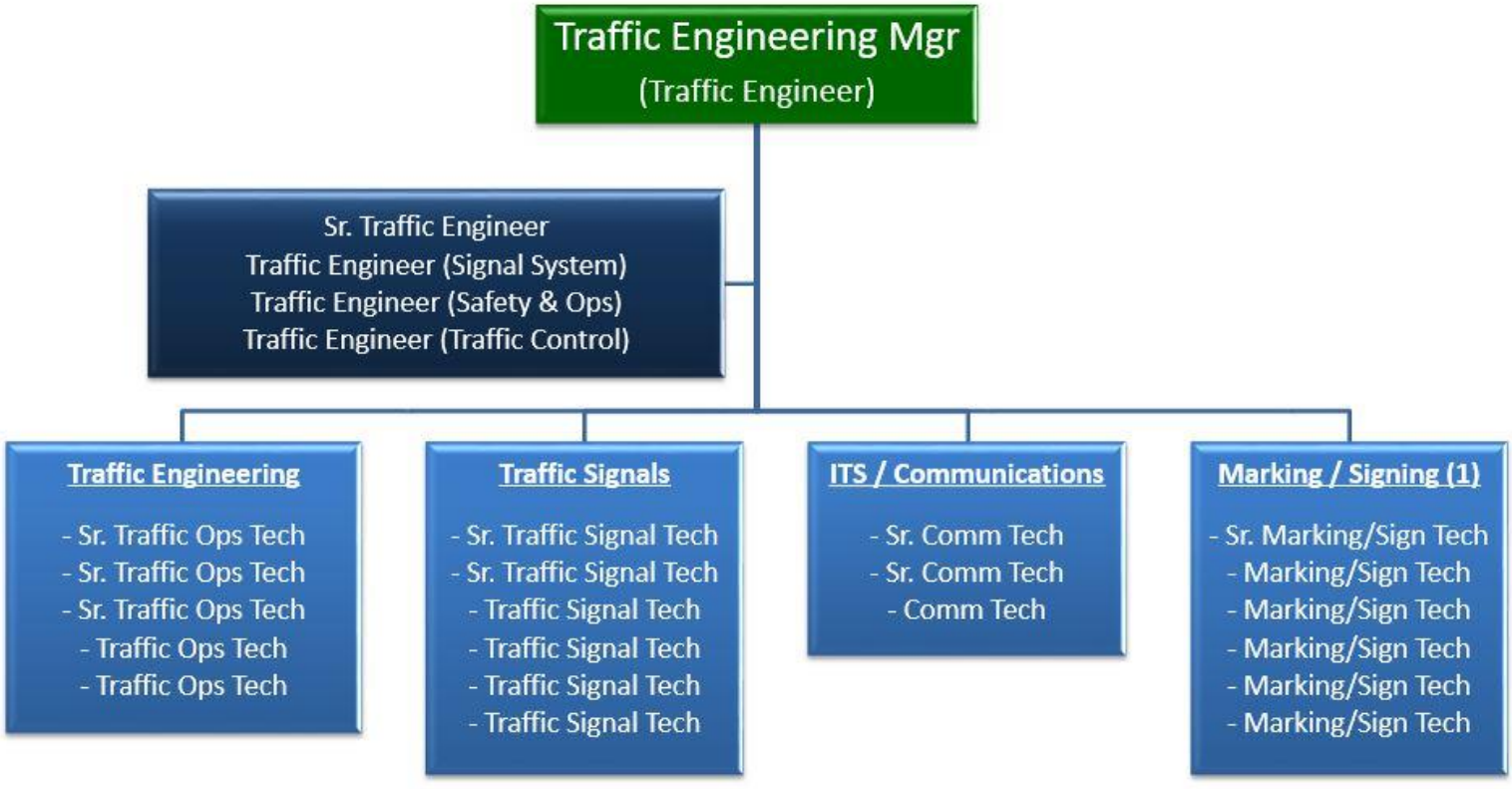
	Madison, WI	Fort Collins, CO	Overland Park, KS	Springfield, MO	Chandler, AZ	Omaha, NE	Lincoln, NE
STATS							
Population	243,344	155,400	181,300	165,000	249,146	446,599	268,738
Number of Traffic Signals	**350**	**170**	**204**	**220**	**218**	**750**	**430**
Service Area (sq miles)	76.79	56.61	75.6	88.2	57.9	127.09	90.42
Street Miles	1,702	594	902	1,200	1,380	4,450	2,800
City Traffic Engineer	1	1	1	1	1	1	1
Asst. City Traffic Engineer	1	0	1	1	0	0	0
Traffic Engineer	8	6	4	7	3	8	0
Subtotal Traffic Engineers	**10**	**7**	**6**	**9**	**4**	**9**	**1**
Traffic Eng Techs	9	3	7	5	4	6	4
Traffic Mgmt Center	YES	YES	YES	YES	YES	YES	NO
Traffic Signal Techs	5	6	8	7	5	10	4
Communications Techs	6	1	2	2	1	4	2
Traffic Sign/Marking Techs	7	7	5	9	7	30	7
Tech/Admin.	2	2	2	1	2	3	0
Total Traffic Staff	**39**	**26**	**30**	**33**	**23**	**62**	**18**
Signals per Traffic Engrs	**35.0**	**24.3**	**34.0**	**24.4**	**54.5**	**83.3**	**430.0**
Signals per Signal Techs	**70.0**	**28.3**	**25.5**	**31.4**	**43.6**	**75.0**	**107.5**

As illustrated in the matrix above, it is noted that based upon the numbers of traffic signals and basic size parameters of the City of Lincoln system, the gaps currently experienced in daily work flow and less than desirable service are quite real.

At present, there is a gap in both the availability of person-hours, and also the technical engineering capabilities to respond sufficiently. This includes response to inquiries from the public and other stakeholders, and also internal program management.

> ***Comment from Peer City Traffic Engineer:***
>
> ***"The staffing situation you describe for Lincoln is not functional. For a City with 400 plus traffic signals, there is no sustainable way to manage a program with one Traffic Engineer".***

Discussion with many of the other peer cities also revealed that while they did have additional licensed engineering staff within the various Traffic departments, several of the traffic engineers were focused on other program elements besides the traffic signal system. This included marking and signing reviews, safety program work, facilitation with local schools, special event management, interaction with the public on projects and inquiries, and traffic studies resulting from data collection. These are all tasks attempted to be undertaken by existing Lincoln Traffic Engineering staff as well, with still a primary need to better operate and manage the traffic signal and ITS network. Based upon the existing gaps in service, identified system goals, and sustainability of traffic management in the City of Lincoln, the recommended functional organization chart is illustrated below.



(1) Coordinated with County wide services

The implementation of this reorganization and supplemental staffing will allow for improved response to the motorists of Lincoln, and acceptable program management. By assigning additional Engineering staff, it will further the TMMP goals in moving traffic safer and more efficient. Improvements in the following core areas will be accomplished:

- Timely response to public & other stakeholder traffic inquiries
- Proactive Traffic Engineering budget planning & programming
- Corridor by corridor, arterial street signal re-timing program
- Staffing of the Public Works Operations Center during peak period traffic
- Improved city wide fiber optic and IT network support service
- Timely analysis & implementation of traffic operations and safety projects
- Specification and deployment of sustainable equipment in the field
- Evaluation of new technologies for improved traffic management
- Development of additional safe walk & bike initiatives
- Streamlined coordination with Lincoln Public School traffic issues
- New focus on improved Special Event Management program
- Vast efficiencies in Asset Management of infrastructure

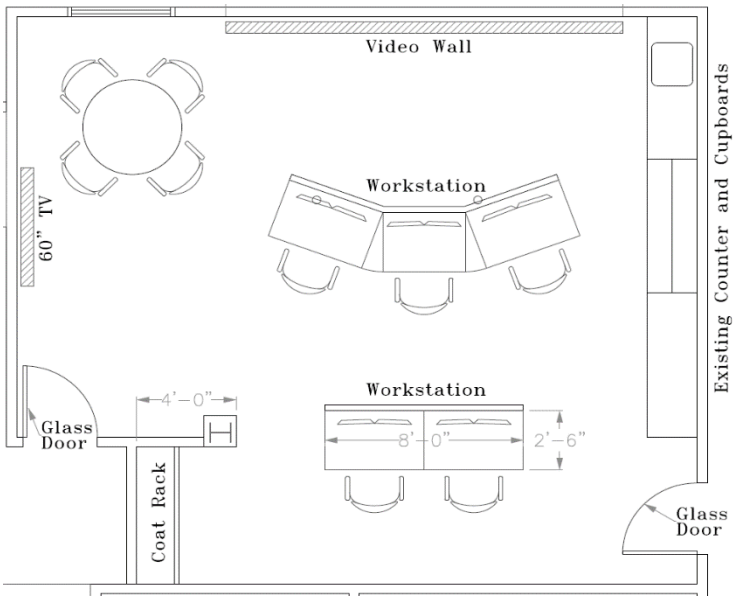
While this staffing and resource solution greatly improves the function and capabilities of the Traffic Engineering Division, it also remains lean and efficient by industry standards. The exhibit at right illustrates the updated comparative statistics with the new staffing organization.

This structure allows for providing excellent service to the citizens of Lincoln, while also remaining fiscally responsible. Providing staff with core competencies in the right job functions will lead to vast improvements in the overall traffic management system. Ultimately, this results in a safer and more efficient transportation network, and a program vital to a desirable community.

	Lincoln, NE
STATS	
Population	268,738
Number of Traffic Signals	430
Service Area (sq miles)	90.42
Street Miles	2,800
City Traffic Engineer	1
Asst. City Traffic Engineer	0
Traffic Engineer	4
Subtotal Traffic Engineers	5
Traffic Eng Techs	5
Traffic Mgmt Center	YES
Traffic Signal Techs	6
Communications Techs	3
Traffic Sign/Marking Techs	6
Tech/Admin.	0
Total Traffic Staff	25
Signals per Traffic Engrs	86.0
Signals per Signal Techs	71.7

4.6.2 Public Works Operations Center

With the improvements to traffic management system infrastructure will come enhanced capabilities to monitor traffic, adjust signal timings, and adequately coordinate with other responding agencies to special events, and unplanned incidents. The current make shift room at the MSC that is utilized during the snow season has been redesigned internally by the Traffic Team and will be purposed as a joint use facility deemed the Public Works Operations Center (PWOC). This room will house improved workstations and video display capabilities for the City's camera network. While Lincoln is behind the eight ball compared to peer cities currently in regards to an operations facility, this simple implementation of user friendly displays and operator equipment will provide vast improvements. A collection point for management staff and responders during weather events (such as snow and the recent flooding events), and also day to day traffic management and data collection activities to respond to public inquiries and improve upon project tracking.



PWOC

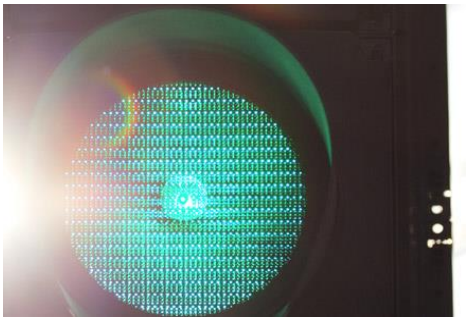
4.6.3 Traffic Signal Timing

As presented in the existing system evaluation, the City of Lincoln has not conducted formal signal optimization timing on a corridor wide basis in over a decade. This is a priority need that should be done annually with both internal staff and external (consultant) support. Traffic Engineering has updated major data collection program efforts that can help feed data into this effort and streamline the schedule and cost implications.

Traffic signal optimization has documented benefit/cost ratios of 15:1 to 20:1 on the low end, and over 40:1 on the upper end. These benefits of signal re-timing are significant. To supplement the proposed communication and traffic signal system management improvements, efficient traffic operations can provide motorists with decreased travel times, enhanced safety, and lower emissions.

The primary reason municipalities consider traffic signal retiming is to reduce congestion and driver delay, but this is just one of many benefits of properly timed traffic signals. Other important benefits include the following:

- According to studies by the Institute of Transportation Engineers, traffic signal retiming reduces motorist delay at an intersection by 15-37 percent and reduces the motorist's overall travel time at least 13 percent.
- Reduced travel time and delay, in turn, decreases motorist frustration.
- The Institute of Transportation Engineers also estimates that properly timed signals decrease fuel consumption by nine percent.
- Properly timed signals reduce vehicle emissions, as well, thereby improving air quality in the City of Lincoln.
- In addition, properly timed signals reduce the number of collisions on municipal streets by producing smoother traffic flow and fewer stops. Smoother traffic flow also reduces driver aggression.
- Delaying the need for major capacity improvement construction and lengthening the expenditure of Capital Improvement Program funds.
- Improving traffic flow on signalized streets minimizes the number of drivers who take side streets in order to avoid congestion on the main corridors. This will then minimize the congestion and safety problems (as well as wear and tear) caused by use of these streets beyond what they were designed to handle.



Basic timing settings, such as minimum green, yellow-change, all-red clearance, pedestrian walk and clearance intervals, specify certain timing parameters that operate during free or coordinated operation to safely and efficiently serve vehicle and pedestrian traffic. Some settings are very important for the safe operation of an intersection and may result in significant liability if they do not meet minimum standards. As such, it is recommended that the City continue to dedicate staff for evaluation of existing timing settings to ensure that they adhere to the latest MUTCD and ITE guidelines.

Priority corridors for traffic signal optimization have been identified which will include development of new timing plans during peak and off peak traffic volume periods. New timings and phasing will be deployed upon implementation of new system software and hardware. Figure 8 illustrates the priority corridors.

NW 84TH ST
NW 70TH ST
NW 40TH ST
NW 27TH ST
NW 12TH ST
N 1ST ST
N 14TH ST
N 27TH ST
N 40TH ST
N 56TH ST
N 70TH ST
N 84TH ST
N 98TH ST
N 120TH ST
N 134TH ST
N 148TH ST

ALVO RD
FLETCHER AV
HAVELOCK AV
ADAMS ST
HOLDREGE ST
O ST
A ST
VAN DORN ST
PIONEERS BLVD
OLD CHENEY RD
PINE LAKE RD
YANKEE HILL RD

Legend

- Signalized Intersection
- Pedestrian Signal
- Flashing Beacon
- Rectangular Rapid Flashing Beacon
- NDOR Signal
- Corridor

CBD \ West Haymarket

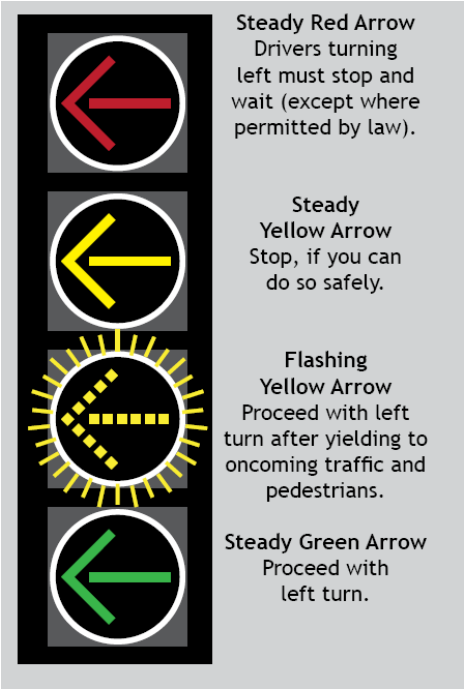
R ST
Q ST
P ST
O ST
N ST
M ST
L ST
K ST
J ST
PINNACLE ARENA DR
CANOPY DR
ANTELOPE VALLEY PKWY
S 6TH ST
S 7TH ST
S 8TH ST
S 9TH ST
S 10TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S 14TH ST
S 16TH ST
S 17TH ST
S 18TH ST
S 21ST ST

4.6.4 Signal Phasing

In concert with the implementation of new optimized signal timings, also comes the opportunity to evaluate and implement improved signal phasing. One such application that is the new standard nationwide, is the deployment of the flashing yellow arrow (FYA) left-turn signal. This type of left-turn signal indication has been shown to be safer and more efficient than the standard "5-ball" protected/permitted left-turn phase that is currently used throughout Lincoln. Many agencies across the U.S. have banned the use of the 5-ball configuration that Lincoln currently uses, and have opted to standardize on the new recommended FYA indication. The Federal Highway Administration has documented that the FYA indication:

- Helps to prevent crashes
- Moves more traffic through an intersection
- Provides additional traffic management flexibility (allows lead/lag operation)

Existing 5-Section Indication



4-Section FYA Indication

The FYA signal indication is not currently compatible with standard settings in the City's traffic signal controllers and local software. Lincoln should program the deployment of FYA left-turn signal indications upon implementation of new ATMS software and controllers.

4.6.5 Traffic Signal Rehabilitation Program

Based upon the current age of the City of Lincoln traffic signal system poles and structures a refreshed funding perspective should be allocated for the replacement of signals in a more timely fashion. Utilizing national average data, the city's current signalized intersection assets are valued at near $115M, (an important asset to maintain).

Even with typical signal pole warranty at 25 years, and an assumed ideal replacement life of 30 years for city pole standards, Lincoln has fallen behind in the upkeep of this asset. Based on the number of signals in the City, Lincoln would need to replace approximately 15 signals each year, just to keep the lifespan at 30 years. The unfortunate reality is that the current replacement schedule is less than half that many each year. And, there are currently over 170 signals that are already older than 30 years of age.

One year ago, due to age and condition, one of Lincoln's mast arms fell onto a car on the street below. Because of this occurrence, Traffic Engineering initiated a non-destructive structural testing contract with consultant help to evaluate some 200-plus poles across the City. This data has been helpful in identifying next rounds of replacement intersections but funding will need to be prioritized.

As part of on-going evaluations of candidate signal replacement projects, the analysis of roundabouts are being considered at locations that would allow for favorable operations. This is another tool to be utilized in the battle against longer term signal maintenance and provide a more sustainable solution to traffic operations and safety.

4.6.6 Pedestrian and Bike Safety

While much of the enhancements to pedestrian and bike safety will come with additional Complete Streets initiatives, improved public education, and construction of dedicated facilities, there are components that are being recommended in the traffic system.

The implementation of the City's first rectangular rapid flashing beacons, or RRFB's have taken place. These are located at dedicated pedestrian and trail crossings and consist of an active warning device (flashing strobe) to warn motorists of crossing activity in the roadway. More information on these devices is included on the City of Lincoln website at: http://lincoln.ne.gov/city/pworks/engine/traffic/rrfb/#s but the data so far has indicated these are working and being used frequently. Plans to identify more priority locations for these devices within the traffic management system are underway. The City of Lincoln should continue to identify these and other potential solutions to heighten the awareness of our pedestrian and bicycle users.

“A year from now you will wish you had started today”

- *Karen Lamb*

5.0 Implementation

This plan has highlighted many of the existing challenges with the overall traffic management systems in the City of Lincoln. While there are indeed challenges, there are obvious opportunities. Many of these needed upgrades and process improvements can provide great benefit and service to the community at large – not just within one small project area, but the entire city. Often times it is a struggle to prioritize needed arterial roadway projects, or intersection improvements, or small segments of rehab because those projects do touch such a small geographic area. It may seem quite easy in comparison to prioritize system upgrades that will impact each and every commuter city wide.

Multiple research studies, continuous web data compilations, and sources of "big data", all reveal that in Quality of Life surveys, Quality of Life rankings, or "Best Places to Live" listings – all have one thing in common. Traffic. Several similar variables are typically listed:

- Traffic commute index
- Average travel commute
- Traffic volumes
- Traffic delays
- Travel times for commercial vehicles

Texas Transportation Institute (TTI) estimates that American commuters within cities collectively lost 5.5 billion hours stuck in traffic annually, meaning the average commuter lost nearly a week to sitting in traffic. TTI's calculations further suggest that traffic congestion caused American commuters to purchase an extra 2.9 billion gallons of fuel, costing them more than $120 billion in added fuel costs, and wasted time.

And it's not just the delays, safety is important too. From a local perspective, based on the most recent citywide crash study, the annual societal cost of crashes in the City of Lincoln was staggering. Over 7,000 crashes, resulting in costs over $279,000,000. One year. By making upgrades to the system, improving traffic flow, and enhancing safety by a mere 10%, saves nearly $30M to the citizens of Lincoln.

Finally, based upon the quite conservative, quite easy to achieve benefit/cost ratios associated with signal optimization improvements, the system can achieve a positive benefit over $22M.

A bulleted list of the priority recommendations are included on the following page. A comparison and opinion of probable costs for these items are also included.

The following recommended implementation of improvements is summarized below:

ATMS Hardware and Software

- Procure and integrate a modern ATMS software to operate, monitor, manage, and maintain traffic signals and ITS field devices.
- Replace all existing traffic signal controllers with advanced traffic controller (ATC) protocol that are NTCIP compliant with appropriate local controller software in the field.
- Upgrade necessary traffic signal cabinets to TS2, Type I minimum standard that allows for compatibility with future detection needs and IP communications infrastructure.
- Implement operational hardware and software in the PWOC for management of the system.

Vehicle Detection and Signal Phasing

- Upgrade vehicle detection at existing faulty locations citywide with a mix of non-intrusive detectors (cameras and/or microwave radar) and preformed loops under pavement as needed.
- Continue annual replacement and conversion of mainline corridor detection to cameras for stop bar detection, and enable viewing of intersection approaches with the camera management software.

Signal Optimization Program

- Implement cyclical signal optimization program enabling primary arterials to be retimed every 3-5 years.
- Evaluate and install updated signal phasing hardware (Flashing Yellow Arrow) at all required protected/permitted left-turn locations.
- Develop City of Lincoln standard traffic signal optimization guidelines for internal and consultant staff use on signal timing projects.
- Continue deploying emergency vehicle preemption (EVP) systems per the available funding in place with various public safety agencies.
- Coordinate with StarTran to facilitate evaluation of transit signal priority (TSP), bus rapid transit (BRT), or other transit projects as needed.

Intelligent Transportation System (ITS) Devices

- Deploy closed-circuit television (CCTV) cameras with pan-tilt-zoom (PTZ) capabilities across the city at the intersections of arterial roadways, as well as other locations to monitor traffic performance and incidents.

- Deploy arterial DMS and trailblazer signs on primary routes for incident management, special events, congestion management, and travel time information.
- Deploy additional system sensors (microwave radar and Bluetooth/Wi-Fi) as needed for automated travel time collection and performance measurement.

Communications System

- Continue construction of the redundant, self-healing gigabit Ethernet fiber optic network.
- Implement wireless communications to signals not located on arterial roadways.
- Establish internet protocol (IP) based communications on the network to all devices.

Traveler and Public Information

- Install kiosks or other traffic-related information displays at City Hall or other high-activity areas to display important traffic/travel condition information for daily and event traffic.
- Explore software that integrates a future parking management and information system with the proposed central traffic signal management system software.
- Evaluate methods to quickly disseminate emergency traffic information via the City's website, social media, and other apps.

Pedestrian & Bicycle Safety

- Continue the evaluation of pedestrian signals at key crossing locations – implement rectangular rapid flashing beacons (RRFB).
- Implement necessary system detection for bicycle facilities (cycle tracks, bike lanes) to monitor efficiency and operations.
- Develop additional public information regarding ped/bike safety programs and planned facilities.

Traffic Signal Rehabilitation

- Program annual replacements of aging traffic signal infrastructure based on structure lifespan and on-going inspection results, and remove unwarranted signals.
- Look to implement roundabout intersection control at existing traffic signal locations as relevant for traffic and environmental conditions.
- Continue non-destructive testing of structures and signal pole inspection program.

Traffic System Management

- Program additional staff to provide one PWOC operator to monitor the traffic signal system and related devices from 6 am to 9 am and 3 pm to 6 pm, Monday through Friday, at a minimum.
- Program additional traffic engineering and technician staff to adequately manage the system.

- Continue to dedicate staff for evaluation of existing timing settings to ensure that they adhere to the latest Manual on Uniform Traffic Control Devices (MUTCD) and industry best practices.
- Optimize traffic signal coordination plans, at a minimum, every 3 to 5 years based on traffic volume and pattern fluctuations.
- Determine the feasibility and/or benefits of installing an adaptive or responsive system on corridors with closely-spaced signals and fluctuating, unpredictable traffic volumes.
- Develop, implement, monitor, and revise timing plans as necessary to accommodate special event traffic around major traffic-generating facilities.
- Staff adequately to respond to public inquiries with technical expertise in a timely fashion.

Maintenance

- Program additional staff positions to properly maintain the communications network and additional ITS devices deployed in the field.
- Continue to perform general traffic signal maintenance using internal maintenance staff, including fiber optic cable repairs.
- Continue to develop and implement a comprehensive and regular preventative maintenance program.
- Provide training for maintenance and operations staff to adequately maintain the traffic signal system.

By implementing the above recommendations, and continuing to proactively plan, fund, operate, and maintain a growing traffic management system, we will provide the citizens of Lincoln with a vastly improved travel experience. Many of the pieces are coming together. With additional support, the safe and efficient movement of all modes of traffic will result in sustainability of the transportation network and improved quality of life.

A six year CIP projection was used to summarize the proposed costs. It is included on the following page. These items include an approximate $34M expenditure over 6 years, including a $23M estimate on the signal rehabilitation program which is the single largest cost. The entire remainder of the program, impacting city wide operations and safety, over a 6 year period could be delivered for the construction cost of approximately one mile of urban arterial.

City of Lincoln
Traffic Management Modernization Projects
6 Year Budget

ID	Item #	Overall Project & Components	Qty	Unit	Price Per Unit	Total	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
A		***Advanced Traffic Management System (ATMS)***																
	1	Central Signal System Software	1	LS	$600,000	$600,000	1	$600,000	0	$0	0	$0	0	$0	0	$0	0	$0
	2	Local Controller Upgrades	430	EA	$3,500	$1,505,000	430	$1,505,000	0	$0	0	$0	0	$0	0	$0	0	$0
	3	Annual Maint./Support	6	EA	$15,000	$90,000	1	$15,000	1	$15,000	1	$15,000	1	$15,000	1	$15,000	1	$15,000
						$2,195,000		**$2,120,000**		**$15,000**		**$15,000**		**$15,000**		**$15,000**		**$15,000**
B		***Public Works Operations Center (PWOC)***																
	4	Equipment, Cam Mgmt Software, Integration	1	LS	$160,000	$160,000	1	$160,000	0	$0	0	$0	0	$0	0	$0	0	$0
						$160,000		**$160,000**		**$0**		**$0**		**$0**		**$0**		**$0**
C		***Intersection Detection Improvement***																
	5	Vehicle Detection System	110	EA	$20,000	$2,200,000	25	$500,000	25	$500,000	25	$500,000	20	$400,000	10	$200,000	5	$100,000
	6	Non-intrusive Detector	40	EA	$6,000	$240,000	8	$48,000	8	$48,000	8	$48,000	8	$48,000	8	$48,000	0	$0
						$2,440,000		**$548,000**		**$548,000**		**$548,000**		**$448,000**		**$248,000**		**$100,000**
D		***Intersection Operational & Safety Data***																
	7	Signal Optimizaton Corridors	10	EA	$40,000	$400,000	5	$200,000	5	$200,000	0	$0	0	$0	0	$0	0	$0
	8	Count Program	6	EA	$180,000	$1,080,000	1	$180,000	1	$180,000	1	$180,000	1	$180,000	1	$180,000	1	$180,000
	9	Citywide Crash Evaluation	3	EA	$95,000	$285,000	1	$95,000	0	$0	1	$95,000	0	$0	1	$95,000	0	$0
						$1,765,000		**$475,000**		**$380,000**		**$275,000**		**$180,000**		**$275,000**		**$180,000**
E		***Flashing Yellow Left Safety Program***																
	10	Heads, wiring, cabinet mods. (200 ints)	200	EA	$8,000	$1,600,000	0	$0	30	$240,000	30	$240,000	40	$320,000	50	$400,000	50	$400,000
						$1,600,000		**$0**		**$240,000**		**$240,000**		**$320,000**		**$400,000**		**$400,000**
F		***ITS Modernization***																
	11	CCTV Monitoring Cameras	40	EA	$4,000	$160,000	10	$40,000	10	$40,000	10	$40,000	5	$20,000	5	$20,000	0	$0
	12	Cabinets	50	EA	$9,000	$450,000	5	$45,000	10	$90,000	10	$90,000	10	$90,000	10	$90,000	5	$45,000
	13	Signal Monitors (MMU)	120	EA	$1,300	$156,000	20	$26,000	20	$26,000	20	$26,000	20	$26,000	20	$26,000	20	$26,000
	14	Arterial DMS	20	EA	$50,000	$1,000,000	0	$0	4	$200,000	4	$200,000	4	$200,000	4	$200,000	4	$200,000
	15	Portable DMS	20	EA	$14,000	$280,000	0	$0	4	$56,000	4	$56,000	4	$56,000	4	$56,000	4	$56,000
						$2,046,000		**$111,000**		**$412,000**		**$412,000**		**$392,000**		**$392,000**		**$327,000**
G		***Traffic Signal Communications Upgrades***																
	16	Managed Switch	300	EA	$1,500	$450,000	0	$0	100	$150,000	50	$75,000	50	$75,000	50	$75,000	50	$75,000
	17	Pull Box, Splicing & Enclosures	200	EA	$3,000	$600,000	0	$0	50	$150,000	50	$150,000	50	$150,000	25	$75,000	25	$75,000
						$1,050,000		**$0**		**$300,000**		**$225,000**		**$225,000**		**$150,000**		**$150,000**
H		***Traffic Signal Rehabilitation Program***																
	18	Rectangular Rapid Flashing Beacons (RRFB's)	24	EA	$24,000	$576,000	4	$96,000	4	$96,000	4	$96,000	4	$96,000	4	$96,000	4	$96,000
	19	Traffic Signal Rebuilds (15 per year)	100	EA	$225,000	$22,500,000	15	$3,375,000	15	$3,375,000	15	$3,375,000	15	$3,375,000	20	$4,500,000	20	$4,500,000
						$23,076,000		**$3,471,000**		**$3,471,000**		**$3,471,000**		**$3,471,000**		**$4,596,000**		**$4,596,000**
						$34,332,000		**$6,885,000**		**$5,366,000**		**$5,186,000**		**$5,051,000**		**$6,076,000**		**$5,768,000**

APPENDIX A

Asset Management Inventory

Traffic Engineering Asset Management Database

Intersection	ID#	Sort E/W	Sort N/S	ACE Maintenance	Overhead Maintenance	Database	Intersection Facility	Built or Rebuilt	DMS	Span Wire	TS1 - C Cabinet Size	TS1 - B Cabinet Size	TS1 - A Cabinet Size	Other Cabinet Size	M52 Controller Type	M40 Controller Type	M03 Controller Type	Other Controller Type	16 Ch. (LCD) Conflict Monitor Type - (LED or LCD)	16 Connected Conflict Monitor Type - (LED or LCD)	12 Ch. Conflict Monitor Type - (LED or LCD)	6 Ch. Conflict Monitor Type - (LED or LCD)	3 Ch. Conflict Monitor Type - (LED or LCD)	Other Conflict Monitor Type - (LED or LCD)
10th & D	10E11S	10E	11S	2015		2014	Traffic Signal	1982	-	YES	-	-	SE	-	-	#37342	-	-	-	-	-	-	LCD	-
10th & Charleston	10E12N	10E	12N	2015		2014	Traffic Signal	1985	-	-	NE	-	-	-	#115322	-	-	-	-	-	LCD #011119833	-	-	-
10th & A	10E14S	10E	14S	2015		2014	Traffic Signal	1985	-	YES	-	-	SE	-	-	-	#1669	-	-	-	-	-	LED #9105-352	-
10th & O	10E1N	10E	01N	2015		2014	Traffic Signal	1998	-	-	SE	-	-	-	-	#69794	-	-	-	-	LCD #060606156	-	-	-
10th & Sun Valley	10E20N	10E	20N	2015	2014	2014	Traffic Signal	2009	-	YES	-	SW	-	-	#110286	-	-	-	-	-	LCD #020428223	-	-	-
10th & South	10E21S	10E	21S	2015		2014	Traffic Signal	2008	-	-	SE	-	-	-	#97127	-	-	-	-	-	LCD #9203-582	-	-	-
10th @ Park	10E24S	10E	24S	2015	2014	2014	Pedestrian	1986	-	YES	-	-	SE	-	-	-	#2061	-	-	-	-	-	LED #9105-462	-
10th & Van Dorn	10E28S	10E	28S	2015	2014	2014	Traffic Signal	2009	-		SW	-	-	-	#110280	-	-	-	-	-	LCD #9602-581	-	-	-
10th & P	10E2N	10E	02N	2015		2014	Traffic Signal	1998	-	-	SE	-	-	-	-	#60701	-	-	-	-	LCD #9307-527	-	-	-
10th & N	10E2S	10E	02S	2015		2014	Traffic Signal	2013	-	-	SE	-	-	-	-	-	#4622	-	-	-	-	-	LCD #000310587	-
10th & High	10E32S	10E	32S	n/a	n/a	-	DMS	-	YES	-	-	SE	-	-	-	-	-	-	-	-	-	-	-	-
10th & Q	10E3N	10E	03N	2015		2014	Traffic Signal	2012	-	-	NE	-	-	-	#131254	-	-	-	-	-	LCD #120203114	-	-	-
10th & M	10E3S	10E	03S	2015		2014	Traffic Signal	2012	-	-	-	-	SE	-	#97025	-	-	-	-	-	-	-	LCD	-
10th & L	10E4S	10E	04S	2015		2014	Traffic Signal	1995	-	-	NW	-	-	-	#125844	-	-	-	-	-	LED	-	-	-
10th & K	10E5S	10E	05S	2015		2014	Traffic Signal	1995	-	-		-	NW	-	-	#67863	-	-	-	-	-	-	LCD	-
10th & Lincoln Mall (J)	10E6S	10E	06S	2015	2014	2014	Traffic Signal	1995	-	-	-	-	NE	-	-	-	#2107	-	-	-	-	-	LCD	-
10th & G	10E8S	10E	08S	2015		2014	Traffic Signal	1994	-	YES	-	-	NW	-	-	-	#1000	-	-	-	-	-	LCD	-
11th & A	11E14S	11E	14S	n/a	2014	2014	Flasher	1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11th & O	11E1N	11E	01N	2015		2014	Traffic Signal	1996	-	-	-	NE	-	-	-	#73540	-	-	LCD #131107808	-	-	-	-	-
11th & Saunders	11E24N	11E	24N	2014		2014	Traffic Signal	1994	-	YES	-	-	SE	-	#91503	-	-	-	-	-	-	-	LED	-
11th & Cornhusker Hwy	11E25N	11E	25N	2014		2014	Traffic Signal	1995	-	-	NE	-	-	-	#107503	-	-	-	-	-	LCD #107503	-	-	-
11th & P	11E2N	11E	02N	2015		2014	Traffic Signal	1998	-	-	SW	-	-	-	-	#41218	-	-	-	-	LCD #050209782	-	-	-
11th & N	11E2S	11E	02S	2015		2014	Traffic Signal	1972	-	-	-	-	SE	-	#94500	-	-	-	-	-	-	-	LED #9105-399	-
11th & Q	11E3N	11E	03N	2015		2014	Traffic Signal	1994	-	-	-	-	NE	-	#127616	-	-	-	-	-	-	-	LCD	-
11th & M	11E3S	11E	03S	2015		2014	Traffic Signal	1995	-	-	-	-	SE	-	#96153	-	-	-	-	-	-	-	LCD	-
11th & L	11E4S	11E	04S	2015		2014	Traffic Signal	1995	-	-	-	-	SE	-	-	-	#4250	-	-	-	-	-	LCD	-
11th & K	11E5S	11E	05S	2015		2014	Traffic Signal	1995	-	-	-	-	NE	-	-	-	#9203-566	-	-	-	-	-	LCD	-
12th & O	12E1N	12E	01N	2015		2014	Traffic Signal	1996	-	-	-	NW	-	-	-	#79830	-	-	LCD #081203920	-	-	-	-	-
12th & P	12E2N	12E	02N	2015		2014	Traffic Signal	1998	-	-	SE	-	-	-	-	-	#1344	-	-	-	LCD #010611992	-	-	-
12th & N	12E2S	12E	02S	2015		2014	Traffic Signal	2004	-	-	SE	-	-	-	#89030	-	-	-	-	-	LCD #9203-577	-	-	-
12th & Q	12E3N	12E	03N	2015		2014	Traffic Signal	1976	-	-	-	-	NE	-	#130351	-	-	-	-	-	-	-	LCD	-
12th & M	12E3S	12E	03S	2015		2014	Traffic Signal	1995	-	-	-	-	NE	-	#	-	-	-	-	-	-	-	LCD	-
12th & L	12E4S	12E	04S	2015		2014	Traffic Signal	1995	-	-	-	-	SE	-	-	#67180	-	-	-	-	-	-	LCD	-
12th & K	12E5S	12E	05S	2015		2014	Traffic Signal	1995	-	-	-	-	NE	-	-	-	#4639	-	-	-	-	-	LCD	-
Capitol Beach Blvd & West O	12W1N	12W	01N	2014		2014	Traffic Signal	1995	-	-	SW	-	-	-	#870313	-	-	-	-	-	LCD #071008757	-	-	-
NW 12th & Cornhusker Hwy	12W26N	12W	26N	2015		2014	Traffic Signal	1997	-	-	SW	-	-	-	#110324	-	-	-	-	-	LCD #120503429	-	-	-
NW 12th & Adams	12W30N	12W	30N	2014		2014	Traffic Signal	1997	-	-	NW	-	-	-	#105391	-	-	-	-	-	LCD #020403245	-	-	-
13th & D	13E11S	13E	11S	n/a	n/a	2014	Cabinet Only	1981	-	-	NE	-	-	-	-	-	-	-	-	-	-	-	-	-
13th & A	13E14S	13E	14S	2015		2014	Traffic Signal	1982	-	YES	-	-	SE	-	-	-	#4647	-	-	-	-	-	LCD	-
13th & O	13E1N	13E	01N	2015		2014	Traffic Signal	1996	-	-	-	NE	-	-	-	#67179	-	-	-	-	LCD #9403-402	-	-	-
13th & South	13E21S	13E	21S	2014		2014	Traffic Signal	2007	-	-	SE	-	-	-	#124978	-	-	-	-	-	LCD #030906155	-	-	-
13th @ Saratoga	13E22S	13E	22S	2014		2014	Pedestrian	2002	-	-	-	E	-	-	#174118	-	-	-	-	-	-	LCD #090500296	-	-
13th & Van Dorn	13E28S	13E	28S	2014		2014	Traffic Signal	1990	-	YES	NE	-	-	-	-	-	#7278	-	-	-	LCD #603-535	-	-	-
13th & P	13E2N	13E	02N	2015		2014	Traffic Signal	1998	-	-	NW	-	-	-	-	-	#5173	-	-	-	LCD #040408117	-	-	-
13th & N	13E2S	13E	02S	2015		2014	Traffic Signal	2012	-	-	SE	-	-	-	#88730	-	-	-	-	-	LCD #110806599	-	-	-
13th & Arapahoe	13E34S	13E	34S	2014		2014	Traffic Signal	1982	-	YES	-	-	SW	-	#97341	-	-	-	-	-	-	LED #6030	-	-
Pioneers Blvd & Hwy 2	13E38S	13E	38S	2014	2014	2014	Traffic Signal	2004	-	-	SW	-	-	-	#89034	-	-	-	-	-	LCD #9203-580	-	-	-
13th & Q	13E3N	13E	03N	2015	2014	2014	Traffic Signal	1998	-	-	-	-	NE	-	#130352	-	-	-	-	-	-	-	LED #9105-420	-
13th & M	13E3S	13E	03S	2015		2014	Traffic Signal	1995	-	-	-	-	SE	-	#93654	-	-	-	-	-	-	-	LCD	-
13th & L	13E4S	13E	04S	2015		2014	Traffic Signal	1995	-	-	-	-	SW	-	-	#60694	-	-	-	-	-	-	LCD	-
Warlick & Old Cheney Rd	13E57S	13E	57S	2014		2014	Traffic Signal	1990	-	-	NE	-	-	-	#110998	-	-	-	-	-	LCD#030506816	-	-	-
13th & K	13E5S	13E	05S	2015		2014	Traffic Signal	1995	-	-	-	-	NE	-	-	#73880	-	-	-	-	-	-	LED#9203-565	-
13th & G	13E8S	13E	08S	2015		2014	Traffic Signal	1994	-	YES	-	SE	-	-	-	#73144	-	-	-	-	LCD #901-161	-	-	-
14th & Superior (ES)	14.5E46N	14.5E	44N	2014		2014	Pedestrian	2013	-	-	N	-	-	-	#131697	-	-	-	-	-	LCD #110409764	-	-	-
14th & Salt Creek Rdwy	14E13N	14E	13N	2014		2014	Traffic Signal	2007	-	-	SE	-	-	-	#98670	-	-	-	-	-	LED #6559	-	-	-
14th & Military	14E17N	14E	17N	2014		2014	Traffic Signal	2005	-	-	SE	-	-	-	#104777	-	-	-	-	-	LCD #970703369	-	-	-
14th & O	14E1N	14E	01N	2015		2014	Traffic Signal	1998	-	-	-	-	NE	-	-	#79833	-	-	-	-	-	-	LCD	-
14th & Van Dorn	14E28S	14E	28S	n/a	2014	2014	Flasher	1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14th & P	14E2N	14E	02N	2015		2014	Traffic Signal	1998	-	-	SE	-	-	-	-	-	#2162	-	-	-	LCD #980400701	-	-	-
14th & N	14E2S	14E	02S	2015		2014	Traffic Signal	2012	-	-	SE	-	-	-	#90850	-	-	-	-	-	LCD #9303-131	-	-	-
14th & Adams	14E30N	14E	30N	2015	2014	2014	Traffic Signal	1985	-	YES	SE	-	-	-	#105709	-	-	-	-	-	LCD #9503-340	-	-	-
14th @ Hartley	14E34N	14E	34N	2014		2014	Pedestrian	1998	-	-	-	-	E	-	#124758	-	-	-	-	-	-	-	LED #9105-345	-
14th & Q	14E3N	14E	03N	2015		2014	Traffic Signal	1976	-	-	-	-	NE	-	#131272	-	-	-	-	-	-	-	LED #9203-566	-
14th & M	14E3S	14E	03S	2015		2014	Traffic Signal	1995	-	-	-	-	NE	-	#97346	-	-	-	-	-	-	-	LCD	-
14th & Hwy 2	14E41S	14E	41S	2015		2014	Traffic Signal	2006	-	-	NW	-	-	-	#121396	-	-	-	-	-	LCD #9607-691	-	-	-
14th & Hwy 2	14E41S	14E	41S	n/a	n/a	-	DMS	-	YES	-	-	N	-	-	-	-	-	-	-	-	-	-	-	-
14th & Superior (NS)	14E46.5N	14E	44.5N	2014	2014	2014	Pedestrian	2013	-	-	E	-	-	-	#131259	-	-	-	-	-	LCD #050104068	-	-	-
14th & L	14E4S	14E	04S	2015		2014	Traffic Signal	1995	-	-	-	-	NW	-	-	#73544	-	-	-	-	-	-	LCD	-
14th & Fletcher / Turtle Creek	14E56N	14E	56N	2014	2014	2014	Traffic Signal	2013	-	-	SE	-	-	-	#129860	-	-	-	-	-	LCD #050209780	-	-	-
14th & Old Cheney Rd	14E57S	14E	57S	2015	2014	2014	Traffic Signal	2012	-	-	NW-Tall	-	-	-	#124733	-	-	-	-	-	LCD#011120807	-	-	-
14th & I.T.I.	14E58S	14E	58S	2015		2014	Traffic Signal	2003	-	-	SW	-	-	-	-	#84627	-	-	-	-	LCD#031013421	-	-	-
14th & I-180	14E59N	14E	59N	n/a	n/a	-	CCTV	2012	-	-	-	-	-	336 ITS	-	-	-	-	-	-	-	-	-	-
14th & K	14E5S	14E	05S	2015		2014	Traffic Signal	1993	-	-	-	-	NW	-	-	#68088	-	-	-	-	-	-	LED #9203-569	-
14th & Aberdeen	14E64S	14E	64S	2015	2014	2014	Traffic Signal	2005	-	-	NW	-	-	-	-	#82510	-	-	-	-	LCD#020408129	-	-	-
14th & YMCA	14E67S	14E	67S	2014		2014	Traffic Signal	2008	-	-	SE	-	-	-	-	#82494	-	-	-	-	LCD#020403248	-	-	-
14th & Pine Lake Rd	14E70S	14E	70S	2015		2014	Traffic Signal	2001	-	-	SE	-	-	-	-	#82493	-	-	-	-	LCD#9203-523	-	-	-
14th @ Julesburg	14E71N	14E	71N	2014	2014	2014	Pedestrian	2012	-	-	E	-	-	-	#129867	-	-	-	-	-	LED	-	-	-
14th & Vine	14E8N	14E	08N	2014		2014	Traffic Signal	1985	-	YES	-	NE	-	-	-	-	-	M10 #35163	-	-	-	LCD #9203-589	-	-
Centennial Mall & O	15E1N	15E	01N	2014	2014	2014	Traffic Signal	2012	-	-	NW	-	-	-	-	#72878	-	-	#080312726	-	-	-	-	-
Centennial Mall & P	15E2N	15E	02N	2015		2014	Traffic Signal	1998	-	-	-	-	SW	-	-	-	#7328	-	-	-	LCD#060604008	-	-	-
Centennial Mall & N	15E2S	15E	02S	2014		2014	Traffic Signal	2012	-	-	NE	-	-	-	#131253	-	-	-	-	-	LCD #071011285	-	-	-
Centennial Mall & M	15E3S	15E	03S	2014		2014	Traffic Signal	2012	-	-	SW	-	-	-	#131707	-	-	-	-	-	LCD #010601025	-	-	-
Centennial Mall @ L	15E4S	15E	04S	2015	2015	2015	Pedestrian	2015	-	-	SS	-	-	-	#90879	-	-	-	#150106966	-	-	-	-	-
Centennial Mall @ K	15E5S	15E	05S	2015	2015	2015	Pedestrian	2015	-	-	SS	-	-	-	#	-	-	-	-	-	-	-	-	-
16th & D	16E11S	16E	11S	n/a	n/a	2014	0Pending Rem	1982	-	YES	-	-	SW	-	-	-	#4628	-	-	-	-	-	LED	-
Antelope Valley & Salt Creek Rdwy (Big "T" or "X")	16E13N	16E	13N	2014		2014	Traffic Signal	2007	-	-	SW	-	-	-	#114546	-	-	-	-	-	LCD #9802006578	-	-	-
16th & A	16E14S	16E	14S	2015	2014	2014	Traffic Signal	1981	-	YES	-	-	NE	-	-	#68870	-	-	-	-	-	-	LED #9105-468	-
16th & O	16E1N	16E	01N	2015		2014	Traffic Signal	1998	-	-	NW	-	-	-	-	#50161	-	-	-	-	LCD #130706212	-	-	-
16th & South	16E21S	16E	21S	2015		2014	Traffic Signal	2007	-	-	NE	-	-	-	#91508	-	-	-	-	-	LCD #060304987	-	-	-
16th & P	16E2N	16E	02N	2015		2014	Traffic Signal	1998	-	-	NE	-	-	-	-	-	#4245	-	-	-	LCD #9105-332	-	-	-
16th & N	16E2S	16E	02S	2015		2014	Traffic Signal	2007	-	-	NE	-	-	-	#121739	-	-	-	-	-	LED #305296	-	-	-
16th & Q	16E3N	16E	03N	2015		2014	Traffic Signal	2012	-	-	NE	-	-	-	#xxxxxx	-	-	-	-	-	LCD #9602-577	-	-	-
16th & M	16E3S	16E	03S	2015		2014	Traffic Signal	2005	-	-	NE	-	-	-	#96154	-	-	-	-	-	LED #601-350	-	-	-
16th & R	16E4N	16E	04N	2015		2014	Traffic Signal	1976	-	-	-	-	SE	-	-	-	#5178	-	-	-	-	-	LED #9203-554	-
16th & L	16E4S	16E	04S	2015		2014	Traffic Signal	2004	-	-	SE	-	-	-	-	#73529	-	-	-	-	LED #310-242	-	-	-
16th & Old Cheney Rd	16E57S	16E	57S	2015		2014	Traffic Signal	1998	-	YES	-	-	SE	-	#110272	-	-	-	-	-	-	LED #603-512	-	-
16th & S	16E5N	16E	05N	2015		2014	Traffic Signal	1976	-	-	-	-	W	-	-	#01173	-	-	-	-	-	-	LCD	-
16th & K	16E5S	16E	05S	2015		2014	Traffic Signal	2004	-	-	NW	-	-	-	-	#60691	-	-	-	-	LCD #110601567	-	-	-
16th @ J	16E6S	16E	06S	2015		2014	Pedestrian	2005	-	-	E	-	-	-	-	-	#2152	-	-	-	LED #712-361	-	-	-
16th & Vine	16E8N	16E	08N	2015	2014	2014	Traffic Signal	1967	-	YES	SW	-	-	-	-	-	#8876	-	-	-	LCD #000310589	-	-	-
16th & G	16E8S	16E	08S	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#69133	-	-	-	-	LED #901-151	-	-	-
16th & W	16E9N	16E	09N	2015		2014	Traffic Signal	1994	-	-	-	-	NE	-	-	#73543	-	-	-	-	-	-	LCD	-

Traffic Engineering Asset Management Database

Intersection	ID#	Detector Types					Detector Available			Pre- Emption	Pre-Emption Available	Flashing Yellow			Cabinet Capacity	Signal Head Attachments	
		Loops	Magnetics	Cameras	Micro & Radar	Wireless Mag	Installed Rack	Shelf Mount	Camera Board			Possible	Not Possible	Reason		Iron Plumbing	Astro Brac
10th & D	10E11S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
10th & Charleston	10E12N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	ALL	-
10th & A	10E14S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
10th & O	10E1N	In Use	-	In Use	-	-	-	YES	YES	YES	YES	-	NO	One Ways	-	-	ALL
10th & Sun Valley	10E20N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
10th & South	10E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
10th @ Park	10E24S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	-	ALL	-
10th & Van Dorn	10E28S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
10th & P	10E2N	-	-	-	-	-	YES	-	-	-	YES	-	NO	One Ways	-	-	ALL
10th & N	10E2S	-	-	-	-	-	YES	-	-	-	YES				-	-	ALL
10th & High	10E32S	-	-	-	-	-	-	-	-	-	-				-	-	-
10th & Q	10E3N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	One Ways	-	-	ALL
10th & M	10E3S	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
10th & L	10E4S	-	-	-	-	-	YES	-	-	-	YES	-	NO	One Ways	-	-	ALL
10th & K	10E5S	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
10th & Lincoln Mall (J)	10E6S	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
10th & G	10E8S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	-	ALL	-
11th & A	11E14S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
11th & O	11E1N	-	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	One Ways	FULL	-	ALL
11th & Saunders	11E24N	-	-	In Use	-	-	YES	-	YES	-	-	-	NO	Span	FULL	ALL	-
11th & Cornhusker Hwy	11E25N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	FULL	-	ALL
11th & P	11E2N	-	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
11th & N	11E2S	-	-	-	-	-	-	-	-	-	-				FULL	-	ALL
11th & Q	11E3N	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	-	-	ALL
11th & M	11E3S	In Use (?)	-	-	-	-	-	YES	-	-	-	-	NO	One Ways	FULL	-	ALL
11th & L	11E4S	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
11th & K	11E5S	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
12th & O	12E1N	-	-	-	-	-	-	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
12th & P	12E2N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
12th & N	12E2S	-	-	-	-	-	-	-	-	-	-				-	-	ALL
12th & Q	12E3N	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	-	ALL	-
12th & M	12E3S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	One Ways	FULL	-	ALL
12th & L	12E4S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	One Ways	-	-	ALL
12th & K	12E5S	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
Capitol Beach Blvd & West O	12W1N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
NW 12th & Cornhusker Hwy	12W26N	In Use	-	In Use	-	-	YES	-	YES	-	-	-	NO	Mast Arm	-	-	ALL
NW 12th & Adams	12W30N	In Use	-	-	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
13th & D	13E11S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	-	-	-
13th & A	13E14S	-	-	-	-	-	-	-	-	YES	YES	-	NO	Span	-	ALL	-
13th & O	13E1N	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	One Ways	-	-	ALL
13th & South	13E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
13th @ Saratoga	13E22S	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	-	-	ALL
13th & Van Dorn	13E28S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Span	-	ALL	-
13th & P	13E2N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
13th & N	13E2S	-	-	-	-	-	YES	-	-	-	YES				-	-	ALL
13th & Arapahoe	13E34S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
Pioneers Blvd & Hwy 2	13E38S	In Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	FULL	-	ALL
13th & Q	13E3N	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	-	ALL
13th & M	13E3S	-	-	-	-	-	-	-	-	YES	YES	-	NO	Mast Arm	FULL	-	ALL
13th & L	13E4S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	-	-	ALL
Warlick & Old Cheney Rd	13E57S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
13th & K	13E5S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	FULL	-	ALL
13th & G	13E8S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
14th & Superior (ES)	14.5E46N	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
14th & Salt Creek Rdwy	14E13N	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
14th & Military	14E17N	-	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
14th & O	14E1N	-	-	-	-	-	-	-	-	YES	YES	-	NO	One Ways	FULL	-	ALL
14th & Van Dorn	14E28S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
14th & P	14E2N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
14th & N	14E2S	-	-	-	-	-	YES	-	-	-	YES				-	-	ALL
14th & Adams	14E30N	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	FULL	ALL	-
14th @ Hartley	14E34N	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	FULL	-	ALL
14th & Q	14E3N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	One Ways	FULL	ALL	-
14th & M	14E3S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	One Ways	FULL	-	ALL
14th & Hwy 2	14E41S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	FULL	-	ALL
14th & Hwy 2	14E41S	-	-	-	-	-	-	-	-	-	-				-	-	-
14th & Superior (NS)	14E46.5N	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
14th & L	14E4S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	One Ways	FULL	-	ALL
14th & Fletcher / Turtle Creek	14E56N	In Use	-	-	-	-	YES	-	-	YES	YES				-	-	ALL
14th & Old Cheney Rd	14E57S	In Use	In Use	In Use	-	-	YES	-	YES	-	-	-	NO	Mast Arm	-	Half	Half
14th & I.T.I.	14E58S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
14th & I-180	14E59N	-	-	-	-	-	-	-	-	-	-				-	-	-
14th & K	14E5S	-	-	-	-	-	-	-	-	-	YES	-	NO	One Ways	FULL	-	ALL
14th & Aberdeen	14E64S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
14th & YMCA	14E67S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
14th & Pine Lake Rd	14E70S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	FULL	-	ALL
14th @ Julesburg	14E71N	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
14th & Vine	14E8N	-	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
Centennial Mall & O	15E1N	-	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Centennial Mall & P	15E2N	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	-	-	ALL
Centennial Mall & N	15E2S	-	-	-	-	-	YES	-	-	-	YES				-	-	ALL
Centennial Mall & M	15E3S	-	-	-	-	-	YES	-	-	-	YES	-	NO	One Ways	-	-	ALL
Centennial Mall @ L	15E4S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
Centennial Mall @ K	15E5S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
16th & O	16E11S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
Antelope Valley & Salt Creek Rdwy (Big "T" or "X")	16E13N	In Use	-	In Use	-	In Use	YES	-	YES	YES	YES	-	NO	Overlaps	-	-	ALL
16th & A	16E14S	in Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
16th & O	16E1N	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	One Ways	-	-	ALL
16th & South	16E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES				-	-	ALL
16th & P	16E2N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	One Ways	-	-	ALL
16th & N	16E2S	-	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
16th & Q	16E3N	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
16th & M	16E3S	-	-	-	-	-	YES	-	-	YES	YES	-	NO	One Ways	-	-	ALL
16th & R	16E4N	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	ALL	-
16th & L	16E4S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	One Ways	-	-	ALL
16th & Old Cheney Rd	16E57S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
16th & S	16E5N	-	-	-	-	-	-	-	-	-	-	-	NO	One Ways	FULL	ALL	-
16th & K	16E5S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	One Ways	-	-	ALL
16th @ J	16E6S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
16th & Vine	16E8N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
16th & G	16E8S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
16th & W	16E9N	-	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	FULL	ALL	-

Traffic Engineering Asset Management Database

Intersection	ID#	Pole Base Types				Fiber Cabinet	Communication Type			PTZ Camera	# of Spare Conduits			Used Conduits % Full			
		Steel Plate	Transformer	Wood Pole	Concrete Insert		Fiber	Copper	Radio		2"	3"	4"	1"	2"	3"	4"
10th & D	10E11S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
10th & Charleston	10E12N	-	ALL	-	-	-	YES	YES	-	-	1	-	-	-	-	1-85%	2-10%
10th & A	10E14S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
10th & O	10E1N	ALL	-	-	-	-	-	YES	-	YES	1	-	-	-	-	-	1-100%
10th & Sun Valley	10E20N	ALL	-	-	-	-	-	YES	-	-	-	-	-	1-100%	-	1-75%	-
10th & South	10E21S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-25% , 2-50%
10th @ Park	10E24S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-50%	-
10th & Van Dorn	10E28S	ALL	-	-	-	-	-	YES	-	-	-	1	-			1-100%	1-50%, 2-10%
10th & P	10E2N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-100%
10th & N	10E2S	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	1-25%	1-50%
10th & High	10E32S	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
10th & Q	10E3N	ALL	-	-	-	YES	YES	-	-	-	-	-	2	-	-	-	2-100%
10th & M	10E3S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
10th & L	10E4S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-10% , 1-40%
10th & K	10E5S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
10th & Lincoln Mall (J)	10E6S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
10th & G	10E8S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-60%	-
11th & A	11E14S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11th & O	11E1N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%
11th & Saunders	11E24N	-	-	ALL	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%
11th & Cornhusker Hwy	11E25N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-100%
11th & P	11E2N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-50%
11th & N	11E2S	1	3	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
11th & Q	11E3N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-100%	-
11th & M	11E3S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-50%	-
11th & L	11E4S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
11th & K	11E5S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
12th & O	12E1N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-50% , 1-75%	-
12th & P	12E2N	ALL	-	-	-	-	-	YES	-	-	-	-	-			-	1-75%
12th & N	12E2S	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-50%
12th & Q	12E3N	-	ALL	-	-	-	YES	YES	-	-	-	-	-	-	-	1-100%	-
12th & M	12E3S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
12th & L	12E4S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
12th & K	12E5S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
Capitol Beach Blvd & West O	12W1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-75% , 2-100%	-
NW 12th & Cornhusker Hwy	12W26N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	2-100%	-	-
NW 12th & Adams	12W30N	ALL	-	-	-	-	-	-	YES	-	3	-	-	-	-	1-100%	1-100%
13th & D	13E11S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13th & A	13E14S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
13th & O	13E1N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	1-25%	-	1-50%
13th & South	13E21S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-30% , 2-100%
13th @ Saratoga	13E22S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-30% , 1-50%	-
13th & Van Dorn	13E28S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75% , 1-100%	-
13th & P	13E2N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-75%
13th & N	13E2S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-5% , 1-15% , 1-50%
13th & Arapahoe	13E34S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-80%	-	-
Pioneers Blvd & Hwy 2	13E38S	ALL	-	-	-		YES	-	-	-	-	-	-	-	1-100%	-	-
13th & Q	13E3N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-100%	-
13th & M	13E3S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
13th & L	13E4S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
Warlick & Old Cheney Rd	13E57S	-	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	2-100%	-
13th & K	13E5S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
13th & G	13E8S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75% , 1-100%	-
14th & Superior (ES)	14.5E46N	ALL	-	-	-	YES	YES	-	-	YES	-	-	1	-	-	-	1-75% , 1-10%
14th & Salt Creek Rdwy	14E13N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-60% , 1-70%
14th & Military	14E17N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	1-25%
14th & O	14E1N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-85%	-
14th & Van Dorn	14E28S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14th & P	14E2N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-85%
14th & N	14E2S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	1-25%	-	1-10% , 1-30% , 1-50%
14th & Adams	14E30N	ALL	-	-	-	-	YES	YES	-	YES	-	-	-	-	-	1-60% , 1-100%	-
14th @ Hartley	14E34N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-	-
14th & Q	14E3N	-	ALL	-	-	-	YES	YES	-	-	-	-	-	-	-	1-75%	-
14th & M	14E3S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
14th & Hwy 2	14E41S	ALL	-	-	-	YES	YES	-	-	YES	-	-	-	-	1-100%	-	3-100%
14th & Hwy 2	14E41S	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
14th & Superior (NS)	14E46.5N	ALL	-	-	-	-	YES	-	-	-	-	-	2	-	-	-	1-25% , 1-100%
14th & L	14E4S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-50%	-	-
14th & Fletcher / Turtle Creek	14E56N	ALL	-	-	-	-	YES	-	YES	-	-	-	1	-	-	-	1-20% , 2-60%
14th & Old Cheney Rd	14E57S	SE	MOST	-	-	-	-	YES	YES	YES	-	-	-	-	-	2-100%	-
14th & I.T.I.	14E58S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-20% , 2-100%	-
14th & I-180	14E59N	-	-	-	-	YES	YES	-	-	YES	-	-	-	-	-	-	-
14th & K	14E5S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
14th & Aberdeen	14E64S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 2-100%	-
14th & YMCA	14E67S	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-25% , 1-100%	-
14th & Pine Lake Rd	14E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
14th @ Julesburg	14E71N	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	-	1-10% , 1-60%
14th & Vine	14E8N	-	-	-	ALL	-	-	-	-	-	-	-	-	-	-	1-100%	-
Centennial Mall & O	15E1N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-50%	-	1-75%
Centennial Mall & P	15E2N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
Centennial Mall & N	15E2S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-10% , 2-30%
Centennial Mall & M	15E3S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-15% , 1-30%, 1-50%	-
Centennial Mall @ L	15E4S	ALL	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1-10%
Centennial Mall @ K	15E5S	ALL	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1-10%
16th & D	16E11S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	
Antelope Valley & Salt Creek Rdwy (Big "T" or "X")	16E13N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-10% , 1-75% , 1-100%
16th & A	16E14S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	-	1-85%	-
16th & O	16E1N	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-100%
16th & South	16E21S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-40% , 1-50%
16th & P	16E2N	ALL	-	-	-	-	-	YES	-	-	1	-	-	-	-	1-10% , 1-100%	-
16th & N	16E2S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-20% , 1-40%	-
16th & Q	16E3N	ALL	-	-	-	-	YES	-	-	-	-	-	2	-	1-10%	-	2-50%
16th & M	16E3S	ALL	-	-	-	-	-	-	YES	-	-	1	-	-	-	2-50%	-
16th & R	16E4N	-	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-85%	-
16th & L	16E4S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-15% , 1-60%	-
16th & Old Cheney Rd	16E57S	-	-	ALL	-	-	-	YES	YES	-	-	-	-	-	1-75% , 1-100%	-	-
16th & S	16E5N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-85%	-
16th & K	16E5S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-50% , 1-75%	-	-
16th @ J	16E6S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-25% , 1-40%	-
16th & Vine	16E8N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-30% , 1-40%	1-70%	-
16th & G	16E8S	ALL	-	-	-	-	-	YES	-	-	-	1	-	-	-	1-50% , 1-70%	-
16th & W	16E9N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-

Traffic Engineering Asset Management Database

Intersection	ID#	Sort E/W	Sort N/S	ACE Maintenance	Overhead Maintenance	Database	Intersection Facility	Built or Rebuilt	DMS	Span Wire	TS1 - C Cabinet Size	TS1 - B Cabinet Size	TS1 - A Cabinet Size	Other Cabinet Size	M52 Controller Type	M40 Controller Type	M03 Controller Type	Other Controller Type	16 Ch. (LCD) Conflict Monitor Type - (LED or LCD)	16 Connected Conflict Monitor Type - (LED or LCD)	12 Ch. Conflict Monitor Type - (LED or LCD)	6 Ch. Conflict Monitor Type - (LED or LCD)	3 Ch. Conflict Monitor Type - (LED or LCD)	Other Conflict Monitor Type - (LED or LCD)
Hwy 77 & Rosa Parks Way	16W7S	16W	07S	2014		2014	Traffic Signal	2006	-	-	SW	-	-	-	#93651	-	-	-	-	-	LCD #050209775	-	-	-
17th & Antelope Valley	17E10N	17E	10N	2015		2014	Traffic Signal	2005	-	-	SE	-	-	-	#120898	-	-	-	-	-	LCD #902-236	-	-	-
17th & D	17E11S	17E	11S	n/a	n/a	2014	0Pending Rem	1981	-	YES	-	-	SE	-	-	-	#2056	-	-	-	-	-	LED	-
17th & A	17E14S	17E	14S	2015	2014	2014	Traffic Signal	1981	-	YES	-	-	NW	-	-	#48170	-	-	-	-	-	-	LED #9105-350	-
17th & Washington	17E15S	17E	15S	2015	2014	2014	Traffic Signal	1985	-	YES	-	NE	-	-	-	#69122	-	-	#120203077	-	-	-	-	-
17th & Q	17E1N	17E	01N	2015		2014	Traffic Signal	1998	-	-	NW	-	-	-	-	#73535	-	-	-	-	LCD #980400700	-	-	-
17th & South	17E21S	17E	21S	2015		2014	Traffic Signal	2004	-	-	NW	-	-	-	#100873	-	-	-	#080507602	-	-	-	-	-
17th @ Lake	17E25S	17E	25S	2014		2014	Pedestrian	1990	-	YES	-	-	SE	-	-	-	#1010	-	-	-	-	-	LED #9105-463	-
17th & Van Dorn	17E28S	17E	28S	2015	2014	2014	Traffic Signal	1994	-	YES	SW	-	-	-	-	#69121	-	-	-	-	LCD #902-232	-	-	-
17th & P	17E2N	17E	02N	2015		2014	Traffic Signal	1998	-	-	SW	-	-	-	-	-	#7281	-	-	-	LCD #070104878	-	-	-
17th & N	17E2S	17E	02S	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#69792	-	-	-	-	LCD #060107296	-	-	-
17th & Q	17E3N	17E	03N	2015		2014	Traffic Signal	2012	-	-	NE	-	-	-	-	#73881	-	-	-	-	LCD #901-165	-	-	-
17th & M	17E3S	17E	03S	2015		2014	Traffic Signal	2004	-	-	SE	-	-	-	-	#70331	-	-	-	-	LCD #060304985	-	-	-
17th & R	17E4N	17E	04N	2015		2014	Traffic Signal	1976	-	-	-	SE	-	-	-	-	#7284	-	-	-	LCD #071008764	-	-	-
17th & L	17E4S	17E	04S	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#82834	-	-	-	-	LCD #070104873	-	-	-
17th @ S	17E5N	17E	05N	2015		2014	Pedestrian	1976	-	-	-	-	W	-	-	-	#7322	-	-	-	-	-	LCD	-
17th & K	17E5S	17E	05S	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#73545	-	-	-	-	LCD #9312-168	-	-	-
17th @ J	17E6S	17E	06S	2015		2014	Pedestrian	2004	-	-	SW	-	-	-	-	-	#4220	-	-	-	LCD #901-152	-	-	-
17th & Vine	17E8N	17E	08N	2015		2014	Traffic Signal	1967	-	YES	-	SW	-	-	-	#69800	-	-	-	-	LED #807-313	-	-	-
17th & G	17E8S	17E	08S	2015		2014	Traffic Signal	2004	-	-	NW	-	-	-	-	#73533	-	-	-	-	LCD #060304986	-	-	-
Antelope Valley & O	19E1N	19E	01N	2014	2014	2014	Traffic Signal	2012	-	-	SE	-	-	-	#131872	-	-	-	#080507605	YES	-	-	-	-
Antelope Valley & P	19E2N	19E	02N	2014		2014	Traffic Signal	2012	-	-	SE	-	-	-	#131255	-	-	-	-	-	LCD #00300983	-	-	-
Antelope Valley & N	19E2S	19E	02S	2015		2014	Traffic Signal	2012	-	-	SE	-	-	-	#131860	-	-	-	-	-	LCD #030906159	-	-	-
Antelope Valley & Q	19E3N	19E	03N	2014		2014	Traffic Signal	2011	-	-	SE	-	-	-	#130349	-	-	-	#120203079	YES	-	-	-	-
Antelope Valley & L	19E4S	19E	04S	2014	2014	2014	Traffic Signal	2012	-	-	SE	-	-	-	#131868	-	-	-	-	-	LCD #130609025	-	-	-
Antelope Valley & K	19E5S	19E	05S	2015		2014	Traffic Signal	2012	-	-	SE	-	-	-	#131506	-	-	-	-	-	LCD #130609040	-	-	-
1st & O	1E1N	01E	01N	2015		2014	Traffic Signal	1991	-	-	-	SE	-	-	#112547	-	-	-	-	-	-	LCD#9105-337	-	-
1st & Cornhusker Hwy	1E22N	01E	22N	2015		2014	Traffic Signal	1977	-	YES	SE-Tall	-	-	-	#97330	-	-	-	-	-	LCD #9203-578	-	-	-
1st @ Dawes	1E25N	01E	25N	2014	2014	2014	Pedestrian	2013	-	-	E	-	-	-	-	#82502	-	-	-	-	LCD #970703366	-	-	-
1st & Superior	1E45N	01E	45N	2014	2014	2014	Traffic Signal	2001	-	-	SE	-	-	-	#110279	-	-	-	-	-	LCD #011225704	-	-	-
1st & W Highlands	1E48N	01E	48N	2014	2014	2014	Traffic Signal	2008	-	-	NW	-	-	-	#131704	-	-	-	-	-	LCD #9604-592	-	-	-
Hwy 34 & Fletcher	1E60N	01E	60N	2014	2014	2014	Traffic Signal	2005	-	-	SE	-	-	-	#131865	-	-	-	-	-	LCD #030506819	-	-	-
1st & Denton	1E70S	01E	70S	n/a	n/a	2014	Cabinet Only	2008	-	-	NW	-	-	-	-	-	-	-	-	-	-	-	-	-
Hwy 77 & Warlick	1W65S	01W	65S	2015		2014	Traffic Signal	2007	-	YES - N & E	NW	-	-	-	#109816	-	-	-	-	-	LCD#010611986	-	-	-
Ast @ 20th	20E14S	20E	14S	2014		2014	Pedestrian	1981	-	YES	-	-	SE	-	-	-	#5703	-	-	-	-	-	LED #9105-377	-
South @ 20th	20E21S	20E	21S	2014	2014	2014	Pedestrian	2004	-	-	NE	-	-	-	-	#61059	-	-	-	-	LCD #904-117	-	-	-
20th & Cornhusker Hwy	20E30N	20E	30N	2015		2014	Traffic Signal	1999	-	-	NE	-	-	-	#115831	-	-	-	-	-	LCD #902-228	-	-	-
20th & Superior	20E46N	20E	44N	2015		2014	Traffic Signal	1995	-	-	-	NE	-	-	#110275	-	-	-	-	-	LCD #061000024	-	-	-
Antelope Valley & Vine	20E8N	20E	08N	2014		2014	Traffic Signal	2008	-	-	SE	-	-	-	#131859	-	-	-	-	-	LCD #9203-581	-	-	-
Coddington Ave & A	20W14S	20W	14S	2014		2014	Traffic Signal	2001	-	-	SE	-	-	-	#96148	-	-	-	-	-	LED #9312-169	-	-	-
NW 20th & West O	20W1N	20W	01N	2015		2014	Traffic Signal	1990	-	-	-	NW	-	-	#121379	-	-	-	-	-	LCD #120204769	-	-	-
Coddington Ave & South	20W21S	20W	21S	2014		2014	Traffic Signal	2010	-	-	NE	-	-	-	#96839	-	-	-	-	-	LCD #980206538	-	-	-
Coddington Ave & W. Jean	20W24S	20W	24S	2014		2014	Pedestrian	2010	-	-	W	-	-	-	#121387	-	-	-	-	-	LCD #040302181	-	-	-
Coddington Ave & Van Dorn	20W28S	20W	28S	n/a	2014	2014	Flasher	2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21st & L	21E4S	21E	04S	2014		2014	Traffic Signal	2006	-	-	SE	-	-	-	#174470	-	-	-	-	-	LCD #011119832	-	-	-
Old Cheney Rd & Tipperary	21E57S	21E	57S	2014	2014	2014	Traffic Signal	2003	-	-	SE	-	-	-	-	#47629	-	-	-	-	LCD #902-218	-	-	-
21st & K	21E5S	21E	05S	2014		2014	Traffic Signal	2005	-	-	SE	-	-	-	#189915	-	-	-	-	-	LCD #030906165	-	-	-
Southwood & Hwy 2	22E42S	22E	42S	2015		2014	Traffic Signal	1988	-	-	-	SE	-	-	#97128	-	-	-	-	-	-	LCD #9105-341	-	-
Pine Lake Rd @ 22nd	22E70S	22E	70S	2014		2014	Pedestrian	2001	-	-	N	-	-	-	-	#65340	-	-	-	-	LCD #040901494	-	-	-
Capitol Pkwy & J	23E6S	23E	06S	2014		2014	Traffic Signal	2005	-	-	SE	-	-	-	#96322	-	-	-	-	-	LCD #020403244	-	-	-
Hwy 77 & West O	23W1N	23W	01N	2014		2014	Traffic Signal	2007	-	-	SE	-	-	-	#2443411	-	-	-	-	-	LCD #061000016	-	-	-
Old Cheney Rd @ The Knolls	24E57S	24E	57S	2014	2014	2014	Pedestrian	1990	-	-	-	-	N	-	-	-	#4627	-	-	-	-	-	LED #9105-379	-
Pine Lake Rd & Hellen Witt	24E70S	24E	70S	2014		2014	Traffic Signal	2008	-	-	SE	-	-	-	-	#82496	-	-	LCD #080507606	-	-	-	-	-
Capitol Pkwy & Randolph	24E8S	24E	08S	2014		2014	Traffic Signal	2005	-	-	SW	-	-	-	#97644	-	-	-	-	-	LCD #030906166	-	-	-
25th & O	25E1N	25E	01N	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	#131871	-	-	-	-	-	LCD #050403733	-	-	-
Pst @ 25th	25E2N	25E	02N	n/a	2014	2014	Flasher	1992	-	-	-	-	S	-	-	-	#4219	-	-	-	-	-	-	-
Nst @ 25th	25E2S	25E	02S	2014		2014	Pedestrian	1997	-	-	-	N	-	-	#xxxxxx	-	-	-	-	-	LED #603-520	-	-	-
Qst @ 26th	26E3N	26E	03N	n/a	2014	2014	Flasher	1992	-	-	-	-	N	-	-	-	#8904	-	-	-	-	-	-	-
27th & Y	27E11N	27E	11N	2014	2014	2014	Traffic Signal	1996	-	-	SW	-	-	-	#89888	-	-	-	-	-	LCD #060107297	-	-	-
27th & Capitol Pkwy	27E11S	27E	11S	2015		2014	Traffic Signal	2006	-	-	NW	-	-	-	#131309	-	-	-	-	-	LCD #9405-306	-	-	-
27th & A	27E14S	27E	14S	2015		2014	Traffic Signal	2011	-	-	SE	-	-	-	#127033	-	-	-	-	-	LCD #030906167	-	-	-
27th & Holdrege	27E15N	27E	15N	2015	2014	2014	Traffic Signal	2005	-	-	NE	-	-	-	#107223	-	-	-	-	-	LCD #901-170	-	-	-
27th @ Sumner	27E17S	27E	17S	2014		2014	Pedestrian	1965	-	YES	-	-	NE	-	-	-	#7298	-	-	-	-	-	LED #9203-551	-
27th & Fair	27E19N	27E	19N	2015	2014	2014	Traffic Signal	1998	-	-	SW	-	-	-	#89039	-	-	-	-	-	LCD #9604-590	-	-	-
27th & Fair	27E19N	27E	19N	n/a	n/a	-	DMS	-	YES	-	-	-	-	346 ITS	-	-	-	-	-	-	-	-	-	-
27th & O	27E1N	27E	01N	2015	2014	2014	Traffic Signal	2004	-	-	NW	-	-	-	#129859	-	-	-	-	-	LCD #980400692	-	-	-
27th & South	27E21S	27E	21S	2014		2014	Traffic Signal	2003	-	-	NW	-	-	-	-	#73549	-	-	-	-	LCD #9511-696	-	-	-
27th & Sheridan Blvd	27E25S	27E	25S	2015	2014	2014	Traffic Signal	1982	-	-	-	-	SE	-	#91502	-	-	-	-	-	LCD #908-346	-	-	-
27th & Van Dorn	27E28S	27E	28S	2014		2014	Traffic Signal	1985	-	YES	-	NW	-	-	#94499	-	-	-	-	-	-	LED #603-511	-	-
27th & Cornhusker Hwy	27E29N	27E	29N	2015		2014	Traffic Signal	1997	-	-	SW	-	-	-	#107012	-	-	-	-	-	LCD#9707079402	-	-	-
27th & Cornhusker Hwy	27E29N	27E	29N	n/a	n/a	-	DMS	-	YES	-	-	-	-	346 ITS	-	-	-	-	-	-	-	-	-	-
27th & P	27E2N	27E	02N	2015	2014	2014	Traffic Signal	2010	-	-	SW	-	-	-	#97126	-	-	-	-	-	LCD #110501725	-	-	-
27th & Knox	27E32N	27E	32N	2015	2014	2014	Traffic Signal	1993	-	-	SE	-	-	-	#110283	-	-	-	-	-	LCD #020604850	-	-	-
27th & Fairfield	27E35N	27E	35N	2015	2014	2014	Traffic Signal	1995	-	-	-	NE	-	-	#102601	-	-	-	-	-	LCD #990703326	-	-	-
27th & Calvert	27E36S	27E	36S	n/a	n/a	2014	Flasher	2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27th & Old Dairy	27E37N	27E	37N	2014	2014	2014	Traffic Signal	2006	-	-	NW	-	-	-	#93497	-	-	-	-	-	LCD#100609684	-	-	-
27th @ Mst	27E3S	27E	03S	2014		2014	Pedestrian	2013	-	-	NW	-	-	-	#131863	-	-	-	-	-	LCD #980405737	-	-	-
27th & Woods	27E40S	27E	40S	2014		2014	Traffic Signal	1985	-	YES	-	NE	-	-	#221645	-	-	-	-	-	-	LED #5732	-	-
27th & Superior	27E44N	27E	44N	2015	2014	2014	Traffic Signal	1998	-	-	NE	-	-	-	#130010	-	-	-	-	-	LCD #070811244	-	-	-
27th & Hwy 2	27E44S	27E	44S	2014		2014	Traffic Signal	2004	-	-	NW	-	-	-	#130354	-	-	-	-	-	LCD #120204771	-	-	-
27th & Tipperary	27E47S	27E	47S	2014		2014	Traffic Signal	1995	-	-	SW	-	-	-	#91504	-	-	-	-	-	LCD #050104069	-	-	-
27th & Ticonderoga	27E48N	27E	48N	2015	2014	2014	Traffic Signal	1996	-	-	NE	-	-	-	#129870	-	-	-	-	-	LCD # 031200561	-	-	-
27th & Kensington	27E51N	27E	51N	2015	2014	2014	Traffic Signal	1996	-	-	SW	-	-	-	#120787	-	-	-	-	-	LCD#901-153	-	-	-
27th & Folkways	27E54N	27E	54N	2015	2014	2014	Traffic Signal	2005	-	-	NE	-	-	-	#129872	-	-	-	-	-	LCD #901-158	-	-	-
27th & Jameson	27E54S	27E	54S	2015		2014	Traffic Signal	1995	-	-	SW	-	-	-	#174470	-	-	-	-	-	LCD #040408111	-	-	-
27th & Old Cheney Rd	27E57S	27E	57S	2015		2014	Traffic Signal	1999	YES	-	NE	-	-	-	-	#82495	-	-	-	-	LCD #060304981	-	-	-
27th & Fletcher	27E60N	27E	60N	2015	2014	2014	Traffic Signal	2006	-	-	SE	-	-	-	#120817	-	-	-	-	-	LCD #902-223	-	-	-
27th & Whitehead	27E62N	27E	62N	2014	2014	2014	Traffic Signal	2007	-	-	SW	-	-	-	#102606	-	-	-	-	-	LCD #030904348	-	-	-
27th & Ridgeline	27E66S	27E	66S	2014		2014	Traffic Signal	2006	-	-	NE	-	-	-	-	#60699	-	-	-	-	LCD #011119829	-	-	-
27th & South Ridge	27E68S	27E	68S	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#66416	-	-	-	-	LCD #080208885	-	-	-
27th & J	27E6S	27E	06S	2015		2014	Traffic Signal	2013	-	-	NW	-	-	-	#110281	-	-	-	-	-	LCD #000310587	-	-	-
27th & Pine Lake Rd	27E70S	27E	70S	2014		2014	Traffic Signal	2002	-	-	NE	-	-	-	#131867	-	-	-	-	-	LCD #050403737	-	-	-
27th & Porter Ridge	27E71S	27E	71S	2014		2014	Traffic Signal	2008	-	-	SE	-	-	-	#109835	-	-	-	-	-	LCD #060606156	-	-	-
27th & I-80	27E74N	27E	74N	2015	2014	2014	Traffic Signal	2005	-	-	NE	-	-	-	#110344	-	-	-	-	-	LCD #030906153	-	-	-
27th & Grainger	27E80S	27E	78S	2014		2014	Traffic Signal	2013	-	-	SE	-	-	-	#130007	-	-	-	#090204902	-	-	-	-	-
27th & Yankee Hill	27E85S	27E	85S	2014		2014	Traffic Signal	2007	-	-	NE	-	-	-	#222662	-	-	-	-	-	LCD#9406-596	-	-	-
27th & Vine	27E8N	27E	08N	2014	2014	2014	Traffic Signal	2005	-	-	NW	-	-	-	#127396	-	-	-	-	-	LCD #980405732	-	-	-
27th & Randolph	27E8S	27E	08S	2014	2014	2014	Traffic Signal	2012	-	-	NW	-	-	-	#102599	-	-	-	#232512	-	-	-	-	-
Ast @ Rock Island	29E14S	29E	14S	2014	2014	2014	Pedestrian	1996	-	-	N	-	-	-	#90878	-	-	-	-	-	LCD #901-169	-	-	-
Holdrege @ 29th	29E15N	29E	15N	2014	2014	2014	Pedestrian	1999	-	-	N	-	-	-	#91507	-	-	-	-	-	-	LCD #11306	-	-
29th & Cornhusker Hwy	29E29N	29E	29N	2014		2014	Traffic Signal	1998	-	-	NW	-	-	-	#110285	-	-	-	-	-	LCD#901-163	-	-	-
Industrial & Superior	29E44N	29E	44N	2014		2014	Traffic Signal	1998	-	-	SE	-	-	-	#129869	-	-	-	-	-	LCD #902-217	-	-	-

Traffic Engineering Asset Management Database

Intersection	ID#	Loops	Magnetics	Cameras	Micro & Radar	Wireless Mag	Installed Rack	Shelf Mount	Camera Board	Pre- Emption	Pre-Emption Available	Possible	Not Possible	Reason	Cabinet Capacity	Iron Plumbing	Astro Brac
		Detector Types					Detector Available					Flashing Yellow				Signal Head Attachments	
Hwy 77 & Rosa Parks Way	16W7S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Truss	-	-	ALL
17th & Antelope Valley	17E10N	In Use	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
17th & D	17E11S	-	-	-	-	-	-	-	-	YES	YES	-	NO	Span	FULL	ALL	-
17th & A	17E14S	-	-	-	-	-	-	-	-	YES	YES	-	NO	Span	-	-	ALL
17th & Washington	17E15S	-	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
17th & O	17E1N	In Use	-	-	-	-	-	YES	-	YES	YES	YES	-	-	-	-	ALL
17th & South	17E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES				-	-	ALL
17th @ Lake	17E25S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
17th & Van Dorn	17E28S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	-	ALL	-
17th & P	17E2N	In Use	-	-	-	-	-	YES	-	-	YES	-	NO	One Ways	-	-	ALL
17th & N	17E2S	In Use	-	-	-	-	-	YES	-	-	-				-	-	ALL
17th & Q	17E3N	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
17th & M	17E3S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
17th & R	17E4N	In Use	-	In Use	-	-	YES	YES	YES	-	-	-	NO	Mast Arm	FULL	-	ALL
17th & L	17E4S	In Use	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
17th @ S	17E5N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
17th & K	17E5S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	One Ways	-	-	ALL
17th @ J	17E6S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
17th & Vine	17E8N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Span	-	ALL	-
17th & G	17E8S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
Antelope Valley & O	19E1N	In Use	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
Antelope Valley & P	19E2N	-	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Antelope Valley & N	19E2S	In Use	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
Antelope Valley & Q	19E3N	-	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Antelope Valley & L	19E4S	In Use	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
Antelope Valley & K	19E5S	In Use	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
1st & O	1E1N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	FULL	-	ALL
1st & Cornhusker Hwy	1E22N	In Use	-	In Use	-	-	-	YES	YES	YES	YES	-	NO	Span	FULL	ALL	-
1st @ Dawes	1E25N	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
1st & Superior	1E45N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
1st & W Highlands	1E48N	In Use	-	3-In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
Hwy 34 & Fletcher	1E60N	In Use	In Use	In Use	-	-	YES	-	YES	-	-	-	NO	Mast Arm	FULL	-	ALL
1st & Denton	1E70S	-	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	-
Hwy 77 & Warlick	1W65S	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Span	-	N & E	W & S
Ast @ 20th	20E14S	-	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
South @ 20th	20E21S	-	-	-	-	-	YES	-	-	-	-	-	NO	Ped	-	-	ALL
20th & Cornhusker Hwy	20E30N	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
20th & Superior	20E46N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
Antelope Valley & Vine	20E8N	In Use	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Coddington Ave & A	20W14S	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
NW 20th & West O	20W1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Coddington Ave & South	20W21S	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
Coddington Ave & W. Jean	20W24S	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	-	-	ALL
Coddington Ave & Van Dorn	20W28S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
21st & L	21E4S	-	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
Old Cheney Rd & Tipperary	21E57S	-	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
21st & K	21E5S	-	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
Southwood & Hwy 2	22E42S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
Pine Lake Rd @ 22nd	22E70S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
Capitol Pkwy & J	23E6S	-	-	In Use	-	-	YES	-	*Note - Componets Only	-	YES				-	-	ALL
Hwy 77 & West O	23W1N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
Old Cheney Rd @ The Knolls	24E57S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	FULL	-	ALL
Pine Lake Rd & Hellen Witt	24E70S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
Capitol Pkwy & Randolph	24E8S	-	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
25th & O	25E1N	-	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Pst @ 25th	25E2N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nst @ 25th	25E2S	-	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
Cst @ 26th	26E3N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27th & Y	27E11N	In Use	-	In Use	-	-	YES	-	YES	-	-	YES	-	-	-	-	ALL
27th & Capitol Pkwy	27E11S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & A	27E14S	In Use	-	1-In Use	-	-	YES	-	YES	YES	YES				-	-	ALL
27th & Holdrege	27E15N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Flashers	-	-	ALL
27th @ Sumner	27E17S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
27th & Fair	27E19N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
27th & Fair	27E19N	-	-	-	-	-	-	-	-	-	-				-	-	-
27th & O	27E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & South	27E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	FULL	-	ALL
27th & Sheridan Blvd	27E25S	In Use	-	-	-	-	-	YES	-	-	-				FULL	ALL	-
27th & Van Dorn	27E28S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	FULL	ALL	-
27th & Cornhusker Hwy	27E29N	In Use	-	UNL	UNL	UNL	YES	-	-	YES	YES	-	NO	Dual Turns	FULL	-	ALL
27th & Cornhusker Hwy	27E29N	-	-	-	-	-	-	-	-	-	-				-	-	-
27th & P	27E2N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
27th & Knox	27E32N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	FULL	-	ALL
27th & Fairfield	27E35N	In Use	-	In Use	-	-	-	YES	YES	YES	YES	-	NO	Mast Arm	FULL	-	ALL
27th & Calvert	27E36S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
27th & Old Dairy	27E37N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
27th @ Mst	27E3S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
27th & Woods	27E40S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
27th & Superior	27E44N	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	FULL	-	ALL
27th & Hwy 2	27E44S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & Tipperary	27E47S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
27th & Ticonderoga	27E48N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
27th & Kensington	27E51N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
27th & Folkways	27E54N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
27th & Jameson	27E54S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
27th & Old Cheney Rd	27E57S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	FULL	-	ALL
27th & Fletcher	27E60N	In Use	In Use	-	-	-	YES	-	-	-	-	-	NO	-	-	-	ALL
27th & Whitehead	27E62N	In Use	In Use	In Use	-	-	YES		YES	-	YES	YES	-	-	FULL	-	ALL
27th & Ridgeline	27E66S	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
27th & South Ridge	27E68S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
27th & J	27E6S	In Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
27th & Pine Lake Rd	27E70S	-	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & Porter Ridge	27E71S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & I-80	27E74N	In Use	In Use	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
27th & Grainger	27E80S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & Yankee Hill	27E85S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & Vine	27E8N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
27th & Randolph	27E8S	In Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
Ast @ Rock Island	29E14S	-	-	-	-	-	YES	-	-	-	YES				-	-	ALL
Holdrege @ 29th	29E15N	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	-	-	ALL
29th & Cornhusker Hwy	29E29N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Industrial & Superior	29E44N	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL

Traffic Engineering Asset Management Database

Intersection	ID#	Pole Base Types				Fiber Cabinet	Communication Type			PTZ Camera	# of Spare Conduits			Used Conduits % Full			
		Steel Plate	Transformer	Wood Pole	Concrete Insert		Fiber	Copper	Radio		2"	3"	4"	1"	2"	3"	4"
Hwy 77 & Rosa Parks Way	16W7S	ALL	-	-	-	-	YES	-	YES	YES	-	-	-	-	-	2-100%	1-10%
17th & Antelope Valley	17E10N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	1-25%
17th & D	17E11S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
17th & A	17E14S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-65%	-
17th & Washington	17E15S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-100%	1-100%	-
17th & Q	17E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-	1-40% , 1-75%
17th & South	17E21S	ALL	-	-	-	-	YES	YES	-	-	-	-	1	-	-	-	1-20% , 1-40% , 1-50%
17th @ Lake	17E25S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
17th & Van Dorn	17E28S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-60% , 1-100%	-
17th & P	17E2N	ALL	-	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-100%
17th & N	17E2S	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	2-30% , 1-50%	-
17th & Q	17E3N	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-20% , 1-50% , 1-75%
17th & M	17E3S	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	2-15% , 1-50%	-
17th & R	17E4N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%
17th & L	17E4S	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-10% , 2-20%	-
17th @ S	17E5N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-50%	-
17th & K	17E5S	ALL	-	-	-	YES	-	YES	-	-	-	1	-	-	-	2-100%	-
17th @ J	17E6S	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	1-100%	-
17th & Vine	17E8N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-30%	1-90%	-
17th & G	17E8S	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	2-100%	-
Antelope Valley & O	19E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 2-100%
Antelope Valley & P	19E2N	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	1-10% , 1-50% , 1-100%	-
Antelope Valley & N	19E2S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 2-100%
Antelope Valley & Q	19E3N	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	-	1-5% , 1-75% , 1-100%	-
Antelope Valley & L	19E4S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 2-100%
Antelope Valley & K	19E5S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-10% , 1-75% , 1-50%
1st & O	1E1N	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	1-100%	1-50%	-
1st & Cornhusker Hwy	1E22N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-100%
1st @ Dawes	1E25N	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-25% , 1-50%	-
1st & Superior	1E45N	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-100%	1-10%
1st & W Highlands	1E48N	ALL	-	-	-	-	-	-	YES	-	-	-	1	-	-	-	1-60% , 1-50%
Hwy 34 & Fletcher	1E60N	ALL	-	-	-	YES	YES	-	YES	YES	-	-	-	-	1-100%	2-100%	-
1st & Denton	1E70S	ALL	-	-	-	-	YES	-	-	-	-	-	2	-	-	-	1-75% , 1-100%
Hwy 77 & Warlick	1W65S	ALL	-	-	-	-	-	-	YES	-	-	-	1	-	-	-	2-80%
Ast @ 20th	20E14S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
South @ 20th	20E21S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-15% , 1-50%
20th & Cornhusker Hwy	20E30N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	1-50% , 1-10%	1-100%	-
20th & Superior	20E46N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-60%	-
Antelope Valley & Vine	20E8N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-75% , 1-100%	1-25%
Coddington Ave & A	20W14S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-60% , 1-85%	-
NW 20th & West O	20W1N	ALL	-	-	-	-	YES	-	YES	-	1	-	-	-	-	2-100%	-
Coddington Ave & South	20W21S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-50% , 1-70%	-
Coddington Ave & W. Jean	20W24S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-10% , 1-40%
Coddington Ave & Van Dorn	20W28S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21st & L	21E4S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-1% , 2-50%
Old Cheney Rd & Tipperary	21E57S	ALL	-	-	-	-	-	YES	-	-	-	2	-	-	-	1-100%	-
21st & K	21E5S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-20% , 1-75%
Southwood & Hwy 2	22E42S	ALL	-	-	-	-	-	YES	-	-	-	-	-	1-100%	1-25% , 1-100%	-	-
Pine Lake Rd @ 22nd	22E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-60%	-
Capitol Pkwy & J	23E6S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-50% , 1-75%
Hwy 77 & West O	23W1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
Old Cheney Rd @ The Knolls	24E57S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
Pine Lake Rd & Hellen Witt	24E70S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-10% , 2-75%
Capitol Pkwy & Randolph	24E8S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-15% , 2-50%
25th & O	25E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-100%	1-15%
Pst @ 25th	25E2N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nst @ 25th	25E2S	-	-	-	ALL	-	YES	-	-	-	1	1	1	-	-	-	1-10% , 1-25%
Qst @ 26th	26E3N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27th & Y	27E11N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-50% , 1-75%	-
27th & Capitol Pkwy	27E11S	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-10% , 1-75% , 1-100%
27th & A	27E14S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-25% , 2-50%
27th & Holdrege	27E15N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	3-100%	-
27th @ Sumner	27E17S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-100%	-	-
27th & Fair	27E19N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	2-100%	-
27th & Fair	27E19N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
27th & O	27E1N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	2-100%	-	1-50%
27th & South	27E21S	ALL	-	-	-	-	YES	-	-	YES	-	1	-	-	-	1-30% , 2-100%	-
27th & Sheridan Blvd	27E25S	-	ALL	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
27th & Van Dorn	27E28S	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-100%	-
27th & Cornhusker Hwy	27E29N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	2-100%
27th & Cornhusker Hwy	27E29N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
27th & P	27E2N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
27th & Knox	27E32N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-50% , 1-100%
27th & Fairfield	27E35N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
27th & Calvert	27E36S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27th & Old Dairy	27E37N	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-25% , 1-100%
27th @ Mst	27E3S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-	1-10%
27th & Woods	27E40S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	2-75% , 1-100%	-	-
27th & Superior	27E44N	ALL	-	-	-	-	YES	-	YES	YES	-	-	-	-	-	-	2-75%
27th & Hwy 2	27E44S	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-50% , 1-100%
27th & Tipperary	27E47S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
27th & Ticonderoga	27E48N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
27th & Kensington	27E51N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
27th & Folkways	27E54N	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	2-100%	-
27th & Jameson	27E54S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
27th & Old Cheney Rd	27E57S	ALL	-	-	-	-	YES	-	-	YES	-	-	-	1-100%	1-30%	1-40% , 1-75%	-
27th & Fletcher	27E60N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-75% , 1-85%	-
27th & Whitehead	27E62N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-10% , 2-75%
27th & Ridgeline	27E66S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-30% , 1-100%	-
27th & South Ridge	27E68S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
27th & J	27E6S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-75% , 1-100%
27th & Pine Lake Rd	27E70S	ALL	-	-	-	YES	YES	-	-	YES	-	-	-	-	-	2-100%	-
27th & Porter Ridge	27E71S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-15% , 1-60% , 1-75%
27th & I-80	27E74N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	2-25%	2-75%	-
27th & Grainger	27E80S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-90% , 1-100%
27th & Yankee Hill	27E85S	ALL	-	-	-	YES	YES	-	-	YES	-	-	1	-	-	-	2-100%
27th & Vine	27E8N	ALL	-	-	-	-	YES	-	-	YES	1	-	-	-	3-100%	-	-
27th & Randolph	27E8S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	2-100%
Ast @ Rock Island	29E14S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	1-50%	1-25%
Holdrege @ 29th	29E15N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	2-50%	-	1-25%
29th & Cornhusker Hwy	29E29N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	1-100%
Industrial & Superior	29E44N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-25%	-	1-100%

Traffic Engineering Asset Management Database

Intersection	ID#	Sort E/W	Sort N/S	ACE Maintenance	Overhead Maintenance	Database	Intersection Facility	Built or Rebuilt	DMS	Span Wire	TS1 - C Cabinet Size	TS1 - B Cabinet Size	TS1 - A Cabinet Size	Other Cabinet Size	M52 Controller Type	M40 Controller Type	M03 Controller Type	Other Controller Type	16 Ch. (LCD) Conflict Monitor Type - (LED or LCD)	16 Connected Conflict Monitor Type - (LED or LCD)	12 Ch. Conflict Monitor Type - (LED or LCD)	6 Ch. Conflict Monitor Type - (LED or LCD)	3 Ch. Conflict Monitor Type - (LED or LCD)	Other Conflict Monitor Type - (LED or LCD)
29th & Pine Lake Rd	29E70S	29E	70S	2014		2014	Traffic Signal	2008	-	-	NW	-	-	-	-	#63773	-	-	-	-	LCD #9312-170	-	-	-
2nd & O	2E1N	02E	01N	n/a	n/a	-	DMS	-	YES	-	-	S	-	-	-	-	-	-	-	-	-	-	-	-
South @ 30th	30E21S	30E	21S	2014	2014	2014	Pedestrian	2003	-	-	N	-	-	-	-	#74930	-	-	-	-	LCD #070906958	-	-	-
Sheridan Blvd @ Van Dorn	31E28S	31E	28S	2015		2014	Pedestrian	1968	-	YES	-	-	NE	-	-	-	#5140	-	-	-	-	-	LED #9105-421	-
31st & Vine	31E8N	31E	08N	2015		2014	Traffic Signal	1995	-	-	-	SE	-	-	-	-	#7302	-	-	-	-	LED #09303-685	-	-
Capitol Pkwy & A	32E14S	32E	14S	2014		2014	Traffic Signal	2006	-	-	SW	-	-	-	#96152	-	-	-	-	-	LCD #902-239	-	-	-
32nd & O	32E1N	32E	01N	n/a	n/a	-	DMS	-	YES	-	-	S	-	-	-	-	-	-	-	-	-	-	-	-
South @ Rock Island	32E21S	32E	21S	2014		2014	Pedestrian	1985	-	-	-	S	-	-	-	#82511	-	-	-	-	LCD #902-238	-	-	-
32nd & Pine Lake Rd	32E70S	32E	70S	2014		2014	Traffic Signal	2001	-	-	NW	-	-	-	-	#73542	-	-	-	-	LCD #9602-578	-	-	-
33rd & D	33E11S	33E	11S	2015	2014	2014	Traffic Signal	1999	-	YES	NW	-	-	-	-	#72667	-	-	-	-	LCD#980400696	-	-	-
33rd & A	33E14S	33E	14S	2015		2014	Traffic Signal	1999	-	YES	SE	-	-	-	#89032	-	-	-	-	-	LCD #902-231	-	-	-
33rd & Holdrege	33E15N	33E	15N	2015		2014	Traffic Signal	1999	-	-	NE	-	-	-	#94513	-	-	-	-	-	#070104881	-	-	-
33rd & O	33E1N	33E	01N	2015	2014	2014	Traffic Signal	2005	-	-	SW	-	-	-	#110269	-	-	-	-	-	LCD #040408113	-	-	-
33rd & South	33E21S	33E	21S	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	-	#82503	-	-	-	-	LCD #9307-535	-	-	-
33rd & Huntington	33E25N	33E	25N	2015		2014	Traffic Signal	1981	-	YES	-	SW	-	-	-	-	#7326	-	-	-	#020403250	-	-	-
33rd & Cornhusker Hwy	33E29N	33E	29N	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	#93653	-	-	-	-	-	#110501731	-	-	-
33rd & Sheridan	33E31S	33E	31S	n/a	n/a	-	CCTV	2003	-	-	-	-	-	346 ITS	-	-	-	-	-	-	-	-	-	-
33rd @ Calvert	33E36S	33E	36S	2015		2014	Pedestrian	2002	-	-	-	W	-	-	-	-	#5158	-	-	-	-	LCD	-	-
33rd & Pioneers Blvd	33E43S	33E	43S	2014		2014	Traffic Signal	2012	-	-	SE	-	-	-	#124756	-	-	-	-	-	LCD#010601028	-	-	-
33rd & Hwy 2	33E44S	33E	44S	2014	2013	2014	Traffic Signal	1996	-	-	NW	-	-	-	#120764	-	-	-	-	-	LCD #000803409	-	-	-
33rd & Superior	33E46N	33E	44N	2015	2014	2014	Traffic Signal	1999	-	-	NW	-	-	-	#136905	-	-	-	-	-	#9203-584	-	-	-
33rd & Folkways	33E55N	33E	55N	n/a	n/a		Cabinet Only	2004	-	-														
33rd & Northstar	33E57N	33E	57N	2015		2014	Traffic Signal	2004	-	-	NW	-	-	-	#129868	-	-	-	-	-	#9404-407	-	-	-
33rd & J	33E6S	33E	06S	2015	2014	2014	Traffic Signal	1997	-	YES	-	SE	-	-	-	#69805	-	-	-	-	-	LCD #9105-341	-	-
33rd & Vine	33E8N	33E	08N	2015	2014	Under Const.	Traffic Signal	2014		-	SE	-	-	-	#	-	-	-	-	-	-	-	-	-
33rd & Randolph	33E8S	33E	08S	2015		2014	Traffic Signal	1997	-	YES	-	NE	-	-	-	#73145	-	-	#141104656	-	-	-	-	-	-
I-80 & West O	33W1N	33W	01N	2014		2014	Traffic Signal	1999	-	-	SE	-	-	-	#1444797	-	-	-	-	-	LCD #041106851	-	-	-
34th & Old Cheney Rd	34E57S	34E	57S	2014		2014	Traffic Signal	1999	-	-	SE	-	-	-	-	-	#4617	-	-	-	LCD#9604-576	-	-	-
35th & Cornhusker Hwy	35E29N	35E	29N	2014		2014	Traffic Signal	2002	-	-	SE	-	-	-	#101765	-	-	-	-	-	LCD #9203-586	-	-	-
Ast @ 37th	37E14S	37E	14S	2015		2014	Pedestrian	1981	-	YES	-	-	SW	-	-	#2076	-	-	-	-	-	-	LED #9105-449	-
Holdrege & Dairy Store Dr	37E15N	38E	15N	2014		2014	Traffic Signal	2007	-	-	NW	-	-	-	#96155	-	-	-	-	-	LCD #990703293	-	-	-
37th & O	37E1N	37E	01N	n/a	n/a	-	DMS	-	YES	-	-	Median	-	-	-	-	-	-	-	-	-	-	-	-
Sheridan Blvd @ 37th	37E32S	37E	32S	2015		2014	Pedestrian	1971	-	YES	-	-	NW	-	#110811	-	-	-	-	-	-	-	LED #9105-418	-
Randolph @ 37th	37E8S	37E	08S	2014		2014	Pedestrian	1992	-	YES	-	-	S	-	-	-	#1702	-	-	-	-	-	LED	-
Normal Blvd & South	39E21S	39E	21S	2014	2014	2014	Traffic Signal	1986	-	-	NE	-	-	-	#110284	-	-	-	-	-	LCD #9307-534	-	-	-
Sun Valley & Westgate	3W5N	03W	05N	2014	2014	2014	Traffic Signal	2005	-	-	NW	-	-	-	#90865	-	-	-	-	-	LCD #041002671	-	-	-
40th & D	40E11S	40E	11S	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	-	#82509	-	-	-	-	LCD #9602-583	-	-	-
40th & A	40E14S	40E	14S	2015		2014	Traffic Signal	1997	-	-	-	NE	-	-	-	#68871	-	-	-	-	-	LCD #9203-590	-	-
40th & South	40E21S	40E	21S	2015		2014	Traffic Signal	1986	-	-	-	NE	-	-	#120791	-	-	-	-	-	-	LCD #090500298	-	-
40th & Normal Blvd	40E22S	40E	22S	2015	2013	2014	Traffic Signal	1986	-	-	SE	-	-	-	#121830	-	-	-	-	-	LCD #970601399	-	-	-
40th & Van Dorn	40E28S	40E	28S	2015		2014	Traffic Signal	2004	-	YES	NE	-	-	-	#136643	-	-	-	-	-	LCD#011119835	-	-	-
40th & Sheridan	40E33S	40E	33S	n/a	n/a	-	CCTV	2005	-	-	-	-	-	346 ITS	-	-	-	-	-	-	-	-	-	-
40th & Pioneers Blvd	40E43S	40E	43S	2015		2014	Traffic Signal	2011	-	-	NE	-	-	-	#123863	-	-	-	-	-	LCD #050209784	-	-	-
40th & Hwy 2	40E53S	40E	53S	2015	2014	2014	Traffic Signal	1996	-	-	NE	-	-	-	#101612	-	-	-	-	-	LCD #990507790	-	-	-
40th & Wildbriar Ln	40E56S	40E	56S	2015		2014	Traffic Signal	1996	-	-	SW	-	-	-	-	-	#2080	-	-	-	LCD #980601817	-	-	-
40th & Old Cheney Rd	40E57S	40E	57S	2015	2014	2014	Traffic Signal	2002	-	-	NW	-	-	-	-	#73540	-	-	-	-	LCD #9602-580	-	-	-
40th & Duxhall Dr.	40E59S	40E	59S	2015		2014	Traffic Signal	1996	-	-	SW	-	-	-	-	#69123	-	-	-	-	LCD #110700541	-	-	-
40th & Pine Lake Rd	40E70S	40E	70S	2015	2013	2014	Traffic Signal	1999	-	-	NW	-	-	-	#129862	-	-	-	-	-	LCD #130305833	-	-	-
40th & Grainger Pkwy	40E82S	40E	78S	2015		2014	Traffic Signal	2007	-	-	SE	-	-	-	#102603	-	-	-	-	-	LCD #9105-327	-	-	-
40th & Yankee Hill	40E85S	40E	85S	2015	2013	2014	Traffic Signal	2007	-	-	SE	-	-	-	#107438	-	-	-	-	-	LCD #990302559	-	-	-
40th & Randolph	40E8S	40E	08S	2015		2014	Traffic Signal	1985	-	YES	SW	-	-	-	-	#55405	-	-	-	-	LCD #980806755	-	-	-
44th & O	44E1N	44E	01N	2014		2014	Traffic Signal	1995	-	YES	NE	-	-	-	#125551	-	-	-	-	-	LCD #120204762	-	-	-
44th & Cornhusker Hwy	44E37N	44E	37N	2014		2014	Traffic Signal	2004	-	-	SE	-	-	-	#96147	-	-	-	-	-	LCD #080406541	-	-	-
45th & Vine	45E8N	45E	08N	2014		2014	Traffic Signal	2009	-	-	SE	-	-	-	#97340	-	-	-	-	-	LCD #060108017	-	-	-
Sumner & Cotner Blvd	46E17S	46E	17S	n/a	2014	2014	Flasher	1990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adams @ 46th	46E30N	46E	30N	2014	2014	2014	Pedestrian	2005	-	-	-	S	-	-	-	#72674	-	-	-	-	LCD #601-339	-	-	-
Calvert @ 46th	46E36S	46E	36S	2015	2014	2014	Pedestrian	1998	-	-	-	-	S	-	#105713	-	-	-	-	-	-	-	LED #9105-459	-
Pioneers Blvd @ 46th	46E43S	46E	43S	2014	2014	2014	Pedestrian	2011	-	-	S	-	-	-	#93652	-	-	-	-	-	LCD #906-628	-	-	-
46th & R	46E4N	46E	04N	2014		2014	Traffic Signal	2002	-	-	NE	-	-	-	#98074	-	-	-	-	-	LCD #000402668	-	-	-
48th @ Bryson (Valley)	48E11S	48E	11S	2014	2014	2014	Pedestrian	2001	-	-	-	-	E	-	-	#48194	-	-	-	-	LCD #991202164	-	-	-
48th @ Orchard	48E12N	48E	12N	2015		2014	Pedestrian	1997	-	-	-	-	SE	-	#91506	-	-	-	-	-	-	-	LED #9105-443	-
48th & A	48E14S	48E	14S	2014	2013	2014	Traffic Signal	2000	-	-	SW	-	-	-	-	#54804	-	-	-	-	LCD #901-154	-	-	-
48th & Holdrege	48E15N	48E	15N	2015		2014	Traffic Signal	2007	-	-	NW	-	-	-	#123868	-	-	-	-	-	LCD #110500478	-	-	-
48th & Sumner	48E17S	48E	17S	2014	2014	2014	Traffic Signal	1999	-	-	NW	-	-	-	-	#73525	-	-	-	-	-	LCD #090500299	-	-
48th & O	48E1N	48E	01N	2015		2014	Traffic Signal	2007	-	-	NW	-	-	-	#125843	-	-	-	-	-	LCD #05104063	-	-	-
48th & South	48E21S	48E	21S	2014	2013	2014	Traffic Signal	1986	-	-	NW	-	-	-	-	-	#2156	-	-	-	LCD #901-168	-	-	-
48th & Leighton Ave	48E23N	48E	23N	2015	2014	2014	Traffic Signal	1990	-	-	SW	-	-	-	#131873	-	-	-	-	-	LCD#030906156	-	-	-
48th & Normal Blvd	48E23S	48E	23S	2015		2014	Traffic Signal	1986	-	-	NE	-	-	-	-	#66414	-	-	-	-	LCD #020403246	-	-	-
48th @ Huntington Ave	48E25N	48E	25N	2014	2014	2014	Pedestrian	1988	-	-	-	NW	-	-	#96151	-	-	-	-	-	-	LED #310-327	-	-
48th & St Paul Ave	48E27N	48E	27N	2015		2014	Traffic Signal	1979	-	-	-	-	NW	-	-	-	#5104	-	-	-	-	-	LED #9105-390	-
48th & Van Dorn	48E28S	48E	28S	2014		2014	Traffic Signal	1996	-	-	-	NW	-	-	-	-	#1668	-	-	-	LCD #050104067	-	-	-
48th & Adams	48E30N	48E	30N	2015		2014	Traffic Signal	2006	-	-	NW	-	-	-	-	#45357	-	-	-	-	LCD #060604012	-	-	-
48th & Fremont	48E36N	48E	36N	2015		2014	Traffic Signal	2003	-	-	SE	-	-	-	-	#71810	-	-	-	-	LCD #130609036	-	-	-
48th & Calvert	48E36S	48E	36S	2015	2014	2014	Traffic Signal	2006	-	-	NW	-	-	-	#94497	-	-	-	-	-	LCD #9605-638	-	-	-
48th & Cornhusker Hwy	48E39N	48E	39N	2015		2014	Traffic Signal	1980	-	YES	SW	-	-	-	#129863	-	-	-	-	-	LCD #070104878	-	-	-
48th & Cornhusker Hwy	48E39N	48E	39N	n/a	n/a	-	DMS	-	YES	-	-	-	N	-	-	-	-	-	-	-	-	-	-	-
48th & Target	48E3N	48E	03N	2014		2014	Traffic Signal	2007	-	-	SW	-	-	-	#174470	-	-	-	-	-	LCD #902-233	-	-	-
48th @ Mst.	48E3S	48E	03S	n/a	n/a	2014	Cabinet Only	-	-	-	-	-	E	-	-	-	-	-	-	-	-	-	-	-
48th & Prescott Ave	48E40S	48E	40S	2015	2014	2014	Traffic Signal	2011	-	-	SE	-	-	-	#110273	-	-	-	-	-	LCD#031013422	-	-	-
48th & Cotner Blvd	48E43N	48E	43N	2015		2014	Traffic Signal	1980	-	-	-	-	SW	-	-	-	#4260	-	-	-	LCD #902-215	-	-	-
48th & Pioneers Blvd	48E43S	48E	43S	2015		2014	Traffic Signal	2012	-	-	SW	-	-	-	#140310	-	-	-	-	-	LCD #9105-328	-	-	-
48th & Superior	48E44N	48E	44N	2015		2014	Traffic Signal	1995	-	-	SE	-	-	-	-	#55565	-	-	-	-	LCD #030906165	-	-	-
48th & R	48E4N	48E	04N	2015		2014	Traffic Signal	2007	-	-	SW	-	-	-	#2316164	-	-	-	-	-	LCD #902-239	-	-	-
48th @ Claire Ave	48E51S	48E	51S	2015	2014	2014	Pedestrian	1995	-	-	-	-	E	-	-	-	#5188	-	-	-	-	-	LED #9203-561	-
48th & Hwy 2	48E55S	48E	55S	2015	2014	2014	Traffic Signal	1985	-	YES	NW	-	-	-	#131869	-	-	-	-	-	LCD #961106769	-	-	-
48th & Old Cheney Rd	48E57S	48E	57S	2015		2014	Traffic Signal	1999	-	-	NE	-	-	-	-	#70330	-	-	-	-	LCD #000604192	-	-	-
Pine Lake Rd & Beaver Crk.	48E70S	48E	70S	2014	2014	2014	Traffic Signal	2002	-	-	NW	-	-	-	#97345	-	-	-	#080406560	-	-	-	-	-
48th & Vine	48E8N	48E	08N	2014		2014	Traffic Signal	2009	-	-	SE	-	-	-	#130012	-	-	-	-	-	LCD #040302182	-	-	-
48th & Randolph	48E8S	48E	08S	2015		2014	Traffic Signal	1986	-	-	NW	-	-	-	-	#69802	-	-	-	-	LCD #070104883	-	-	-
NW 48th & West O	48W1N	48W	01N	2015		2014	Traffic Signal	2010	-	-	SW	-	-	-	#110756	-	-	-	-	-	LCD #9203-579	-	-	-
NW 48th & West Huntington	48W25N	48W	25N	2015		2014	Traffic Signal	2008	-	-	NE	-	-	-	#700311	-	-	-	-	-	LCD	-	-	-
NW 48th & West Knight	48W39N	48W	39N	2014		2014	Pedestrian	1980	-	YES	-	-	W	-	-	#72673	-	-	-	-	-	-	LED #9105-407	-
I-180 SB & Superior	4E44N	04E	44N	2014	2014	2014	Traffic Signal	1996	-	-	NE	-	-	-	#97339	-	-	-	-	-	LED #806-169	-	-	-
Sun Valley & Charleston	4W13N	04W	13N	2014	2014	2014	Traffic Signal	1985	-	-	-	NW	-	-	#121393	-	-	-	-	-	LED #310-240	-	-	-
NW 4th & Cornhusker Hwy	4W23N	04W	23N	2014		2014	Traffic Signal	1998	-	-	SE	-	-	-	#97347	-	-	-	-	-	LCD#080208884	-	-	-
50th & Cotner Blvd/A	50E14S	50E	14S	2015	2014	2014	Traffic Signal	1980	-	-	-	NE	-	-	-	-	#4645	-	-	-	LCD #9602-577	-	-	-
50th & R	50E4N	50E	04N	n/a	n/a	n/a	Flasher	2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Holdrege @ 51st	51E15N	51E	15N	2014	2014	2014	Pedestrian	2006	-	-	-	N	-	-	#97030	-	-	-	-	-	LCD #061000015	-	-	-
51st & Van Dorn	51E28S	51E	28S	2014		2014	Traffic Signal	1990	-	-	-	-	NE	-	-	#73546	-	-	-	-	LCD #031013423	-	-	-
Ast @ 52nd	52E14S	52E	14S	2014		2014	Pedestrian	1981	-	YES	-	-	S	-	-	-	#2138	-	-	-	-	-	LED #9105-349	-
52nd & O	52E1N	52E	01N	2015		2014	Traffic Signal	2002	-	-	NW	-	-	-	-	#63774	-	-	-	-	LCD #100412262	-	-	-
South @ 52nd	52E21S	52E	21S	2014	2014	2014	Pedestrian	2003	-	-	S	-	-	-	-	#63415	-	-	-	-	LCD #000803406	-	-	-

Traffic Engineering Asset Management Database

Intersection	ID#	Loops	Magnetics	Cameras	Micro & Radar	Wireless Mag	Installed Rack	Shelf Mount	Camera Board	Pre- Emption	Pre-Emption Available	Possible	Not Possible	Reason	Cabinet Capacity	Iron Plumbing	Astro Brac
		Detector Types					Detector Available					Flashing Yellow				Signal Head Attachments	
29th & Pine Lake Rd	29E70S	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
2nd & O	2E1N	-	-	-	-	-	-	-	-	-	-				-	-	-
South @ 30th	30E21S	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	-	-	ALL
Sheridan Blvd @ Van Dorn	31E28S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
31st & Vine	31E8N	In Use	-	-	-	-	-	YES	-	-	-	YES	-	-	-	-	ALL
Capitol Pkwy & A	32E14S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES		NO	Mast Arm	-	-	ALL
32nd & O	32E1N	-	-	-	-	-	-	-	-	-	-				-	-	-
South @ Rock Island	32E21S	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	FULL	-	ALL
32nd & Pine Lake Rd	32E70S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
33rd & D	33E11S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Span	-	ALL	-
33rd & A	33E14S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
33rd & Holdrege	33E15N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
33rd & O	33E1N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
33rd & South	33E21S	in Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
33rd & Huntington	33E25N	-	-	In Use	-	-	-	-	YES	-	-	-	NO	Span	FULL	ALL	-
33rd & Cornhusker Hwy	33E29N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
33rd & Sheridan	33E31S	-	-	-	-	-	-	-	-	-	-				-	-	-
33rd @ Calvert	33E36S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
33rd & Pioneers Blvd	33E43S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
33rd & Hwy 2	33E44S	In Use	-	-	-	-	YES	-	-	-	-	YES	-	-	-	-	ALL
33rd & Superior	33E46N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
33rd & Folkways	33E55N																
33rd & Northstar	33E57N	In Use	In Use	In Use	-	-	YES	-	YES	-	-	-	NO	Mast Arm	-	-	ALL
33rd & J	33E6S	In Use	-	In Use	-	-	-	YES	YES	-	-	-	NO	Span	-	ALL	-
33rd & Vine	33E8N																
33rd & Randolph	33E8S	-	-	In Use	-	-	-	-	YES	-	-	-	NO	Span	FULL	ALL	-
I-80 & West O	33W1N	In Use	In Use	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
34th & Old Cheney Rd	34E57S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
35th & Cornhusker Hwy	35E29N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	FULL	ALL	-
Ast @ 37th	37E14S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
Holdrege & Dairy Store Dr	37E15N	In Use	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
37th & O	37E1N	-	-	-	-	-	-	-	-	-	-				-	-	-
Sheridan Blvd @ 37th	37E32S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
Randolph @ 37th	37E8S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
Normal Blvd & South	39E21S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	FULL	ALL	-
Sun Valley & Westgate	3W5N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
40th & D	40E11S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
40th & A	40E14S	In Use	-	-	-	-	-	YES	-	YES	YES				-	ALL	-
40th & South	40E21S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	FULL	ALL	-
40th & Normal Blvd	40E22S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	-	ALL	ALL
40th & Van Dorn	40E28S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Span	-	ALL	-
40th & Sheridan	40E33S	-	-	-	-	-	-	-	-	-	-				-	-	-
40th & Pioneers Blvd	40E43S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
40th & Hwy 2	40E53S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
40th & Wildbriar Ln	40E56S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
40th & Old Cheney Rd	40E57S	In Use	In Use	-	-	-	YES	-	-	YES	YES	YES	-		-	-	ALL
40th & Duxhall Dr.	40E59S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
40th & Pine Lake Rd	40E70S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
40th & Grainger Pkwy	40E82S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
40th & Yankee Hill	40E85S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
40th & Randolph	40E8S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Span	-	ALL	-
44th & O	44E1N	In Use	-	In Use	-	-	-	YES	YES	YES	YES	-	NO	Span	-	ALL	-
44th & Cornhusker Hwy	44E37N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
45th & Vine	45E8N	In Use	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Sumner & Cotner Blvd	46E17S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
Adams @ 46th	46E30N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	FULL	-	ALL
Calvert @ 46th	46E36S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
Pioneers Blvd @ 46th	46E43S	-	-	-	-	-	YES	-	-	-	-	-	NO	Ped	-	-	ALL
46th & R	46E4N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
48th @ Bryson (Valley)	48E11S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
48th @ Orchard	48E12N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
48th & A	48E14S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	Half	Half
48th & Holdrege	48E15N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
48th & Sumner	48E17S	In Use	-	-	-	-	-	YES	-	YES	YES	YES	-	-	-	-	ALL
48th & O	48E1N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Dual Turns	FULL	-	ALL
48th & South	48E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	ALL	-
48th & Leighton Ave	48E23N	In Use	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
48th & Normal Blvd	48E23S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	Half	Half
48th @ Huntington Ave	48E25N	-	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	FULL	ALL	-
48th & St Paul Ave	48E27N	-	-	-	-	-	-	-	-	-	-	-	NO	Mast Arm	FULL	ALL	-
48th & Van Dorn	48E28S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	-	ALL	-
48th & Adams	48E30N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
48th & Fremont	48E36N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
48th & Calvert	48E36S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	ALL	-
48th & Cornhusker Hwy	48E39N	In Use	In Use	-	-	-	-	YES	-	YES	YES	-	NO	Span	-	ALL	-
48th & Cornhusker Hwy	48E39N	-	-	-	-	-	-	-	-	-	-				-	-	-
48th & Target	48E3N	In Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
48th @ Mst.	48E3S	-	-	-	-	-	-	YES	-	-	-	-	NO	Midblock Int.	-	-	-
48th & Prescott Ave	48E40S	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
48th & Cotner Blvd	48E43N	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	FULL	Half	Half
48th & Pioneers Blvd	48E43S	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
48th & Superior	48E44N	In Use	-	In Use	-	-	YES	-	YES	-	YES					-	ALL
48th & R	48E4N	In Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
48th @ Claire Ave	48E51S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
48th & Hwy 2	48E55S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	FULL	ALL	-
48th & Old Cheney Rd	48E57S	In Use	In Use	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	-	-	ALL
Pine Lake Rd & Beaver Crk.	48E70S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
48th & Vine	48E8N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
48th & Randolph	48E8S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
NW 48th & West O	48W1N	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
NW 48th & West Huntington	48W25N	In Use	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
NW 48th & West Knight	48W39N	-	-	-	-	-	-	YES	-	-	-	-	NO	Span	-	ALL	-
I-180 SB & Superior	4E44N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
Sun Valley & Charleston	4W13N	In Use	-	-	-	-	-	YES	-	-	-				FULL	-	ALL
NW 4th & Cornhusker Hwy	4W23N	In Use	In Use	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
50th & Cotner Blvd/A	50E14S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	FULL	ALL	-
50th & R	50E4N	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
Holdrege @ 51st	51E15N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
51st & Van Dorn	51E28S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
Ast @ 52nd	52E14S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
52nd & O	52E1N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
South @ 52nd	52E21S	-	-	-	-	-	-	YES	-	-	-	-	NO	Ped	-	-	ALL

Traffic Engineering Asset Management Database

Intersection	ID#	Pole Base Types				Fiber Cabinet	Communication Type			PTZ Camera	# of Spare Conduits			Used Conduits % Full			
		Steel Plate	Transformer	Wood Pole	Concrete Insert		Fiber	Copper	Radio		2"	3"	4"	1"	2"	3"	4"
29th & Pine Lake Rd	29E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
2nd & O	2E1N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
South @ 30th	30E21S	ALL	-	-	-	-	YES	-	-	-	-	1	1	-	-	1-65%	-
Sheridan Blvd @ Van Dorn	31E28S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-100%	-	-
31st & Vine	31E8N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-40% , 1-70%	-
Capitol Pkwy & A	32E14S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-25% , 1-50% , 1-60%
32nd & O	32E1N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
South @ Rock Island	32E21S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-70%	-
32nd & Pine Lake Rd	32E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-75% , 1-100%	-
33rd & D	33E11S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	-	2-100%	-
33rd & A	33E14S	-	ALL	-	-	-	YES	YES	-	-	-	-	-	-	1-100% , 1-90%	-	-
33rd & Holdrege	33E15N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-50% , 1-100%	-
33rd & O	33E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 2-100%	-
33rd & South	33E21S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
33rd & Huntington	33E25N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%
33rd & Cornhusker Hwy	33E29N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	-	1-100%
33rd & Sheridan	33E31S	-	-	-	-	-	-	YES	-	YES	-	-	-	-	-	-	-
33rd @ Calvert	33E36S	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	1-50%	1-50%	-
33rd & Pioneers Blvd	33E43S	ALL	-	-	-	-	YES	-	-	-	-	-	2	-	-	-	2-100%
33rd & Hwy 2	33E44S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
33rd & Superior	33E46N	ALL	-	-	-	YES	YES	-	-	-	-	-	-	-	-	1-60% , 1-100%	-
33rd & Folkways	33E55N																
33rd & Northstar	33E57N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-75%
33rd & J	33E6S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	2-100%	-	-
33rd & Vine	33E8N																
33rd & Randolph	33E8S	ALL	-	-	-	-	-	YES	-	-	1	-	-	-	-	2-100%	-
I-80 & West O	33W1N	ALL	-	-	-	-	-	-	YES	-	1	-	-	-	1-25% , 1-50% , 1-100%	1-50%	-
34th & Old Cheney Rd	34E57S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-50% , 1-75%	-	-
35th & Cornhusker Hwy	35E29N	-	ALL	-	-	-	YES	-	-	YES	-	-	-	-	2-100%	-	-
Ast @ 37th	37E14S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-100%	-	-
Holdrege & Dairy Store Dr	37E15N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-20% , 1-60% , 1-70%
37th & O	37E1N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
Sheridan Blvd @ 37th	37E32S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-100%	-	-
Randolph @ 37th	37E8S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-100%	-	-
Normal Blvd & South	39E21S	-	ALL	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-100%
Sun Valley & Westgate	3W5N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-75%	-
40th & D	40E11S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-50% , 1-100%	-
40th & A	40E14S	-	ALL	-	-	-	-	YES	-	-	1	-	-	1-100%	-	1-100%	-
40th & South	40E21S	-	ALL	-	-	-	YES	YES	-	-	-	-	-	-	-	2-100%	-
40th & Normal Blvd	40E22S	-	ALL	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-	-
40th & Van Dorn	40E28S	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	1-100%	1-5%
40th & Sheridan	40E33S	-	-	-	-	-	-	-	YES	YES	-	-	-	-	-	-	-
40th & Pioneers Blvd	40E43S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-100%
40th & Hwy 2	40E53S	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%
40th & Wildbriar Ln	40E56S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-50%	-
40th & Old Cheney Rd	40E57S	ALL	-	-	-	-	-	YES	YES	-	-	-	-	-	-	2-100%	-
40th & Duxhall Dr.	40E59S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
40th & Pine Lake Rd	40E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-25%	1-50% , 1-100%
40th & Grainger Pkwy	40E82S	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	-	1-10% , 1-50% , 1-100%
40th & Yankee Hill	40E85S	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-40% , 2-100%
40th & Randolph	40E8S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
44th & O	44E1N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	1-50%	-	1-100%
44th & Cornhusker Hwy	44E37N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
45th & Vine	45E8N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-5% , 2-60%
Sumner & Cotner Blvd	46E17S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adams @ 46th	46E30N	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	-	1-50%	-
Calvert @ 46th	46E36S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
Pioneers Blvd @ 46th	46E43S	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	-	1-5% , 1-100%
46th & R	46E4N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-5% , 1-50% , 1-90%	-
48th @ Bryson (Valley)	48E11S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
48th @ Orchard	48E12N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-
48th & A	48E14S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	1-15% , 1-75% , 1-100%	-	-
48th & Holdrege	48E15N	ALL	-	-	-	-	YES		YES	YES	-	-	-	-	-	-	1-25% , 2-75%
48th & Sumner	48E17S	2	2	-	-	-	-	YES	-	-	1	-	-	-	1-50%	1-75%	-
48th & O	48E1N	ALL	-	-	-	YES	YES	-	-	YES	-	2	-	-	-	-	3-100%
48th & South	48E21S	-	ALL	-	-	-	YES	YES	-	-	-	-	-	-	-	-	1-75%
48th & Leighton Ave	48E23N	NW	MOST	-	-	-	YES	-	-	-	-	-	-	-	1-10%	1-80% , 1-100%	-
48th & Normal Blvd	48E23S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
48th @ Huntington Ave	48E25N	-	ALL	-	-	-	YES	-	-	-	-	-	-	-	-	1-50%	-
48th & St Paul Ave	48E27N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
48th & Van Dorn	48E28S	-	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	-	1-100%
48th & Adams	48E30N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-25% , 1-60%
48th & Fremont	48E36N	ALL	-	-	-	-	-	YES	-	-	-	1	-	-	-	2-100%	-
48th & Calvert	48E36S	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	-	1-100%
48th & Cornhusker Hwy	48E39N	-	-	-	ALL	-	YES	YES	-	-	-	-	2	-	1-10% , 3-20% , 1-70%	1-10%	1-20% , 1-60%
48th & Cornhusker Hwy	48E39N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
48th & Target	48E3N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-25% , 2-100%
48th @ Mst.	48E3S	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-25%
48th & Prescott Ave	48E40S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-50% , 1-90%
48th & Cotner Blvd	48E43N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
48th & Pioneers Blvd	48E43S	ALL	-	-	-	YES	YES	-	-	-	-	-	1	-	-	-	1-5% , 2-100%
48th & Superior	48E44N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%
48th & R	48E4N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-20% , 2-100%
48th @ Claire Ave	48E51S	ALL	-	-	-	-	-	-	-	-	-	-	-	-	1-100%	-	-
48th & Hwy 2	48E55S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	2-50% , 1-100%	2-100%	-
48th & Old Cheney Rd	48E57S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
Pine Lake Rd & Beaver Crk.	48E70S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-25% , 1-100%
48th & Vine	48E8N	ALL	-	-	-	-	YES	-	-	YES	-	-	1	-	-	-	2-100%
48th & Randolph	48E8S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	1-75%	-	1-75%
NW 48th & West O	48W1N	ALL	-	-	-	-	-	-	YES	-	-	-	2	-	-	-	2-100%
NW 48th & West Huntington	48W25N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-50%
NW 48th & West Knight	48W39N	-	-	1	1	-	-	-	-	-	-	-	-	-	1-100%	-	-
I-180 SB & Superior	4E44N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	-	1-75% , 1-100%	-
Sun Valley & Charleston	4W13N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	-	2-75%	-
NW 4th & Cornhusker Hwy	4W23N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
50th & Cotner Blvd/A	50E14S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
50th & R	50E4N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Holdrege @ 51st	51E15N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-25% , 1-50%
51st & Van Dorn	51E28S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75% , 1-100%	-
Ast @ 52nd	52E14S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-85%	-	-
52nd & O	52E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-25% , 2-100%	-
South @ 52nd	52E21S	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-65%	-

Traffic Engineering Asset Management Database

Intersection	ID#	Sort E/W	Sort N/S	ACE Maintenance	Overhead Maintenance	Database	Intersection Facility	Built or Rebuilt	DMS	Span Wire	TS1 - C Cabinet Size	TS1 - B Cabinet Size	TS1 - A Cabinet Size	Other Cabinet Size	M52 Controller Type	M40 Controller Type	M03 Controller Type	Other Controller Type	16 Ch. (LCD) Conflict Monitor Type - (LED or LCD)	16 Connected Conflict Monitor Type - (LED or LCD)	12 Ch. Conflict Monitor Type - (LED or LCD)	6 Ch. Conflict Monitor Type - (LED or LCD)	3 Ch. Conflict Monitor Type - (LED or LCD)	Other Conflict Monitor Type - (LED or LCD)
Normal Blvd @ 52nd	52E24S	52E	24S	2015	2014	2014	Pedestrian	1986	-	-	-	-	N	-	-	-	#5720	-	-	-	-	-	LED #9105-467	-
Fremont @ 52nd	52E36N	52E	36N	2014	2014	2014	Pedestrian	2004	-	-	-	S	-	-	-	#5713	-	-	-	-	LCD #601-339	-	-	-
52nd & R	52E4N	52E	04N	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	#98078	-	-	-	-	-	LCD #010303413	-	-	-
Mahoney & Vine	52E8N	52E	08N	2014		2014	Pedestrian	2002	-	-	-	N	-	-	-	#72880	-	-	-	-	-	-	LED #9105-436	-
Hwy 77 & Bluff Rd.	56E105N	56E	105N	n/a	2014	2014	Flasher	1995	-	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56th @ Mopac Trail	56E10N	56E	10N	2015		2014	Pedestrian	1997	-	-	-	-	W	-	-	#	-	-	-	-	-	-	LED #9605-355	-
56th & A	56E14S	56E	14S	2014	2014	2014	Traffic Signal	1999	-	-	NW	-	-	-	-	#79827	-	-	-	-	LCD #041106843	-	-	-
56th & Holdrege	56E15N	56E	15N	2013	2013	2014	Traffic Signal	2013	-	-	NE	-	-	-	#97342	-	-	-	#080312710	YES	-	-	-	-
56th @ Sumner	56E17S	56E	17S	2014		2014	Pedestrian	2011	-	-	NW	-	-	-	#93655	-	-	-	-	-	LED #806-169	-	-	-
56th & O	56E1N	56E	01N	2014		2014	Traffic Signal	2002	-	-	SW	-	-	-	-	#72670	-	-	-	-	LCD #902-230	-	-	-
56th & South	56E21S	56E	21S	2014		2014	Traffic Signal	1997	-	-	SW	-	-	-	-	#79826	-	-	-	-	LCD #050104076	-	-	-
56th & Leighton	56E23N	56E	23N	2015		2014	Traffic Signal	1998	-	YES	NW	-	-	-	-	#76541	-	-	-	-	LCD #000803408	-	-	-
56th & Normal Blvd	56E24S	56E	24S	2015	2013	2014	Traffic Signal	1986	-	-	SE	-	-	-	-	-	#1025	-	-	-	LCD #050202744	-	-	-
56th & Van Dorn	56E28S	56E	28S	2015	2014	2014	Traffic Signal	1988	-	-	NE	-	-	-	-	-	#5192	-	-	-	LCD #0904-120	-	-	-
56th & Adams	56E30N	56E	30N	2015		2014	Traffic Signal	1995	-	-	NE	-	-	-	-	-	#2043	-	-	-	LCD #030906164	-	-	-
56th & Fremont	56E36N	56E	36N	2015		2014	Traffic Signal	2004	-	-	SE	-	-	-	-	#54785	-	-	-	-	LCD #961106768	-	-	-
56th & Calvert	56E36S	56E	36S	2014		2014	Traffic Signal	1980	-	YES	-	NW	-	-	#130009	-	-	-	-	-	-	LCD #9105-338	-	-
56th & Pioneers Blvd	56E43S	56E	43S	2015		2014	Traffic Signal	1997	-	-	NW	-	-	-	#130018	-	-	-	-	-	LCD#9404-144	-	-	-
Cornhusker Hwy & Havelock Ave/Superior	56E44N	56E	44N	2015		2014	Traffic Signal	1985	-	-	SW	-	-	-	#92123	-	-	-	-	-	LCD #010601029	-	-	-
Cornhusker Hwy & Superior	56E44N	56E	44N	n/a	n/a	-	DMS	-	YES	-	-	W	-	-	-	-	-	-	-	-	-	-	-	-
56th & Elkcrest Dr	56E49S	56E	49S	2014		2014	Traffic Signal	2008	-	-	SW	-	-	-	#110274	-	-	-	-	-	LCD #130408400	-	-	-
56th & R	56E4N	56E	04N	2015		2014	Traffic Signal	1976	-	-	SE	-	-	-	#129871	-	-	-	-	-	LCD #000310592	-	-	-
L55x (56th) & Morton	56E51N	56E	51N	n/a	n/a	-	DMS	-	YES	-	-	E	-	-	-	-	-	-	-	-	-	-	-	-
56th & Shady Creek Ct	56E55S	56E	55S	2015		2014	Traffic Signal	1989	-	YES	NW	-	-	-	#109824	-	-	-	-	-	LCD #050104065	-	-	-
56th & Hwy 2	56E55S	56E	55S	2015	2013	2014	Traffic Signal	2007	-	-	NE	-	-	-	#120675	-	-	-	#080302312	-	-	-	-	-
56th & Old Cheney Rd	56E57S	56E	57S	2015	2013	2014	Traffic Signal	1990	-	-	NE	-	-	-	#10583	-	-	-	-	-	LCD #070104873	-	-	-
56th & Pine Lake Rd	56E70S	56E	70S	2015	2013	2014	Traffic Signal	1996	-	-	SW	-	-	-	#97343	-	-	-	-	-	LCD #070607698	-	-	-
56th & Yankee Hill	56E85S	56E	85S	n/a	2014	2014	Flasher	2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56th & Vine	56E8N	56E	08N	2014		2014	Traffic Signal	2002	-	-	NW	-	-	-	#136352	-	-	-	-	-	LCD #990608832	-	-	-
56th & Cotner Blvd/Randolph	56E8S	56E	08S	2014		2014	Traffic Signal	2002	-	YES	NW	-	-	-	-	-	#2113	-	-	-	LCD #120503422	-	-	-
L55X (56th) & Cornhusker Hwy	57E46N	57E	44N	2014		2014	Traffic Signal	1999	-	-	NW	-	-	-	#115321	-	-	-	-	-	LCD #000310588	-	-	-
Ast @ 58th	58E14S	58E	14S	2013	2013	2014	Pedestrian	2013	-	-	N	-	-	-	#97022	-	-	-	#080312727	-	-	-	-	-
Cotner Blvd & O	58E1N	58E	01N	2014		2014	Traffic Signal	2002	-	-	SW	-	-	-	#129873	-	-	-	-	-	LCD #020403245	-	-	-
Fremont & Touzalin Ave	59E36N	59E	36N	2014	2014	2014	Traffic Signal	2003	-	-	NE	-	-	-	-	#55478	-	-	-	-	LCD #806-173	-	-	-
Havelock Ave & Touzalin Ave	59E44N	59E	44N	2014	2014	2014	Traffic Signal	1990	-	-	W-Island	-	-	-	#110270	-	-	-	-	-	LCD #9203-572	-	-	-
Cornhusker Hwy & Russell Cir	59E47N	59E	47N	n/a	n/a	-	DMS	-	YES	-	-	E	-	-	-	-	-	-	-	-	-	-	-	-
Cotner Blvd & R	59E4N	59E	04N	2014	2014	2014	Traffic Signal	2002	-	-	SW	-	-	-	#129865	-	-	-	-	-	LCD#990507786	-	-	-
Old Cheney Rd & Hwy 2	59E57S	59E	57S	2014		2014	Traffic Signal	2003	-	-	SW	-	-	-	#110253	-	-	-	-	-	LCD #03100566	-	-	-
Sun Valley & Line Dr.	5W10N	05W	10N	2014	2014	2014	Traffic Signal	2010	-	-	-	NE	-	-	#123198	-	-	-	-	-	LCD 901-158	-	-	-
Sun Valley & West O	5W1N	05W	01N	2014		2014	Traffic Signal	2005	-	-	NW	-	-	-	#135824	-	-	-	-	-	LCD #9307-523	-	-	-
Leighton Ave @ 60th	60E23N	60E	23N	2014		2014	Pedestrian	1970	-	YES	-	-	S	-	-	-	#2170	-	-	-	-	-	LED #9105-346	-
Old Cheney Rd & Vandervoort Dr.	60E57S	60E	57S	2014		2014	Traffic Signal	2003	-	-	SE	-	-	-	#97026	-	-	-	-	-	LCD #961106764	-	-	-
Holdrege @ 61st	61E15N	61E	15N	2015	2014	2014	Pedestrian	1996	-	-	-	-	S	-	-	#68087	-	-	-	-	-	-	LED #9105-457	-
Lyncrest Dr. & O	62E1N	62E	01N	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	-	#82506	-	-	-	-	LCD #030906171	-	-	-
62nd & Havelock Ave	62E44N	62E	44N	2015	2014	2014	Traffic Signal	1998	-	-	NE	-	-	-	#90863	-	-	-	-	-	LCD#120204776	-	-	-
Apples Way & Hwy 2	62E61S	62E	61S	2014	2013	2014	Traffic Signal	2007	-	-	SE	-	-	-	#108662	-	-	-	-	-	LCD #9506-743	-	-	-
Cotner Blvd & Vine	62E8N	62E	08N	2014		2014	Traffic Signal	1998	-	-	NW	-	-	-	#129866	-	-	-	-	-	LCD #031013424	-	-	-
Cotner Blvd @ Fire Station #9	63.5E9N	63.5E	09N	2014	2014	2014	Pedestrian	1998	-	YES	-	-	SW	-	-	-	#5150	-	-	-	-	-	LED #9105-403	-
63rd & O	63E1N	63E	01N	2014		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#73521	-	-	-	-	LCD #101106393	-	-	-
63rd & Adams	63E30N	63E	30N	2014		2014	Traffic Signal	2007	-	-	SW	-	-	-	-	#60696	-	-	-	-	LCD #061000013	-	-	-
Fremont @ 64th	64E36N	64E	36N	2014	2014	2014	Pedestrian	1996	-	-	-	-	S	-	-	#5719	-	-	-	-	-	-	LED #9105-360	-
South @ Broadmoore Dr.	65E21S	65E	21S	2015	2014	2014	Pedestrian	1980	-	YES	-	-	S	-	-	-	#5726	-	-	-	-	-	LED #9105-424	-
66th & Cotner Blvd/Starr	66E14N	66E	14N	2015	2014	2014	Traffic Signal	1982	-	YES - Diagonal	-	SE	-	-	-	#4642	-	-	-	-	LCD #904-119	-	-	-
Cotner Blvd & Holdrege	66E15N	66E	15N	2014	2014	2014	Traffic Signal	1999	-	YES	NE	-	-	-	-	#54786	-	-	-	-	LCD #120503424	-	-	-
66th & O	66E1N	66E	01N	2015		2014	Traffic Signal	2004	-	-	-	NW	-	-	-	#54450	-	-	-	-	LCD #9307-524	-	-	-
Cotner Blvd & Leighton Ave	66E23N	66E	23N	2014		2014	Traffic Signal	1999	-	YES	NE	-	-	STEEL	-	#47632	-	-	-	-	-	LED #310-304	-	-
Cotner Blvd @ Huntington	66E25N	66E	25N	2014	2014	2014	Pedestrian	1998	-	-	-	W	-	STEEL	-	#79825	-	-	-	-	-	LCD #9105-340	-	-
66th & Cotner Blvd/Adams	66E30N	66E	30N	2015		2014	Traffic Signal	1997	-	YES	-	SE	-	-	-	-	#4339	-	-	-	LCD #9105-331	-	-	-
66th & Q	66E3N	66E	03N	2014		2014	Traffic Signal	2004	-	-	NW	-	-	-	-	#69130	-	-	-	-	LCD #030506813	-	-	-
66th @ Mopac Trail	66E6N	66E	06N	2015		2014	Pedestrian	1999	-	-	-	-	W	-	#89029	-	-	-	-	-	-	-	LED #9105-464	-
66th & Vine	66E8N	66E	08N	2014		2014	Traffic Signal	1997	-	YES	NW	-	-	-	#124759	-	-	-	-	-	LCD #040302187	-	-	-
68th & O	68E1N	68E	01N	2014		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#70328	-	-	-	-	LCD #050608386	-	-	-
I-180 NB & Superior	6E44N	06E	44N	2014	2014	2014	Traffic Signal	2013	-	-	SE	-	-	-	#97028	-	-	-	#090608699	-	-	-	-	-
70th & Teton Dr	70E11S	70E	11S	2015	2014	2014	Traffic Signal	1985	-	-	NE	-	-	-	-	#155683	-	-	-	-	LCD #9105-330	-	-	-
70th & A	70E14S	70E	14S	2015		2014	Traffic Signal	2002	-	-	SE	-	-	-	-	#63773	-	-	-	-	LCD #030506812	-	-	-
70th & Holdrege	70E15N	70E	15N	2015		2014	Traffic Signal	2011	-	-	NE	-	-	-	-	#69120	-	-	-	-	LCD #9511-696	-	-	-
70th @ Lincolnshire Rd	70E18S	70E	18S	2015		2014	Pedestrian	1981	-	-	-	-	NE	-	#110326	-	-	-	-	-	-	-	LED #9203-559	-
70th & O	70E1N	70E	01N	2015		2014	Traffic Signal	2004	-	-	NE	-	-	-	-	#82500	-	-	-	-	LCD #050209779	-	-	-
70th & South	70E21S	70E	21S	2015	2014		Traffic Signal	2014																
70th & Leighton Ave	70E23N	70E	23N	2015		2014	Traffic Signal	2010	-	-	-	NE	-	-	-	#72672	-	-	-	-	LCD #980400701	-	-	-
70th @ Huntington Ave	70E25N	70E	25N	2015		2014	Pedestrian	1998	-	YES	-	-	SW	-	-	-	#2064	-	-	-	-	-	LED #9105-375	-
70th & Van Dorn	70E28S	70E	28S	2015	2014	2014	Traffic Signal	1985	-	-	-	NE	-	-	-	#73538	-	-	-	-	LCD #980806754	-	-	-
70th & Adams	70E30N	70E	30N	2015		2014	Traffic Signal	2004	-	-	SE	-	-	-	-	#54801	-	-	-	-	LCD #9203-574	-	-	-
70th & Holmes Park Rd	70E32S	70E	32S	2015		2014	Traffic Signal	1998	-	-	SE	-	-	-	-	#73143	-	-	-	-	LCD #9506-744	-	-	-
70th & Fremont	70E36N	70E	36N	2015		2014	Traffic Signal	2003	-	-	SE	-	-	-	-	#73520	-	-	-	-	LCD # 061000012	-	-	-
70th @ Mopac Trail	70E3N	70E	03N	2015		2014	Pedestrian	2004	-	-	SW	-	-	-	-	#49738	-	-	-	-	LCD #980400697	-	-	-
70th & Pioneers Wood Dr.	70E40S	70E	40S	n/a	n/a	2014	Cabinet Only	-	-	-	NE	-	-	-	-	-	-	-	-	-	-	-	-	-
70th & Pioneers Blvd	70E43S	70E	43S	2015	2014	2014	Traffic Signal	2002	-	-	SE	-	-	-	-	#73531	-	-	-	-	LCD #060404377	-	-	-
70th & Havelock Ave	70E44N	70E	44N	2015		2014	Traffic Signal	1980	-	YES	NW	-	-	-	-	#84626	-	-	-	-	LCD #902-226	-	-	-
70th & Cornhusker Hwy	70E44N	70E	44N	2015		2014	Traffic Signal	1993	-	-	SW	-	-	-	#110287	-	-	-	-	-	LCD #071008764	-	-	-
70th & Stacy Lane	70E45S	70E	45S	2015		2014	Traffic Signal	2002	-	-	NE	-	-	-	-	#155683	-	-	-	-	LCD #120503426	-	-	-
70th & L	70E4S	70E	04S	2015		2014	Traffic Signal	1996	-	YES	NW	-	-	-	-	#82507	-	-	#15051190	-	-	-	-	-
70th & Glynoaks Dr	70E50S	70E	50S	2015		2014	Traffic Signal	2013	-	-	SE	-	-	-	-	#69126	-	-	#080406562	-	-	-	-	-
70th & Old Cheney Rd	70E57S	70E	57S	2015	2015	2015	Traffic Signal	2015	-	-	SW	-	-	-	#125839	-	-	-	-	-	LCD #011119832	-	-	-
70th & Berean	70E64S	70E	64S	2015		2014	Flasher	1998	-	-	-	-	NE	-	-	-	-	-	-	-	-	-	-	-
70th & Hwy 2	70E65S	70E	65S	2015	2014	2014	Traffic Signal	2003	-	-	SW	-	-	-	#125045	-	-	-	-	-	LCD #120502086	-	-	-
70th & Pine Lake Rd	70E70S	70E	70S	2015		2014	Traffic Signal	1999	-	-	NE	-	-	-	#143455	-	-	-	#141009836	-	-	-	-	-
70th & Vine	70E8N	70E	08N	2015		2014	Traffic Signal	2011	-	-	NW	-	-	-	#123867	-	-	-	-	-	LCD #050608387	-	-	-
70th & S. Wedgewood Dr	70E8S	70E	08S	2015		2014	Traffic Signal	2003	-	-	SW	-	-	-	-	#69129	-	-	-	-	LCD #980400699	-	-	-
Wedgewood & O	71E1N	71E	01N	2014		2014	Traffic Signal	1995	-	-	SE	-	-	-	-	#66769	-	-	-	-	LCD #000300982	-	-	-
Pioneers Blvd & Stacy Lane	71E43S	71E	43S	2014		2014	Traffic Signal	2002	-	-	NE	-	-	-	-	#84989	-	-	-	-	LCD #110510189	-	-	-
73rd @ Vine	73E8N	73E	08N	2014		2014	Pedestrian	2013	-	-	N	-	-	-	#96150	-	-	-	-	-	LCD #000310584	-	-	-
Ast @ Regency	74E14S	74E	14S	2015	2014	2014	Pedestrian	1972	-	YES	-	-	NW	-	-	-	#4241	-	-	-	-	-	LED #9105-435	-
Pioneers Blvd & Lucile Dr.	76E43S	76E	43S	2014		2014	Traffic Signal	2008	-	-	NW	-	-	-	#97338	-	-	-	-	-	LCD #901-171	-	-	-
Colony Ln & Vine	76E8N	76E	08N	2015		2014	Pedestrian	2004	-	YES	-	-	S	-	-	#35174	-	-	-	-	-	-	LED #9203-560	-
Skyway & O	77E1N	77E	01N	2014		2014	Traffic Signal	1999	-	-	SE	-	-	-	-	#82501	-	-	-	-	LCD #9203-575	-	-	-
77th & Old Cheney Rd	77E57S	77E	57S	2015	2015	2015	Traffic Signal	2015	-	-	SW	-	-	-	#121825	-	-	-	-	-	-	-	-	-
Ast @ Cottonwood Dr	79E14S	79E	14S	2015	2014	2014	Pedestrian	1991	-	YES	-	-	N	-	-	#40945	-	-	-	-	-	-	LED #9105-454	-
79th & Van Dorn	79E28S	79E	28S	2014		2014	Pedestrian	2004	-	-	-	S	-	-	-	#61137	-	-	-	-	-	LCD #9105-335	-	-
Folsom & Ast	7W14S	07W	14S	n/a	2014	2014	Flasher	1990	-	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hwy 77 & Van Dorn	7W28S	07W	28S	2014		2014	Traffic Signal	1995	-	-	NE	-	-	-	-	#69801	-	-	-	-	LCD #100408592	-	-	-
NW 7th & Fletcher	7W59N	07W	59N	2014	2014	2014	Pedestrian	2006	-	-	NW	-	-	-	-	#1718	-	-	-	-	-	LED #9211-499	-	-

Traffic Engineering Asset Management Database

Intersection	ID#	Loops	Magnetics	Cameras	Micro & Radar	Wireless Mag	Installed Rack	Shelf Mount	Camera Board	Pre- Emption	Pre-Emption Available	Possible	Not Possible	Reason	Cabinet	Iron Plumbing	Astro Brac
		Detector Types					Detector Available					Flashing Yellow			Capacity	Signal Head Attachments	
Normal Blvd @ 52nd	52E24S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
Fremont @ 52nd	52E36N			-	-	-	-	YES	-	-	YES	-	-	Ped	-	-	ALL
52nd & R	52E4N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	No Left Turns	-	-	ALL
Mahoney & Vine	52E8N	-	-	-	-	-	-	-	-	-	-				-	-	ALL
Hwy 77 & Bluff Rd.	56E105N	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
56th @ Mopac Trail	56E10N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	FULL	-	ALL
56th & A	56E14S	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
56th & Holdrege	56E15N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
56th @ Sumner	56E17S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
56th & O	56E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	No Left Turns	FULL	-	ALL
56th & South	56E21S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
56th & Leighton	56E23N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Span	-	ALL	-
56th & Normal Blvd	56E24S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	FULL	-	ALL
56th & Van Dorn	56E28S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Mast Arm	-	-	ALL
56th & Adams	56E30N	In Use	In Use	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
56th & Fremont	56E36N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
56th & Calvert	56E36S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	-	ALL	-
56th & Pioneers Blvd	56E43S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	FULL	-	ALL
Cornhusker Hwy & Havelock Ave/Superior	56E44N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	FULL	-	ALL
Cornhusker Hwy & Superior	56E44N	-	-	-	-	-	-	-	-	-	-				-	-	-
56th & Elkcrest Dr	56E49S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
56th & R	56E4N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
L55x (56th) & Morton	56E51N	-	-	-	-	-	-	-	-	-	-				-	-	-
56th & Shady Creek Ct	56E55S	In Use	-	In Use	-	-	-	YES	YES	-	-	-	NO	Span	-	ALL	-
56th & Hwy 2	56E55S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
56th & Old Cheney Rd	56E57S	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
56th & Pine Lake Rd	56E70S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
56th & Yankee Hill	56E85S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
56th & Vine	56E8N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES				-	-	ALL
56th & Cotner Blvd/Randolph	56E8S	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	-	ALL	-
L55X (56th) & Cornhusker Hwy	57E46N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Ast @ 58th	58E14S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
Cotner Blvd & O	58E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Fremont & Touzalin Ave	59E36N	In Use	-	In Use	-	-	YES	-	YES	YES	YES				FULL	-	ALL
Havelock Ave & Touzalin Ave	59E44N	In Use	-	In Use	-	-	-	YES	YES	-	-	-	NO	Mast Arm	-	ALL	-
Cornhusker Hwy & Russell Cir	59E47N	-	-	-	-	-	-	-	-	-	-				-	-	-
Cotner Blvd & R	59E4N	-	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	Most	SE
Old Cheney Rd & Hwy 2	59E57S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Sun Valley & Line Dr.	5W10N	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
Sun Valley & West O	5W1N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
Leighton Ave @ 60th	60E23N	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
Old Cheney Rd & Vandervoort Dr.	60E57S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	FULL	-	ALL
Holdrege @ 61st	61E15N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	FULL	-	ALL
Lyncrest Dr. & O	62E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
62nd & Havelock Ave	62E44N	-	-	In Use	-	-	YES	-	YES	-	-	-	NO	Mast Arm	-	-	ALL
Apples Way & Hwy 2	62E61S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Cotner Blvd & Vine	62E8N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Overlaps	FULL	-	ALL
Cotner Blvd @ Fire Station #9	63.5E9N	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	NB/SB	EB
63rd & O	63E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
63rd & Adams	63E30N	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	ALL	-
Fremont @ 64th	64E36N	-	-	-	-	-	-	-	-	-	-				FULL	-	ALL
South @ Broadmoore Dr.	65E21S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
66th & Cotner Blvd/Starr	66E14N	In Use	-	-	-	-	-	YES	-	YES	YES	-	NO	Span	-	ALL	-
Cotner Blvd & Holdrege	66E15N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Span	-	ALL	-
66th & O	66E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Dual Turns	FULL	-	ALL
Cotner Blvd & Leighton Ave	66E23N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
Cotner Blvd @ Huntington	66E25N	-	-	-	-	-	-	-	-	-	-				-	-	ALL
66th & Cotner Blvd/Adams	66E30N	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Span	FULL	ALL	-
66th & Q	66E3N	In Use	-	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
66th @ Mopac Trail	66E6N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
66th & Vine	66E8N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	Span	FULL	ALL	-
68th & O	68E1N	In Use	-	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
I-180 NB & Superior	6E44N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
70th & Teton Dr	70E11S	In Use	-	-	-	-	-	YES	-	-	-	-	NO	Mast Arm	-	-	ALL
70th & A	70E14S	In Use	-	-	-	-	-	YES	-	YES	YES				FULL	-	ALL
70th & Holdrege	70E15N	In Use	-	-	-	-	YES	-	-	YES	YES				-	-	ALL
70th @ Lincolnshire Rd	70E18S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
70th & O	70E1N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
70th & South	70E21S																
70th & Leighton Ave	70E23N	In Use	-	-	-	-	-	YES	-	-	-				-	-	ALL
70th @ Huntington Ave	70E25N	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
70th & Van Dorn	70E28S	In Use	-	-	-	-		YES	-	YES	YES				FULL	-	ALL
70th & Adams	70E30N	In Use	-	In Use	-	-	YES	-	YES	-	YES				FULL	-	ALL
70th & Holmes Park Rd	70E32S	In Use	-	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
70th & Fremont	70E36N	-	-	In Use	-	-	YES	-	YES	-	YES				-	-	ALL
70th @ Mopac Trail	70E3N	-	-	-	-	-	-	-	-	-	-	-	NO	Mast Arm	-	-	ALL
70th & Pioneers Wood Dr.	70E40S	-	-	-	-	-	YES	-	-	-	YES	-	-	-	-	-	-
70th & Pioneers Blvd	70E43S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
70th & Havelock Ave	70E44N	In Use	-	-	-	-	YES	-	-	-	YES	-	NO	Span	-	ALL	-
70th & Cornhusker Hwy	70E44N	In Use	-	-	-	-	YES	-	-	-	-	YES	-	-	-	-	ALL
70th & Stacy Lane	70E45S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
70th & L	70E4S	In Use	-	-	-	-	YES	-	-	-	YES				-	ALL	-
70th & Glynoaks Dr	70E50S	In Use	-	FLIR	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
70th & Old Cheney Rd	70E57S	In Use	-	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
70th & Berean	70E64S	In Use	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-
70th & Hwy 2	70E65S	In Use	In Use	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
70th & Pine Lake Rd	70E70S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
70th & Vine	70E8N	In Use	-	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
70th & S. Wedgewood Dr	70E8S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
Wedgewood & O	71E1N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
Pioneers Blvd & Stacy Lane	71E43S	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
73rd @ Vine	73E8N	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
Ast @ Regency	74E14S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
Pioneers Blvd & Lucile Dr.	76E43S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
Colony Ln & Vine	76E8N	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	ALL	-
Skyway & O	77E1N	In Use	In Use	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
77th & Old Cheney Rd	77E57S	In Use	-	-	-	-	YES	-	-	-	-	YES	-	-	-	-	ALL
Ast @ Cottonwood Dr	79E14S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	FULL	-	-
79th & Van Dorn	79E28S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
Folsom & Ast	7W14S	-	-	-	-	-	-	-	-	-	-	-	NO	Flashers	-	-	-
Hwy 77 & Van Dorn	7W28S	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Truss	-	-	ALL
NW 7th & Fletcher	7W59N	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL

Traffic Engineering Asset Management Database

Intersection	ID#	Pole Base Types				Fiber Cabinet	Communication Type			PTZ Camera	# of Spare Conduits			Used Conduits % Full			
		Steel Plate	Transformer	Wood Pole	Concrete Insert		Fiber	Copper	Radio		2"	3"	4"	1"	2"	3"	4"
Normal Blvd @ 52nd	52E24S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-60%	-
Fremont @ 52nd	52E36N	ALL	-	-	-	-	-	YES	-	-	-	1	-	-	-	1-50%	-
52nd & R	52E4N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-5% , 1-40% , 1-70%
Mahoney & Vine	52E8N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-50% , 1-75%	-
Hwy 77 & Bluff Rd.	56E105N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56th @ Mopac Trail	56E10N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
56th & A	56E14S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-30%	-	1-75% , 1-100%
56th & Holdrege	56E15N	ALL	-	-	-	-	YES	YES	YES	-	-	-	-	-	-	-	1-10% , 1-75% , 1-100%
56th @ Sumner	56E17S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-20% , 1-100%	-	-
56th & O	56E1N	ALL	-	-	-	-	YES	YES	-	YES	-	-	-	-	-	1-30% , 1-60% , 1-70%	-
56th & South	56E21S	-	ALL	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
56th & Leighton	56E23N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%
56th & Normal Blvd	56E24S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	2-85%	-
56th & Van Dorn	56E28S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	2-75%	-
56th & Adams	56E30N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
56th & Fremont	56E36N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%, 1-100%	-
56th & Calvert	56E36S	-	-	-	ALL	-	-	YES	-	-	1	-	-	-	-	1-80%	-
56th & Pioneers Blvd	56E43S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
Cornhusker Hwy & Havelock Ave/Superior	56E44N	ALL	-	-	-	-	YES	YES	-	-	1	-	-	-	2-100%	-	1-100%
Cornhusker Hwy & Superior	56E44N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
56th & Elkcrest Dr	56E49S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-90% , 1-100%	-
56th & R	56E4N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-25%	1-100%	-
L55x (56th) & Morton	56E51N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
56th & Shady Creek Ct	56E55S	-	-	-	ALL	-	YES	YES	-	-	-	-	-	-	2-100%	-	-
56th & Hwy 2	56E55S	ALL		-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
56th & Old Cheney Rd	56E57S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
56th & Pine Lake Rd	56E70S	ALL	-	-	-	YES	YES	-	-	YES	-	-	-	-	-	-	1-50% , 2-100%
56th & Yankee Hill	56E85S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56th & Vine	56E8N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-10% , 2-100%	-
56th & Cotner Blvd/Randolph	56E8S	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	2-100%	-
L55X (56th) & Cornhusker Hwy	57E46N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	5% , 1-20% , 1-75% , 1-10
Ast @ 58th	58E14S	ALL	-	-	-	-	Not Connected	-	-	-	-	-	-	-	-	1-75%	1-10%
Cotner Blvd & O	58E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	1-25%
Fremont & Touzalin Ave	59E36N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-10%	2-60%	-
Havelock Ave & Touzalin Ave	59E44N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
Cornhusker Hwy & Russell Cir	59E47N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
Cotner Blvd & R	59E4N	SE	MOST	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-100%
Old Cheney Rd & Hwy 2	59E57S	ALL	-	-	-	-	YES	-	-	YES	-	1	-	-	-	1-40% , 1-60% , 1-80%	-
Sun Valley & Line Dr.	5W10N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	-	1-75%	1-50%
Sun Valley & West O	5W1N	ALL	-	-	-	-	YES	YES	-	-	1	-	-	-	-	2-100%	-
Leighton Ave @ 60th	60E23N	-	-	-	ALL	-	-	-	-	-	-	-	-	-	1-100%	-	-
Old Cheney Rd & Vandervoort Dr.	60E57S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-25% , 2-100%	-
Holdrege @ 61st	61E15N	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
Lyncrest Dr. & O	62E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-20% , 2-100%
62nd & Havelock Ave	62E44N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-90%	-
Apples Way & Hwy 2	62E61S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-5% , 1-15% , 1-85%
Cotner Blvd & Vine	62E8N	ALL	-	-	-	-	YES	YES	-	-	-	-	-	-	1-100%	-	2-100%
Cotner Blvd @ Fire Station #9	63.5E9N	EB	-	-	NB/SB	-	YES	-	-	-	-	-	-	-	-	1-60%	-
63rd & O	63E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-20% , 2-100%	-
63rd & Adams	63E30N	-	-	-	ALL	-	YES	YES	-	-	-	-	-	-	1-50%	2-70%	-
Fremont @ 64th	64E36N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
South @ Broadmoore Dr.	65E21S	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	1-70%	-	-
66th & Cotner Blvd/Starr	66E14N	-	-	-	ALL	-	-	YES	-	-	1	-	-	-	-	1-100%	-
Cotner Blvd & Holdrege	66E15N	-	-	-	ALL	-	-	YES	-	-	-	-	-	-	-	1-50% , 1-75%	-
66th & O	66E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-10%	1-75% , 1-100%	-
Cotner Blvd & Leighton Ave	66E23N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-70%	-
Cotner Blvd @ Huntington	66E25N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-70%	-	-
66th & Cotner Blvd/Adams	66E30N	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	-	1-50% , 1-70%	-
66th & Q	66E3N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-40% ,1-80%	-
66th @ Mopac Trail	66E6N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
66th & Vine	66E8N	-	-	-	ALL	-	YES	-	-	-	-	-	-	-	-	2-85%	-
68th & O	68E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-20% , 1-75% , 1-100%	-
I-180 NB & Superior	6E44N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-75% , 1-100%
70th & Teton Dr	70E11S	-	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-100%	-
70th & A	70E14S	2	2	-	-	-	YES	-	-	YES	1	-	1	-	1-30%	-	1-100%
70th & Holdrege	70E15N	ALL	-	-	-	-	-	YES	-	-	-	-	1	-	-	-	2-50%
70th @ Lincolnshire Rd	70E18S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-100%	-	-
70th & O	70E1N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-25% , 2-100%
70th & South	70E21S																
70th & Leighton Ave	70E23N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	1-10%	1-100%	-
70th @ Huntington Ave	70E25N	-	ALL	-	-	-	-	-	-	-	-	-	-	-	1-100%	-	-
70th & Van Dorn	70E28S	-	ALL	-	-	-	YES	YES	-	-	2	-	-	-	1-60% , 1-100%	-	-
70th & Adams	70E30N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-20% , 1-60% , 1-70%
70th & Holmes Park Rd	70E32S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-30%	1-50% , 1-80%	-
70th & Fremont	70E36N	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	-	-	2-60%
70th @ Mopac Trail	70E3N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-10% , 1-100%	-
70th & Pioneers Wood Dr.	70E40S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-15% , 1-50% , 1-100%	-
70th & Pioneers Blvd	70E43S	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	-	2-10% , 1-100%	-
70th & Havelock Ave	70E44N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	-
70th & Cornhusker Hwy	70E44N	ALL	-	-	-	-	-	-	YES	-	1	-	-	-	1-50% , 1-75%	1-20% , 1-100%	
70th & Stacy Lane	70E45S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-25% , 1-100%	-
70th & L	70E4S	ALL	-	-	-	-	YES	-	-	-	1	-	-	-	-	-	1-75%
70th & Glynoaks Dr	70E50S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-25% , 1-75%
70th & Old Cheney Rd	70E57S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	2-100%
70th & Berean	70E64S	-	-	-	-	-	-	-	-	-	-	-	-	-	1-50%	-	-
70th & Hwy 2	70E65S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-100%
70th & Pine Lake Rd	70E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-100%
70th & Vine	70E8N	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	2-100%
70th & S. Wedgewood Dr	70E8S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
Wedgewood & O	71E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-20% , 1-75% , 1-100%
Pioneers Blvd & Stacy Lane	71E43S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	2-100%	2-100%	-
73rd @ Vine	73E8N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	1-10%
Ast @ Regency	74E14S	ALL	-	-	-	-	-	-	-	-	-	-	-	-	1-75%	-	-
Pioneers Blvd & Lucile Dr.	76E43S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-25% , 1-50% , 1-60%
Colony Ln & Vine	76E8N	-	-	ALL	-	-	-	-	-	-	-	-	-	-	1-100%	-	-
Skyway & O	77E1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-50%	2-100%	-
77th & Old Cheney Rd	77E57S	ALL	-	-	-	-	-	-	-	-							
Ast @ Cottonwood Dr	79E14S	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	1-100%	-	-
79th & Van Dorn	79E28S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-30% , 1-100%	-	-
Folsom & Ast	7W14S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hwy 77 & Van Dorn	7W28S	ALL	-	-	-	-	-	YES	-	-	1	-	-	-	1-50% , 3-100%	-	-
NW 7th & Fletcher	7W59N	ALL	-	-	-	-	-	-	-	-	-	1	-	-	-	1-60%	-

Traffic Engineering Asset Management Database

Intersection	ID#	Sort E/W	Sort N/S	ACE Maintenance	Overhead Maintenance	Database	Intersection Facility	Built or Rebuilt	DMS	Span Wire	TS1 - C Cabinet Size	TS1 - B Cabinet Size	TS1 - A Cabinet Size	Other Cabinet Size	M52 Controller Type	M40 Controller Type	M03 Controller Type	Other Controller Type	16 Ch. (LCD) Conflict Monitor Type - (LED or LCD)	16 Connected Conflict Monitor Type - (LED or LCD)	12 Ch. Conflict Monitor Type - (LED or LCD)	6 Ch. Conflict Monitor Type - (LED or LCD)	3 Ch. Conflict Monitor Type - (LED or LCD)	Other Conflict Monitor Type - (LED or LCD)
82nd & Adams	82E30N	82E	30N	n/a	n/a	2014	Cabinet Only	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	-	-	-
84th & A	84E14S	84E	14S	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	-	#63414	-	-	-	-	LCD #902-231	-	-	-
84th & Holdrege	84E15N	84E	15N	2015		2014	Traffic Signal	2000	-	-	SE	-	-	-	-	#79832	-	-	-	-	LCD #000310586	-	-	-
84th @ Oakdale Ave	84E18S	84E	18S	2015		2014	Flasher	2001	-	-	-	W	-	-	-	-	-	-	-	-	-	-	-	-
84th & Lexington	84E19N	84E	19N	2015 Build	2015 Build		0Pending Build	2015																
84th & O	84E1N	84E	01N	2015		2014	Traffic Signal	2002	-	-	NW	-	-	-	-	#73146	-	-	-	-	LCD #990507797	-	-	-
84th @ Fire Station #12	84E22S	84E	22S	2015	2014	2014	Traffic Signal	2001	-	-	-	NW	-	-	-	#61999	-	-	-	-	-	LCD #09303-685	-	-
84th & Leighton Ave	84E23N	84E	23N	2015		2014	Traffic Signal	2009	-	-	NE	-	-	-	#100934	-	-	-	-	-	LCD #010702883	-	-	-
84th & Windmill	84E26N	84E	26N	n/a	n/a	2014	Cabinet Only	-	-	-	SW	-	-	-	-	-	-	-	-	-	-	-	-	-
84th & Van Dorn	84E28S	84E	28S	2015		2014	Traffic Signal	2001	-	-	SW	-	-	-	-	#83618	-	-	-	-	LCD #902-221	-	-	-
84th & College Park Rd	84E2N	84E	02N	2015		2014	Traffic Signal	1996	-	YES	SW	-	-	-	-	#73527	-	-	-	-	LCD #110603092	-	-	-
84th & Adams	84E30N	84E	30N	2015		2014	Traffic Signal	2009	-	-	SW	-	-	-	#131864	-	-	-	-	-	LCD #050209781	-	-	-
84th & Rockledge Rd	84E30S	84E	30S	2015		2014	Traffic Signal	2009	-	-	SW	-	-	-	-	#82833	-	-	-	-	LCD #9307-527	-	-	-
84th & Market Dr	84E34N	84E	34N	n/a	n/a	2014	Cabinet Only	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	-	-	-
84th & Fremont	84E36N	84E	36N	2015		2014	Traffic Signal	2012	-	-	SE	-	-	-	#110229	-	-	-	-	-	LCD #9105-326	-	-	-
84th & Firethorn Ln	84E36S	84E	36S	2015	2013	2014	Traffic Signal	2001	-	-	NE	-	-	-	-	#82508	-	-	-	-	LCD #010611992	-	-	-
84th & Pioneers Blvd	84E43S	84E	43S	2015		2014	Traffic Signal	2005	-	-	NW	-	-	-	-	#79835	-	-	-	-	LCD #050209782	-	-	-
84th & Havelock Ave	84E44N	84E	44N	2015		2014	Traffic Signal	2007	-	-	SE	-	-	-	#102821	-	-	-	-	-	LCD #90011225706	-	-	-
84th & Old Cheney Rd	84E57S	84E	57S	2015	2013	2014	Traffic Signal	1998	-	-	SE	-	-	-	#131702	-	-	-	-	-	LCD#9312-169	-	-	-
84th & Cherrywood Dr	84E5S	84E	05S	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-							LCD #906-627	-	-	-
84th & Cornhusker Hwy	84E64N	84E	64N	2015	2014	2014	Traffic Signal	2009	-	-	SE	-	-	-	#102596	-	-	-	-	-	LCD #980400690	-	-	-
84th @ Mopac Trail	84E6S	84E	06S	2015	2014	2014	Pedestrian	2002	-	-	SW	-	-	-	-	#70329	-	-	-	-	-	LCD #090500295	-	-
84th & Pine Lake Rd	84E70S	84E	70S	2015		2014	Traffic Signal	2010	-	-	SE	-	-	-	#107506	-	-	-	-	-	LCD#902-223	-	-	-
84th & Eiger Dr	84E72S	84E	72S	2015	2013	2014	Traffic Signal	2013	-	-	NE	-	-	-	#136505	-	-	-	#090204884	-	-	-	-	-
84th & Hwy. 2	84E76S	84E	76S	2015		2014	Traffic Signal	2003	-	-	NE	-	-	-	#121843	-	-	-	-	-	LCD#030906161	-	-	-
84th & Sandalwood Dr	84E7S	84E	07S	2015		2014	Traffic Signal	2002	-	-	SE	-	-	-	-	#67178	-	-	-	-	LCD #031013425	-	-	-
84th & Vine	84E8N	84E	08N	2015		2014	Traffic Signal	2002	-	-	SW	-	-	-	-	#55731	-	-	-	-	LCD #110501731	-	-	-
87th & Hwy. 2	87E79S	87E	79S	2015		2014	Traffic Signal	2004	-	-	NW	-	-	-	#110282	-	-	-	#080507604	-	-	-	-	-
Roundhouse & West O	8W1N	08W	01N	2014		2014	Traffic Signal	2001	-	-	NW	-	-	-	#121828	-	-	-	-	-	LCD #9503-337	-	-	-
91st & Pine Lake Rd	91.5E71S	91.5E	71S	2015	n/a	2014	Cabinet Only	-	-	-	SW	-	-	-	-	-	-	-	-	-	-	-	-	-
91st & Hwy. 2	91E82S	91E	82S	2015	2013	2014	Traffic Signal	2014	-	-	NE	-	-	-	#120899	-	-	-	#120203078	-	-	-	-	-
98th & Boathouse Rd.	98E3N	98E	3N	2015	n/a	2014	Cabinet Only	-	-	-	SW	-	-	-	-	-	-	-	-	-	-	-	-	-
9th & D	9E11S	09E	11S	2015		2014	Traffic Signal	1985	-	YES	-	-	SE	-	-	#73148	-	-	-	-	-	-	LED #9203-552	-
9th & A	9E14S	09E	14S	2015		2014	Traffic Signal	1985	-	YES	-	-	SE	-	-	#54810	-	-	-	-	-	-	LED #9203-562	-
9th & O	9E1N	09E	01N	2015	2015	2014	Traffic Signal	1998	-	-	NE	-	-	-	#112077	-	-	-	-	-	LCD #121001389	-	-	-
9th & O	9E1N	09E	01N	n/a	n/a	-	DMS	-	YES	-	-	N	-	-	-	-	-	-	-	-	-	-	-	-
9th & South	9E21S	09E	21S	2014		2014	Traffic Signal	2008	-	-	NE	-	-	-	#101619	-	-	-	#080408776	-	-	-	-	-
9th & Park	9E24S	09E	24S	n/a	n/a	-	DMS	-	YES	-	-	W	-	-	-	-	-	-	-	-	-	-	-	-
9th & Van Dorn	9E28S	09E	28S	2015	2014	2014	Traffic Signal	2009	-	-	SE	-	-	-	#134951	-	-	-	#120213025	-	-	-	-	-
9th & Van Dorn	9E28S	09E	28S	n/a	n/a	-	DMS	-	YES	-	-	S	-	-	-	-	-	-	-	-	-	-	-	-
9th & P	9E2N	09E	02N	2015	2015	2014	Traffic Signal	1998	-	-	SW	-	-	-	-	#73522	-	-	-	-	LCD #990507797	-	-	-
9th & N	9E2S	09E	02S	2015	2015	2014	Traffic Signal	1995	-	-	-	-	SE	-	#90181	-	-	-	-	-	-	-	LED #9105-888	-
9th & Q	9E3N	09E	03N	2015	2015	2014	Traffic Signal	2012	-	-	SW	-	-	-	#125211	-	-	-	-	-	LCD #906-627	-	-	-
9th & M	9E3S	09E	03S	2015	2015	2014	Traffic Signal	1995	-	-	-	-	SE	-	#124761	-	-	-	-	-	-	-	LCD	-
9th & L	9E4S	09E	04S	2014	2015	2014	Traffic Signal	1988	-	-	SE	-	-	-	#123870	-	-	-	-	-	LED #610-297	-	-	-
9th & K	9E5S	09E	05S	2014	2015	2014	Traffic Signal	2011	-	-	-	SW	-	-	#110271	-	-	-	-	-	LCD #902-225	-	-	-
9th @ J	9E6S	09E	06S	2015	2014	2014	Pedestrian	1995	-	-	-	-	NW	-	#98075	-	-	-	-	-	-	-	LCD	-
9th @ F	9E9S	09E	09S	2014	2015	2014	Pedestrian	2011	-	-	NW	-	-	-	#125550	-	-	-	-	-	LCD #030506815	-	-	-
Hwy 34 & Fallbrook	9W62N	09W	62N	2014	2014	2014	Traffic Signal	2011	-	-	SE	-	-	-	#110588	-	-	-	-	-	LCD #901-157	-	-	-

Traffic Engineering Asset Management Database

Intersection	ID#	Loops	Magnetics	Cameras	Micro & Radar	Wireless Mag	Installed Rack	Shelf Mount	Camera Board	Pre- Emption	Pre-Emption Available	Possible	Not Possible	Reason	Cabinet Capacity	Iron Plumbing	Astro Brac
		Detector Types					Detector Available					Flashing Yellow				Signal Head Attachments	
82nd & Adams	82E30N	-	-	-	-	-	YES	-	-	-	YES				-	-	-
84th & A	84E14S	In Use	In Use	-	-	-	YES	-	-	YES	YES	YES	-	-	-	-	ALL
84th & Holdrege	84E15N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
84th @ Oakdale Ave	84E18S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
84th & Lexington	84E19N																
84th & O	84E1N	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
84th @ Fire Station #12	84E22S	-	-	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
84th & Leighton Ave	84E23N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
84th & Windmill	84E26N	-	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	-
84th & Van Dorn	84E28S	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
84th & College Park Rd	84E2N	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Span	-	ALL	-
84th & Adams	84E30N	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
84th & Rockledge Rd	84E30S	In Use	-	In Use	-	-	YES	-	YES	YES	YES				-	-	ALL
84th & Market Dr	84E34N	-	-	-	-	-	YES	-	-	-	YES				-	-	-
84th & Fremont	84E36N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Mast Arm	-	-	ALL
84th & Firethorn Ln	84E36S	In Use	In Use	-	-	-	YES	-	-	-	-				-	-	ALL
84th & Pioneers Blvd	84E43S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
84th & Havelock Ave	84E44N	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
84th & Old Cheney Rd	84E57S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	YES	-	-	-	-	ALL
84th & Cherrywood Dr	84E5S	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
84th & Cornhusker Hwy	84E64N	In Use	In Use	-	-	-	YES	-	-	-	-	-	NO	Mast Arm	-	-	ALL
84th @ Mopac Trail	84E6S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	-	-	ALL
84th & Pine Lake Rd	84E70S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
84th & Eiger Dr	84E72S	In Use	-	FLIR	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
84th & Hwy. 2	84E76S	In Use	In Use	In Use	-	-	YES	-	YES	YES	YES	-	NO	Dual Turns	-	-	ALL
84th & Sandalwood Dr	84E7S	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL
84th & Vine	84E8N	In Use	In Use	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	ALL
87th & Hwy. 2	87E79S	In Use	In Use	In Use	-	-	YES	-	YES	-	YES	-	NO	Dual Turns	-	-	ALL
Roundhouse & West O	8W1N	In Use	In Use	-	-	-	YES	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
91st & Pine Lake Rd	91.5E71S	-	-	-	-	-	YES	-	-	-	YES				-	-	-
91st & Hwy. 2	91E82S	In Use	-	FLIR	-	-	YES	-	YES	-	YES	YES	-	-	-	-	ALL
98th & Boathouse Rd.	98E3N	-	-	-	-	-	YES	-	-	-	YES	YES	-	-	-	-	-
9th & D	9E11S	-	-	-	-	-	-	-	-	-	-	-	NO	Span	-	ALL	-
9th & A	9E14S	In Use	-	-	-	-	-	YES	-	-	YES	-	NO	Span	-	ALL	-
9th & O	9E1N	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	One Ways	-	-	ALL
9th & O	9E1N	-	-	-	-	-	-	-	-	-	-				-	-	-
9th & South	9E21S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
9th & Park	9E24S	-	-	-	-	-	-	-	-	-	-				-	-	-
9th & Van Dorn	9E28S	In Use	-	In Use	-	-	YES	-	YES	YES	YES	-	NO	Mast Arm	-	-	ALL
9th & Van Dorn	9E28S	-	-	-	-	-	-	-	-	-	-				-	-	-
9th & P	9E2N	-	-	-	-	-	YES	-	-	-	-	-	NO	One Ways	-	-	ALL
9th & N	9E2S	-	-	-	-	-	-	-	-	YES	YES				FULL	-	ALL
9th & Q	9E3N	-	-	-	-	-	YES	-	-	-	YES	-	NO	One Ways	-	-	ALL
9th & M	9E3S	-	-	-	-	-	-	-	-	YES	YES	-	NO	One Ways	FULL	-	ALL
9th & L	9E4S	In Use	-	-	-	-	YES	-	-	YES	YES	-	NO	One Ways	-	-	ALL
9th & K	9E5S	-	-	-	-	-	-	-	-	YES	YES	-	NO	Mast Arm	-	-	ALL
9th @ J	9E6S	-	-	-	-	-	-	-	-	-	-	-	NO	Ped	FULL	-	ALL
9th @ F	9E9S	-	-	-	-	-	YES	-	-	-	YES	-	NO	Ped	-	-	ALL
Hwy 34 & Fallbrook	9W62N	In Use	In Use	-	-	-	YES	-	-	-	YES	-	NO	Mast Arm	-	-	ALL

Traffic Engineering Asset Management Database

Intersection	ID#	Steel Plate	Transformer	Wood Pole	Concrete Insert	Fiber Cabinet	Fiber	Copper	Radio	PTZ Camera	2"	3"	4"	1"	2"	3"	4"
		Pole Base Types					Communication Type				# of Spare Conduits			Used Conduits % Full			
82nd & Adams	82E30N	-	-	-	-	-	YES	-	-	-	-	-	3	-	-	-	1-10%
84th & A	84E14S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-10%	1-50% , 1-100%	-
84th & Holdrege	84E15N	ALL	-	-	-	-	YES	-	-	-	-	1	-	-	-	1-100%	-
84th @ Oakdale Ave	84E18S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-10% , 1-50%	-	-
84th & Lexington	84E19N																
84th & O	84E1N	ALL	-	-	-	-	YES	-	-	YES	-	1	-	-	1-25%	1-25% , 1-100%	-
84th @ Fire Station #12	84E22S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-20% , 1-50%	-
84th & Leighton Ave	84E23N	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-10% , 2-100%
84th & Windmill	84E26N	ALL	-	-	-	-	YES	-	-	-	-	-	2	-	-	-	1-10%
84th & Van Dorn	84E28S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
84th & College Park Rd	84E2N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	1-25% , 1-100%	-	-
84th & Adams	84E30N	ALL	-	-	-	YES	YES	-	-	YES	-	-	1	-	-	-	1-25% , 1-75% , 1-100%
84th & Rockledge Rd	84E30S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	3-100%
84th & Market Dr	84E34N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-75%	1-75%
84th & Fremont	84E36N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-25% , 1-100%
84th & Firethorn Ln	84E36S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-75%	-
84th & Pioneers Blvd	84E43S	ALL	-	-	-	-	YES	-	-	YES	-	-	1	-	-	-	1-20% , 1-100%
84th & Havelock Ave	84E44N	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-25% , 1-50% , 1-100%
84th & Old Cheney Rd	84E57S	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	1-10% , 2-100%	-
84th & Cherrywood Dr	84E5S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
84th & Cornhusker Hwy	84E64N	ALL	-	-	-	-	-	-	YES	YES	1	-	-	-	-	4-75%	1-75%
84th @ Mopac Trail	84E6S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-5% , 1-50%	-
84th & Pine Lake Rd	84E70S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 2-100%	-
84th & Eiger Dr	84E72S	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-65% , 1-85%
84th & Hwy. 2	84E76S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 2-75%
84th & Sandalwood Dr	84E7S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	2-100%	-
84th & Vine	84E8N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-10% , 1-100%	-
87th & Hwy. 2	87E79S	ALL	-	-	-	-	-	-	YES	YES	-	-	-	-	-	2-100%	-
Roundhouse & West O	8W1N	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
91st & Pine Lake Rd	91.5E71S	-	-	-	-	-	YES	-	-	-	-	-	4	-	-	-	-
91st & Hwy. 2	91E82S	ALL	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2-75%
98th & Boathouse Rd.	98E3N	ALL	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
9th & D	9E11S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-75%	-
9th & A	9E14S	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	1-60%	-
9th & O	9E1N	ALL	-	-	-	-	YES	-	-	-	-	-	1	-	-	1-50% , 1-100%	2-20%
9th & O	9E1N	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
9th & South	9E21S	ALL	-	-	-	-	YES	-	-	YES	-	-	-	-	-	-	1-10% , 2-75%
9th & Park	9E24S	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
9th & Van Dorn	9E28S	ALL	-	-	-	-	-	YES	-	-	-	1	-	-	-	-	1-10%, 1-25%,1-100%
9th & Van Dorn	9E28S	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	-
9th & P	9E2N	ALL	-	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%
9th & N	9E2S	ALL	-	-	-	-	-	YES	YES	YES	-	-	-	-	-	1-100%	-
9th & Q	9E3N	ALL	-	-	-	-	YES	-	-	YES	-	-	1	-	-	-	1-25% , 1-75% , 1-100%
9th & M	9E3S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-100%	-
9th & L	9E4S	-	ALL	-	-	-	YES	-	-	-	-	-	1	-	-	-	1-10% , 1-50%
9th & K	9E5S	ALL	-	-	-	-	YES	-	-	-	2	-	-	-	-	-	1-100%
9th @ J	9E6S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	1-75%	-
9th @ F	9E9S	ALL	-	-	-	-	YES	-	-	-	-	-	-	-	-	-	1-10% , 1-40%
Hwy 34 & Fallbrook	9W62N	ALL	-	-	-	-	-	-	YES	-	-	-	-	-	-	1-40% , 1-60%	-

Pole Inventory

33rd & Baldwin Yard

Pole Inventory

Section 1			
Label	**Length**	**Type**	**Location**
S48082	19	pole	48 & Randolph
S48202	19	pole	48 & South
S48081	19	pole	48 & Randolph
S48084	19	pole	48 & Randolph
S48083	19	pole	48 & Randolph
S48201	19	pole	48 & South
xxx	21	extension	
xxx	25	extension	
S48082	30	arm	48 & Randolph
S48202	30	arm	48 & South
S48112	30	arm	48 & D
S48201	34	arm	48 & South
S48204	35	pole	48 & South
xxx	35	arm	
N45073	36	arm	45th & Vine
S48204	38	arm	48 & South
S30852	38	arm	30th & Yankee Hill
N33491	42	arm	33 & Folkways
S30853	48	arm	30th & Yankee Hill
N33493	50	arm	33 & Folkways
S092804	18'5	truss arm	9th & Van Dorn
S092804	22'6	truss pole	9th & Van Dorn
S33853	45'10	arm	33rd & Yankee Hill

Pole Inventory

Section 2			
Label	**Length**	**Type**	**Location**
N84183	19	pole	84 & Lexington
66598-5	19	pole	
BB65692	25	extension	65th & Lexington
J024628	32	pole	2nd & Lexington
N27671	35	pole	27th & Whitehead
N45073	36	arm	45th & Vine
S33852	38	arm	33rd & Yankee Hill
S33853	46	arm	33rd & Yankee Hill
N84181	50	arm	84th & Lexington
N84182	50	arm	84th & Lexington
N27671	50	arm	27th & Whitehead
N84184	55	arm	84th & Lexington
xx	33'7	extension	
S27891	49'10	arm	27th & Wilderness Hills
S27893	49'8	arm	27th & Wilderness Hills

Pole Inventory

Section 3			
Label	**Length**	**Type**	**Location**
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
S70564	18	pole	70th & Old Cheney
N84184	19	pole	84th & Lexington
S70564	20	arm	70th & Old Cheney
xxx	35	wood pole	
xxx	35	wood pole	
xxx	35	wood pole	
xxx	35	wood pole	
N27671	42	pole	27th & Ridgeline
S09001	45	arm	9th & O
S70561	45	pole	70th & Old Cheney
S70562	45	pole	70th & Old Cheney
S27891	50	arm	27th & Wilderness Hills
S27893	50	arm	27th & Wilderness Hills
S33852	70	arm	33rd & Yankee Hill
S70561	70	arm	70th & Old Cheney
S70562	75	arm	70th & Old Cheney

Pole Inventory

Section 4			
Label	**Length**	**Type**	**Location**
lumineer	11	arm	2
S48083	19	pole	48th & Randolph
S48081	19	pole	48th & Randolph
S48084	19	pole	48th & South
xx	25	extension	
S48203	30	arm	48th & South
S48203	35	pole	48th & South
S48204	38	arm	48th & South
S48204	40	pole	48th & South
NW48251	40	pole	NW 48th & W Huntington
NW48254	40	pole	NW 48th & W Huntington
S84512	41	arm	84th & Glynoaks
S48081	42	arm	48th & Randolph
S84514	44	arm	84th & Glynoaks
S48084	44	arm	48th & Randolph
S48083	46	arm	48th & Randolph
S48083	46	arm	48th & Randolph
S84511	50	arm	84th & Glynoaks
S84513	50	arm	84th & Glynoaks
xx	11'9	extension	
NW48304		pole	NW 48th & W Adams
NW48303		pole	NW 48th & W Adams
NW48301		pole	NW 48th & W Adams
NW48302		pole	NW 48th & W Adams

Pole Inventory

Section 5			
Label	**Length**	**Type**	**Location**
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
NW48252	24	arm	NW 48th & W Huntington
xx	25	arm	
NW48254	28	arm	NW 48th & W Huntington
S59691	38	arm	59th & Pine Lake
NW48253	48	arm	NW 48th & W Huntington
NW48251	50	arm	NW 48th & W Huntington
S56734	37'10	arm	56th & Red Rock
S56731	41'8	arm	56th & Red Rock
S56733	41'8	arm	56th & Red Rock
N84332	43'10	arm	84th & Market
N84334	45'10	arm	84th & Market
N84333	45'10	arm	84th & Market
N84331	49'10	arm	84th & Market
S59692	49'10	arm	59th & Pine Lake
S59693	49'10	arm	59th & Pine Lake
S56732	49'10	arm	56th & Red Rock
S59694	49'10	arm	59th & Pine Lake
NW48304		arm	NW 48th & W Adams
NW48301		pole	NW 48th & W Adams
xxx		extension	
NW48302		arm	NW 48th & W Adams
NW48303		arm	NW 48th & W Adams
N14023		pole	14th & Q
N12021		pole	12th & Q
xxx		pole	
N13023		pole	13th & Q
N14023		pole	14th & Q
xxx		pole	
N84331		pole	
N84333		pole	

Pole Inventory

Section 6			
Label	**Length**	**Type**	**Location**
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
CB20360	33	ext	
N33495	35	pole	33rd & Folkways
S70401	40	arm	70th & Pioneer Woods
NW48251	40	pole	NW 48th & W Huntington
NW48252	40	pole	NW 48th & W Huntington
NW48253	40	pole	NW 48th & W Huntington
NW48254	40	pole	NW 48th & W Huntington
S70402	46	arm	70th & Pioneer Woods
S70402	50	arm	70th & Pioneer Woods
N98032	50	arm	98th & Boathouse
N98033	38'6	arm	98th & Boathouse
N98031	41'9	arm	98th & Boathouse
N01601	49'10	arm	1st & Fallbrook
N01602	49'9	arm	1st & Fallbrook
N01603	49'9	arm	1st & Fallbrook
xxx		pole	
xxx		arm	

Pole Inventory

Section 7			
Label	**Length**	**Type**	**Location**
S48203	30	arm	48th & South
S48203	40	pole	48th & South
N14475d1		arm	14th & Superior
N144753	46	arm	14th & Superior
N842611		arm	84th & Windmill
N144703	46	arm	14th & Superior
N14475d1		arm	14th & Superior
N84144	50	arm	84th & Holdrege
W045002		arm	
N84141	70	arm	84th & Holdrege
XXX		arm	
N12021		arm	12th & Q
N16014		arm	16th & P

Pole Inventory

Section 8			
Label	**Length**	**Type**	**Location**
S9013	40	arm	9th & O
S11013		pole	11th & N
N84261	55	arm	84th & Windmill
S9013	18	pole	9th & O
S11013		arm	11th & N
N84262	55	arm	84th & Windmill
N84264	65	arm	84th & Windmill
S27753	55	arm	27th & Tamarin Ridge Road
S27754	44	arm	27th & Tamarin Ridge Road
xxx		extension	
xxx		extension	
S91691	60	arm	91st & Pine Lake
S91694	65	arm	91st & Pine Lake
S91693	70	arm	91st & Pine Lake
S91692	70	arm	91st & Pine Lake

Pole Inventory

Section 9			
Label	**Length**	**Type**	**Location**
S09022		arm	9th & M
S70521		pole	
N66153		arm	
xxx		arm	
xxx		arm	
S70522		arm	
S70523		arm	
N66154	36	arm	Cotner & Holdrege
N66152	36	arm	Cotner & Holdrege
N72071		pole	72nd & Vine
N72071		arm	72nd & Vine
xxx		arm	
S09022		pole	9th & M
S70523		pole	
S70552		pole	
N66154	19	pole	Cotner & Holdrege
N66151	19	pole	Cotner & Holdrege
N66152	35	pole	Cotner & Holdrege
N66153	35	pole	Cotner & Holdrege

Pole Inventory

Section 10			
Label	**Length**	**Type**	**Location**
NW48254	28	arm	NW 48th & W Huntington
NW48251	50	arm	NW 48th & W Huntington
NW48252	24	arm	NW 48th & W Huntington
NW38253	48	arm	NW 48th & W Huntington
xxx		pole	
xxx		pole	
S03692		arm	
S00664		arm	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	

Pole Inventory

Section 11			
Label	**Length**	**Type**	**Location**
xx	30	strain pole	
xx	30	strain pole	
xx	30	strain pole	
xx	30	strain pole	
xx	30	strain pole	
xx	30	strain pole	
xx	30	strain pole	
N27453	75	pole	27th & Superior
N27453	30	arm	27th & Superior
xx		extension	

Pole Inventory

Section 12			
Label	**Length**	**Type**	**Location**
xxx		extension	
xxx		extension	
xxx		extension	
xxx		extension	
xxx		extension	
xxx		extension	
xxx		pole	
xxx		pole	
xxx		truss pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	30	strain pole	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	11	lumineer	
xxx	5	extension	
xxx	5	extension	
xxx	5	extension	
xxx	5	extension	

APPENDIX B

ITS Field Device Inventory

CCTV Camera Inventory

	Owner	Intersection		IP Address	Type	Other
1	City	9	N		P5534-E	
2	City	9	Q		P5534-E	
3	City	9	South		232 D+	
4	City	9	Van Dorn		241 S	Lowering Pole
5	City	10	O		P5534-E	
6	City	14	Adams		232 D+	
7	City	14	Hwy 2		281 OEM	
8	City	14	I80		P5534-E	Lowering Pole
9	City	14	Old Cheney		241 S	
10	City	14	Roundabout		P5534-E	Lowering Pole
11	City	16	South		P5534-E	
12	City	27	Capital Pkwy		281 OEM	
13	City	27	Cornhusker		233 D	
14	City	27	Hwy 2		2401+	Lowering Pole
15	City	27	O		P5534-E	
16	City	27	Old Cheney		2401	
17	City	27	Pine Lake		2401	
18	City	27	South		2401	
19	City	27	Superior		P5534-E	
20	City	27	Vine		P5534-E	
21	City	27	Whitehead		281 OEM	
22	City	27	Yankee Hill		241 S	
23	City	33	Sheridan		2401	Lowering Pole
24	City	34	Fletcher		281 OEM	
25	City	35	Cornhusker		P5534-E	
26	City	40	Hwy 2		P5534-E	
27	City	40	Pine Lake		M7001	
28	City	40	Sheridan		2401+	Lowering Pole
29	City	40	Yankee Hill		241 S	
30	City	48	Holdrege		281 OEM	
31	City	48	O		281 OEM	
32	City	48	Pioneers Blvd		P5534-E	
33	City	48	Vine		P5534-E	
34	City	48	West O		233 D	
35	City	56	O		2401	
36	City	56	Pine Lake		281 OEM	
37	City	70	A		232 D+	
38	City	70	Adams		2401	
39	City	70	O		2401	
40	City	70	Pioneers Blvd		241 S	
41	City	70	Old Cheney		P5534-E	
42	City	84	Adams		232 D+	
43	City	84	Cornhusker		2401	
44	City	84	Havelock		P5534-E	
45	City	84	O		P5534-E	
46	City	84	Old Cheney		241 S	
47	City	84	Pioneers Blvd		233 D	
48	*UNL*	*84*	*Hwy 2*		*233 D*	
49	City	87	Hwy 2		233 D	
50	City	Antelope	O		P5534-E	
51	City	Ballpark			P5534-E	
52	City	Big T			241 S	
53	City	Deck 1			P5534-E	
54	City	Hwy 77	Rosa Parkway		281 OEM	
55	City	I180	Cornhusker		P5534-E	
56	City	K St			2401	
57	City	L55x	Cornhusker		241 S	Lowering Pole
58	City	Normal Blvd	South		241 S	
59	City	Old Cheney	Hwy 2		281 OEM	
60	City	Stadium Roundabout			P5534-E	
61	City	Sun Valley	West O		P5534-E	

Camera Breakdown by Type				
22	P5534-E	IP	Good	POE
3	232 D+	IP	Good	*
6	233 D	IP	?	*
1	M7001	IP	?	*
9	281 OEM	IP	Bad	*
0	Mobotix-Q24	IP	Bad	POE
9	241 S	N/A	Bad	-
9	2401	N/A	Bad	-
2	2401+	N/A	Bad	-

Updated: 12/02/13

* = Requires 2 cables (1 to power camera and heater and 1 for Network)

- = Requires 3 cables (1 to power camera and heater, 1 for zoom control, 1 for picture)(power, coax, cat5) and video server is in cabinet that is programmed

DMS Inventory List

☑ Highlight not Connected

Location/Inventory Number	Description	Item Number	Portable or Permanent	Controller Serial Number	Trailer Serial Number	Year Purchased	Life Expectancy	Initial Cost	Tag Number	NTCIP Complian	Size	Picture Capable	IP Address / Phone
Mobile SB-1	Ver-Mac PCMS 548 SPP		Portable	02-05078RS			8			No	30X56	No	
Mobile SB-2	Ver-Mac PCMS 548 SPP		Portable	02-05079RS			8			No	30X56	No	
Mobile SB-3	Ver-Mac PCMS 548 SPP		Portable	02-05080RS			8			No	30X56	No	
Mobile SB-4	Ver-Mac PCMS 548 SPP	00139192	Portable	02-05081RS	2S9US11141S132047	11/13/2001	8	$ 10,000.00	92228	No	30X56	No	
Mobile SB-5	Ver-Mac PCMS 548 SPP	00139213	Portable	02-05082RS	2S9US11141S132049	11/13/2001	8	$ 10,000.00	92230	No	30X56	No	
Mobile SB-6 bad not workii	Ver-Mac PCMS 548 SPP	00139221	Portable	02-05083RS	2S9US11141S132050	11/13/2001	8	$ 10,000.00	92231	No	30X56	No	
Mobile SB-7	Ver-Mac PCMS 548 SPP	00139230	Portable	01-10047RS	2S9US11141S132051	11/13/2001	8	$ 10,000.00	92232	No	30X56	No	
Mobile SB-8	Ver-Mac PCMS 548 SPP	00139248	Portable	01-10048RS	2S9US11141S132052	7/9/2002	8	$ 10,000.00	92233	No	30X56	No	
Mobile SB-9	Ver-Mac PCMS 548 SPP	00139256	Portable	01-10049RS	2S9US11141S132053	7/9/2002	8	$ 10,000.00	92234	No	30X56	No	
Mobile SB-10	Ver-Mac PCMS 548 SPP	00141356	Portable	01-10050RS	2S9US11122S132078	5/29/2002	8	$ 10,000.00	92222	No	30X56	No	
Mobile SB-11	Ver-Mac PCMS 548 SPP	00141364	Portable	01-10051RS	2S9US11122S132079	5/29/2002	8	$ 10,000.00	92223	No	30X56	No	
Mobile SB-12	Ver-Mac PCMS 548 SPP	00142341	Portable	01-10052RS	2S9US11102S132080	7/9/2002	8	$ 10,000.00	92224	No	30X56	No	
Mobile SB-13	Ver-Mac PCMS 548 SPP	00142367	Portable	01-10053RS	2S9US11142S132082	7/29/2002	8	$ 10,000.00	92226	No	30X56	No	
Mobile B-1	Ver-Mac PCMS 1210 PP	00137630	Portable	01-07776RS		8/13/2001	8	$ 16,500.00	92216	No	30X56	No	
Mobile B-2	Ver-Mac PCMS 1210 PP	00137648	Portable	01-07777RS		8/13/2001	8	$ 16,500.00	92217	No	30X56	No	
Mobile B-3	Ver-Mac PCMS 1210 PP	00137656	Portable	01-07778RS		8/13/2001	8	$ 16,500.00	92218	No	30X56	No	
Mobile B-4	Ver-Mac PCMS 1210 PP	00137664	Portable	01-07779RS		8/13/2001	8	$ 16,500.00	92219	No	30X56	No	
Mobile B-5	Ver-Mac PCMS 1210 PP	00143183	Portable	02-081121RS	2S9US41542S132121	8/23/2002	8	$ 16,500.00	92220	No	30X56	No	
Mobile B-6	Ver-Mac PCMS 1210 PP	00143191	Portable	02-081122RS	2S9US41542S132122	8/23/2002	8	$ 16,500.00	92221	No	30X56	No	
27th & Old Cheney EB	Ver-Mac PCMS 548 SPP	00170587	Permanent	03-05148RS		6/17/2003	15	$ 6,500.00	N/A	No	30X56	No	
28th & Old Cheney WB	Ver-Mac PCMS 548 SPP	00170595	Permanent	03-05149RS		6/17/2003	15	$ 6,500.00	N/A	No	30X56	No	
27th & Old Cheney NB	Ver-Mac PCMS 548 SPP	00170608	Permanent	03-05150RS		6/17/2003	15	$ 6,500.00	N/A	No	30X56	No	
31st & O St	Ver-Mac PCMS 548 SPP	00170616	Permanent	03-05151RS		6/17/2003	15	$ 6,500.00	N/A	No	30X56	No	
38th & O St	Ver-Mac PCMS 548 SPP	00170624	Permanent	03-05147RS		6/17/2003	15	$ 6,500.00	N/A	No	30X56	No	
52nd & Cornhusker HWY	Ver-Mac PCMS 548 SPP		Permanent	02-04075RS			Exceeded			No	30X56	No	
23 of 27 portable DMS working													
16 of 17 Permanent DMS working													

DMS Inventory List

☑Highlight Not Connected

Location/Inventory Number	Description	Item Number	Portable or Permanent	Controller Serial Number	Trailer Serial Number	Year Purchased	Life Expectancy	Initial Cost	Tag Number	NTCIP Compliant	Size	Picture Capable	IP Address / Phone
Mobile SB-14	ADDCO message board	00176372	Portable		4SEPN161XBM4SE038	3/22/2011	8	$ 19,749.00	92254	Yes Version 1	12 High Density 8X12	No	
Mobile SB-15	ADDCO message board	00176381	Portable		4SEPN1618BM4SE037	3/22/2011	8	$ 19,749.00	92255	Yes Version 1	12 High Density 8X12	No	
Mobile SB-16	ADDCO message board	00176399	Portable		4SEPA0910BM4SE020	3/22/2011	8	$ 16,598.00	92256	Yes Version 1	12 High Density 8X12	No	
Mobile SB-17	ADDCO message board	00176401	Portable		4SEPA0912BM4SE021	3/22/2011	8	$ 16,598.00	92257	Yes Version 1	12 High Density 8X12	No	
Mobile SB-18	ADDCO message board	00176410	Portable		4SEPA0916BM4SE023	3/22/2011	8	$ 16,598.00	92258	Yes Version 1	12 High Density 8X12	No	
Mobile SB-19	ADDCO message board	00176428	Portable		4SEPA0914BM4SE022	3/22/2011	8	$ 16,598.00	92259	Yes Version 1	12 High Density 8X12	No	
Mobile BB-7	2008 ADDCO msg trailer	00165614	Portable		4SEPA09148M4SE028	5/21/2008	8	$ 16,345.00	0792261	Yes Version 1	14 High Density 8X12	No	
Mobile BB-8	2008 ADDCO msg trailer	00165622	Portable		4SEPA09168M4SE029	5/21/2008	8	$ 16,345.00	0792261	Yes Version 1	14 High Density 8X12	No	
54th & Cornhusker EB	Addco message 17.2" char	00167724	Permanent			6/22/2007	15	$ 36,925.00	N/A	Yes Version 1	14 High Density 8X12	No	
Russel & Cornhusker WB	Addco message 17.2" char	00167732	Permanent			6/22/2007	15	$ 36,925.00	N/A	Yes Version 1	14 High Density 8X12	No	
56th & Morton SB	Addco message 17.2" char	00167741	Permanent			6/22/2007	15	$ 36,925.00	N/A	Yes Version 1	14 High Density 8X12	No	
West O St WB	Addco message 12" char	00176356	Permanent			1/1/2008	15	$ 27,254.00	N/A	Yes Version 1	13 High Density 8X12	No	
West O St EB	Addco message 17.2" char	00176364	Permanent			1/1/2008	15	$ 36,610.00	N/A	Yes Version 1	14 High Density 8X12	No	
10th & High NB	Addco message 17.2" char	00167100	Permanent			8/1/2008	15	$ 36,610.00	N/A	Yes Version 1	14 High Density 8X12	No	
9th & Park SB	Addco message 12" char	00167126	Permanent			8/1/2008	15	$ 27,254.00	N/A	Yes Version 1	6X3	No	
6th & Vandorn EB	Addco message 17.2" char	00167118	Permanent			8/1/2008	15	$ 36,610.00	N/A	Yes Version 1	14 High Density 8X12	No	
14th & HWY 2 WB	Addco message 17.2" char	00167273	Permanent			8/1/2008	15	$ 36,610.00	N/A	Yes Version 1	14 High Density 8X12	No	

DMS Inventory List

☑Highlight Not Connected

Location/Inventory Number	Description	Item Number	Portable or Permanent	Controller Serial Number	Trailer Serial Number	Year Purchased	Life Expectancy	Initial Cost	Tag Number	NTCIP Compliant	Size	Picture Capable	IP Address / Phone
27th Overpass NB	Daktronics VFC-3000		Permanent			2014	15		N/A	Yes Version 2		Yes	
27th Overpass SB	Daktronics VFC-3000		Permanent			2014	15		N/A	Yes Version 2		Yes	

Portable Signal Trailers

☑Highlight Not Connected

	Location/Inventory Number	Description	Item Number	Portable or Permanent	Controller Serial Number	Trailer Serial Number	Year Purchased	Life Expectancy	Initial Cost	Tag Number	Size	Picture Capable	IP Address / Phone
##	Mobile	Portable Traffic Counter	00178280	Portable		SPJ1452PU2012	8/2/2012	10	$14,938.49	0792270			
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APPENDIX C

LTIS Broadband Infrastructure Plan

Executive Summary

Lincoln Technology Improvement System

BROADBAND INFRASTRUCTURE PLAN

2014 – 2020

Chris Beutler, Mayor

Miki Esposito, Director of Public Works & Utilities

CITY OF LINCOLN NEBRASKA

ENGINEERING SERVICES | 949 W BOND ST

Executive Summary

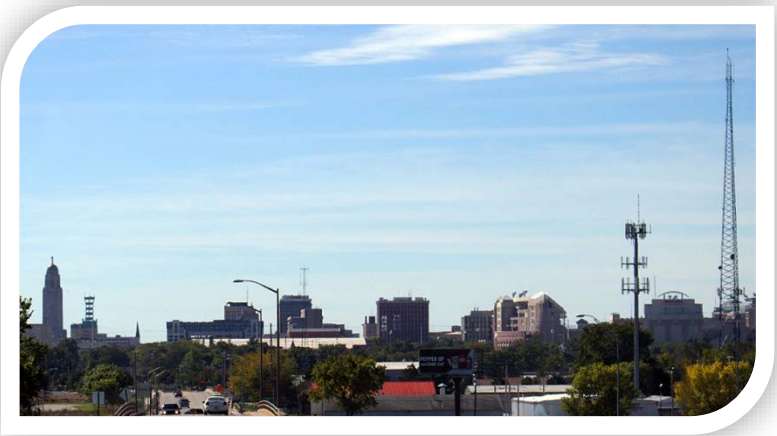
Broadband Infrastructure Capital Improvement Plan ($750,000 per year)

Starting in late 2012, the Mayor's office, City Council, Chamber of Commerce and Lincoln Partnership for Economic Development came together to support an initiative called the Lincoln Technology Improvement System (LTIS). The LTIS project calls for a master planned broadband infrastructure system installed throughout the city to be made available for lease to private carriers. The goal of the system is to create competition for services and lower the cost of constructing new networks within the City. The current system consists of over 300 miles of broadband infrastructure that has been leased to five broadband companies (UNL, Nebraska Link, Windstream, UPN and CenturyLink) over the last year. The system will support up to 8 new providers over the next 20 years. Based on this success, the City Council adopted a Broadband Infrastructure Capital Improvement Program into the 2014-16 annual budgets to support the system growth.

The Broadband Infrastructure Capital Improvement Program (CIP) spans six years (2014-2020) and includes three objectives:

1. Expand the LTIS broadband infrastructure to cover major business centers within the City.
2. Upgrade the existing Institutional Fiber network to a 10 gigabit capable system.
3. Construct new broadband connections for Public entities in the City.

In a flat world, Lincoln is competing with communities around the globe to attract new businesses and keep young professionals. Affordable access to Gigabit-speed fiber networks has been proven to foster innovation, business investment, and growth in communities across the nation. Expanding the LTIS broadband infrastructure to our major business centers will enable Lincoln to offer businesses access to affordable, fiber-based networks. By the end of 2020, 100 miles of new LTIS broadband infrastructure will be extended to connect Airpark, Havelock, Yankee Hill, Coddington and other major business centers with world-class network technology.



Institutional Network Improvement Plan ($200,000 per year)

Upgrading the community network will benefit the City, County and State government agencies with faster backbone connections. Upgrading the Institutional Network will connect all city and county facilities to the 10 gigabit fiber backbone. Additional expansion of the Institutional Network will increase employee productivity and decrease costs across all departments. Phase one of the CIP program will upgrade 30 miles of multimode fiber to the 10 gigabit standard in the first two years. Phase two will remove old copper cables from ten miles of existing conduit making it available for commercial carrier usage. Once complete, all public facilities connected to the Institutional Fiber Network will have access to a 10 gigabit fiber connection.

Public agencies and private businesses share a common goal in today's economic climate, "Doing more with less." Employee productivity is the backbone of successful strategies in achieving this goal. With more and more emphasis placed on technology to achieve increased productivity, network cost and speed must be constantly evaluated. The City has over 60 locations with high-cost, low-speed, copper network connections. The non-fiber network locations include public libraries, parks and civic entities. Once connected to the Institutional fiber network, employees at these locations can see their productivity increase through faster downloads, fewer computer viruses and consistently higher network performance. Department managers will see a 94% cost reduction in the cost to provide network connections from $50 per megabit to $3 per megabit. The broadband CIP will add fiber-based network connections at more than 40 locations by 2020.

Included within the Institutional Network expansion project is an IP Network Master Plan. The IP Network Master Plan will add 16 million new IP addresses to the public network. Adding the new IP addresses will allow the Institutional Network to grow for the next 50 years. Additional funding would enable the connection of all public facilities to the Institutional fiber network.

Downtown Lincoln Wi-Fi Plan ($350,000 per year for 4 years)

The efficient use and expanded access to public Wi-Fi resources are fundamental to Lincoln's future economic growth and global competitiveness. Congestion of the wireless spectrum and scarcities in both licensed and unlicensed bands must be addressed for continued innovation and investment growth. Access to wireless technology in our public spaces for use by residents, visitors, and even businesses has become an everyday expectation. In 2006, a panel of public and private sector leaders evaluated public Wi-Fi for Lincoln. They recommended a public Wi-Fi system be installed in the core economic zone. The Downtown Lincoln Wi-Fi Plan is a public-private partnership which gives residents and visitors a fast and reliable Wi-Fi connection in one of the most exciting and fastest growing areas of our community.

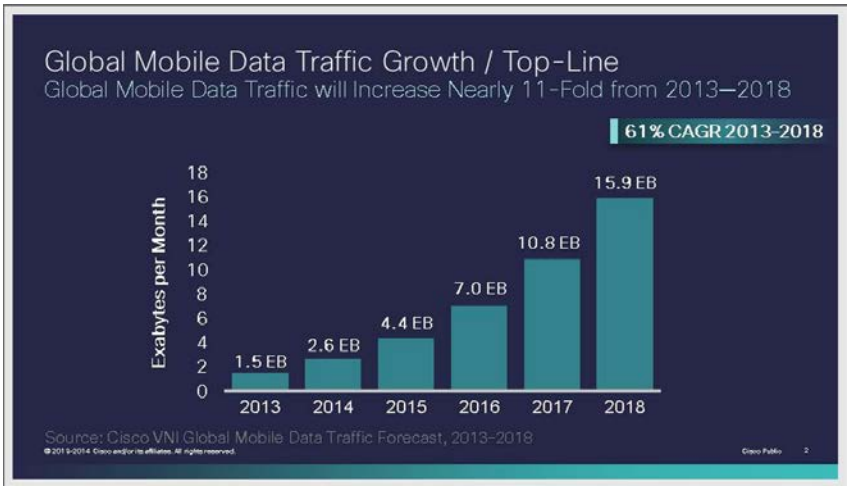
In May 2014, the City and five private entities collaborated to provide a pilot Public Wi-Fi service for Iron Horse Park. Iron Horse Park is located in the center of the revitalized Haymarket and new Rail Yard districts. The project was scheduled to last from May 15th to Sept 15th. The public response to the Wi-Fi system was overwhelmingly positive. Over 1,500 people accessed the system during the project.

On August 9th, 2014, the Lincoln Chamber of Commerce, Lincoln Partnership for Economic Development, WRK, and several private businesses sponsored a "Support the Public Wi-Fi" party with over 250 people logging into the public wireless system during this 4 hour event. Additionally, 150 people logged into Facebook and "liked" the Public Wi-Fi. Multiple positive news articles and letters were written in support of the Lincoln Public Wi-Fi Plan.

The Public Wi-Fi Plan would construct new public wireless systems in the following areas:

1. Phase I – Centennial Mall and Civic Plaza
2. Phase II – Haymarket and Rail Yard
3. Phase III – Downtown Retail Economic Zone

Lincoln's broadband strategy is based on a strategy of partnership between community leaders and private broadband carriers to ensure the success of the Public Wi-Fi system. Creating a Public Wi-Fi system in downtown Lincoln will further our goals of economic development and technology leadership. Mobile date traffic is projected to double every year for the six years. The Public Wi-Fi system has been designed to handle this growth. UNL staff, Downtown Lincoln Association, Lincoln Chamber of Commerce and members of the City Council have offered support for the project.



According to Cisco, by 2018 Global mobile data traffic will exceed 15 Exabytes (EB). An Exabyte is equivalent to a million Terabytes. Just 10 Terabytes of data would hold the printed collection of the U.S. Library of Congress. LTE Cellular networks are limited to 20 megabits per seconds (Mbps). Current Wi-fi technology (802.11ac) is rated at 500 Mbps or 40 times faster than LTE. The Downtown Lincoln Wi-Fi infrastructure is designed to support the LTE/Wi-Fi convergence and small cell network designs of the near future.

Summary and Recommendations

As the driving force behind the Tennessee Valley Authority and Rural Electrification Act, Senator George Norris would remind us "cooperation is a mechanism for self help." The LTIS project was born of cooperative effort between Lincoln's business, community, and City leaders. The success of the initial LTIS is unquestioned. In the first 18 months of operation, it system has achieved the following goals:

1. Six private conduit lease agreements have been signed
2. Over 60 miles of private fiber optics have been installed
3. A competitive Cable TV franchise has been signed
4. Public Broadband service cost has decreased 80% and services increased 400%

The LTIS Broadband Infrastructure Plan goals are to extend competitive fiber optic-based broadband networks to our community business; upgrade and expand the existing Institutional Network to all public entities; and create a broadband infrastructure to ensure future generations have affordable, competitive, and quality access to the infrastructure of the 21st century. To achieve these goals, the LTIS Broadband Infrastructure Plan included $1.3 million dollars in funding for three elements:

LTIS Mission Statement:

"To deliver fast, reliable, and affordable broadband to City of Lincoln citizens and businesses"

1. Broadband Infrastructure to Business Centers
2. Institutional network upgrades and expansion
3. Public Wi-Fi in the Central Business District

The LTIS Broadband Infrastructure Plan will continue to achieve success through cooperation with community stakeholders and the vision of our City Leadership. Public Works requests support from Mayor Chris Beutler and the Lincoln City Council in identifying continued funding for this project.

APPENDIX D

National Traffic Signal Report Card

Executive Summary

2012 National Traffic Signal Report Card

Executive Summary

National Transportation Operations Coalition

NTOC

The National Transportation Operations Coalition periodically conducts the Traffic Signal Operations Self Assessment to benchmark current practices and to evaluate how effectively agency programs support the management, operations, and maintenance of traffic signals. The *2012 National Traffic Signal Report Card* presents the results from the self-assessment survey from 241 local and state agencies in the United States and Canada.

The 2012 grade of D+ is a slight improvement over grades of a D- in 2005 and a D in 2007. The continuing slow improvement in the national score is meaningful in showing the ongoing progress by agencies that operate the majority of traffic signals in the United States. The responding agencies were weighted equally nationally, which is appropriate when considering the perspective of motorists who have no recognition of jurisdictional boundaries as they drive the roadway network. The size of an agency matters when considering access to the expertise and resources necessary to effectively manage, operate, and maintain traffic signals. An examination of scoring trends indicated that medium and large agencies operating more than 150 traffic signals scored a grade of C on a national basis.

"Performance Measures are a fundamental component of INDOT's vision for active traffic management. They enable us to collect and analyze data, prioritize investment, and implement and assess the most promising solutions."

—Michael B. Cline
Commissioner, Indiana Department of Transportation

"Mayor Antonio Villaraigosa and the Los Angeles City Council worked tirelessly to secure state funding and regional grants so that the Los Angeles Department of Transportation can meet the needs of the public by implementing the adaptive traffic control system in the second generation of LADOT's signal synchronization technology developed in-house by our engineers…"

—Jaime de la Vega
General Manager, Los Angeles Department of Transportation

"With agencies facing difficult budgetary choices, the traffic signal operations self assessment identifies opportunities that can be delivered through our regional traffic signal program to provide 'seamless' traffic signal operations across jurisdictional boundaries through the creation and support of a centrally coordinated regional traffic signal network."

—Paul Casertano
Transportation Operations and Safety Lead, Pima Association of Governments, Tucson, Arizona

"… With the state of the economy and local budgetary constraints, our resources continue to be reduced while the number of traffic signals continue to increase. This survey is a very functional tool for us to demonstrate how we are managing these limited resources to achieve our vision of providing quality, efficient, sustainable services to the citizens of Pasco County."

—Robert W. Reck
Traffic Operations Manager, Pasco County, Florida

Estimated Annual Expenditure and Value

- Number of traffic signals 311,000
- Value of traffic signal infrastructure assets $82.7 billion
- Annual operating and maintenance program cost $1.2 billion
- Annual capital program cost $859 million

Facts on Signal-Related Congestion

Delays at traffic signals contribute an estimated 5 to 10 percent of all traffic delay or 295 million vehicle-hours of delay on major roadways alone.[1] Further, the *2011 Urban Mobility Report* notes that in its reporting areas 61 percent of the street miles in the cities had some level of traffic signal coordination that reduced delay by 21.7 million person hours.[2] The U.S. Department of Transportation Intelligent Transportation Systems Joint Program Office maintains a database that documents traffic signal management and operations studies conducted by various agencies demonstrating benefit-cost ratios exceeding 40:1.[3]

[1] Congestion Reduction Toolbox. U.S. Department of Transportation Federal Highway Administration. Accessible via www.fhwa.dot.gov/congestion/toolbox

[2] *2011 Urban Mobility Report*. Methodology-Benefits of Operational Treatments. Texas Transportation Institute, 2011. Accessible via http://mobility.tamu.edu/files/2011/09/operational-treatments.pdf

[3] ITS Benefits, Costs and Lessons Learned Database. U.S. Department of Transportation (U.S. DOT) Intelligent Transportation Systems Joint Program Office. Accessible via www.benefitcost.its.dot.gov

National Traffic Signal Report Card 2012	
Management	D
Traffic Signal Operations	C
Signal Timing Practices	C
Traffic Monitoring and Data Collection	F
Maintenance	C
OVERALL	D+

Noteworthy Findings

For the most part, agencies continue to face challenges in their efforts to improve traffic signal operations:

- The national score (69) remains low. The impact of the recent economic downturn has affected funding priorities at all levels of government, especially at the local level in some hard hit parts of the country.
- Agencies operating more than 150 signals have an overall grade of C (73). This is an indication of larger staff resources assigned to traffic signal programs as well as a balance of resources compared to the relative complexity and size of the traffic signal system.
- There was little distinction between traffic signal systems with 150 to 450, 450 to 1,000, or more than 1,000 signals; all scored a composite of (73).
- The signal timing practices section scored the highest for all signal system sizes except systems with less than 50 signals, where maintenance scored the highest.
- The maintenance section received the second-highest overall score (73) followed closely by the traffic signal operations section (72). However, for those agencies with more than 450 signals, traffic signal operations received the second highest score.
- The traffic monitoring and data collection section continues to be the lowest-scoring section.
- Very small signal systems (less than 50 signals) scored markedly lower (an overall score of 59) than all other system sizes (ranging from 69 to 73) although they improved from the 2007 overall result of 51.

The low scores demonstrate the continued need for attention and additional resources for traffic signal management and operations.

What Can An Agency Do Right Now?

- Take a rigorous and systematic look at all the components of traffic signal operations in the organization and develop an objectives-driven program management plan that addresses any shortcomings and encourages coordination with neighboring jurisdictions and interaction with the public.
- Engage in workforce development and succession planning for all traffic signal operations staff using available resources from government agencies, universities, professional associations, and content available through the Internet from credible sources.
- As a mechanism to evaluate achievement of objectives, establish or expand a traffic monitoring and data collection program to provide the basis for signal timing updates and feedback to the traffic signal program management plan.
- Develop an outreach strategy for policymakers and the public for the traffic signal program management plan.

What Are We Really Trying To Achieve?

How can agencies provide good basic service even when their resources are constrained?

The first step starts with understanding motorist expectations as they drive through traffic signals. Practitioners must understand those expectations and articulate them as the basis for establishing objectives, using the following principles:

- Field infrastructure reliability
- Signal timing that addresses congestion
- Smooth flow
- Predictable and consistent operation
- Versatility

In addition to the above principles that address clarity of objectives, attainable performance measures, field infrastructure reliability, and signal timing aimed at motorist expectations, the FHWA report, *Improving Traffic Signal Management and Operations: A Basic Service Model*, also suggests additional issues that should be addressed in a traffic signal management plan. These are:

- Objective-based resource allocation
- Clear communication
- Meaningful systems engineering

Benefits of Traffic Signal Management and Operations Programs

Appropriately designed, operated, and maintained traffic signals can:

- Provide for the smooth flow of traffic along streets and highways at defined speeds, thereby **reducing congestion**;
- Effectively manage the traffic-handling capacity of intersections to **improve mobility** through the use of appropriate layouts and control measures and regular reviews and updates to the operational parameters; and
- Reduce vehicle stops and delays, thereby:
  - **lessening the negative impacts to air quality**; and
  - **reducing fuel consumption.**

An objectives and performance-based plan enables the proactive management, operations, and maintenance of traffic signals as well as supporting the analytical foundation to measure success.

Conclusions

Throughout the development of this report, there has been the recognition that an agencies' response to the self assessment should not be, "How do we get an A grade?" Rather, the approach to traffic signal program management should start with the expectations of the motorists to whom the service is being provided. To meet those expectations, agencies are beginning to reorganize, working smarter to focus resources on management and operations, and collaborating regionally to take advantage of distributed expertise and to compete for resources to improve their capabilities more effectively based on the value offered to the community.

The scarcity of reliable resources for both funding and staffing in the current economic environment necessitates that many agencies, especially smaller ones, do what is needed to provide basic functionality. A programmatic approach to traffic signal management and operations establishes realistic operational objectives and defined, documented, and measureable supporting strategies. This better enables agencies to address congestion and fuel consumption as well as lessen the negative impacts to air quality to improve the quality of life within communities. Agencies that perform well on this report card have demonstrated that they employ recognized objectives-based best practices to manage traffic signals in the roadway network. There does appear to be gradual change as shown in the modest improvement in the report card scores. There still seems to be a disconnect between established, stated, measureable objectives and performing signal operations tasks and timing practices. However, well planned traffic signal management, operations, and maintenance practices can save money and provide a high value trade-off compared to other types of infrastructure investment. Success is a strongly correlated combination of effective leadership and a commitment to operations, which in turn has a positive outcome on the street.

For More Information

There are a wide variety of resources available for agencies to improve traffic signal management and operations. Resources are available through government and research organizations, universities, professional associations and their supporting web sites, training, networking, and outreach programs. Visit the 2012 National Traffic Signal Report Card website **http://www.ite.org/reportcard** for more information.

About the National Transportation Operations Coalition

The National Transportation Operations Coalition (NTOC) is an alliance of national associations, practitioners, and private sector groups representing the collective interests of stakeholders at State, local, and regional levels who have a wide range of experience in operations, planning, and public safety. The NTOC website **http://www.ntoctalks.com** and online Community: *NTOC Forums and Traffic Signal Library* **https://ntoctsl.groupsite.com** serve as key resource for institutionalizing management and operations into the transportation industry.

American Association of State Highway and Transportation Officials — AASHTO The Voice of Transportation
American Public Works Association — APWA Your Comprehensive Public Works Resource
U.S. Department of Transportation — Federal Highway Administration
M.S.A. Public Safety 1996
ite Institute of Transportation Engineers
ITS America