

RESOLUTION NO. _____

A RESOLUTION AUTHORIZING THE DEPARTMENT OF TRANSPORTATION TO ENTER INTO A CONTRACT WITH 3M COMPANY TO COMPLY WITH THE SIGN INVENTORY REQUIREMENT, FOR A TOTAL PROJECT COST IN THE AMOUNT OF TWO HUNDRED NINETY-NINE THOUSAND FIVE HUNDRED FORTY-FIVE DOLLARS (\$299,545.00).

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, it is hereby authorizing the Department of Transportation to enter into a contract with 3M Company to comply with the sign inventory requirement, for a total project cost in the amount of \$299,545.00.

ADOPTED: _____, 2013.

/mms

City of Chattanooga



Resolution Request Form

Date Prepared: 10/8/13

Preparer: John W. Van Winkle *JWV*

Department: _____

Brief Description of Purpose for Resolution/Ordinance: _____

Res./Ordinance # (if approved by Council) _____

New federal guidelines now mandate cities and states to meet higher standards as to the size and retroreflectivity requirements

for all traffic control signs on public streets and highways. Also, all governmental jurisdictions will be required to inventory

all traffic signs on their streets to determine whether or not their signs meet these new standards now and in the future.

This contract will allow the City to comply with the sign inventory requirement, which is required to be established by June 13, 2014.

Name of Vendor/Contractor/Grant, etc.	<u>3M Company</u>
Total project cost \$	<u>299,545.00</u>
Total City of Chattanooga Portion \$	<u>299,545.00</u>
City Amount Funded \$	<u>150,000.00</u>
New City Funding Required \$	<u>149,545.00</u>
City's Match Percentage %	<u>100%</u>

New Contract/Project? (Yes or No)	<u>yes</u>
Funds Budgeted? (YES or NO)	<u>yes, first installment</u>
Provide Fund	<u>4016</u>
Provide Cost Center	<u>P20112</u>
Proposed Funding Source if not budgeted	<u>4016-K17209*</u>
Grant Period (if applicable)	<u>N/A</u>

List all other funding sources and amount for each contributor.

*RR CRSSG closure fund

Amount(s)

Grantor(s)

\$ _____
\$ _____
\$ _____

Agency Grant Number _____

CFDA Number if known _____

Other comments: (Include contingency amount, contractor, and other information useful in preparing resolution)

Approved by: _____

Reviewed by: FINANCE OFFICE

DESIGNATED OFFICIAL/ADMINISTRATOR

Please submit completed form to @budget, City Attorney and City Finance Officer

Revised: 1/26/09



City of Chattanooga, Tennessee
Consultant For:
Traffic Sign Reflectivity Study: RFQ: R72037

April 4, 2013



**Solutions for Visibility,
Safety
and Compliance**

COPY

Submitted By:
3M Traffic Safety & Security Division
Roadway Maintenance Services
3M Center, Bldg. 235-3A-09
St. Paul, MN 55144-1000

Submitted To:
City of Chattanooga
Purchasing Department
101 East 11th Street: Suite G13
Chattanooga, TN 37402
Attn: William Tucker

Traffic Sign Reflectivity Study RFQ R72037

City of Chattanooga, Tennessee



April 4, 2013

April 2, 2013

William Tucker

Purchasing Department

101 East 11th Street, Suite G13

Chattanooga, TN 37402



Dear Mr. Tucker,

The Roadway Maintenance Services group 3M Company's Traffic Safety and Security Division is pleased to submit this proposal in response to the City of Chattanooga's Request for Qualifications, Traffic Sign Reflectivity Study.

We propose to implement the 3M™ Sign Management System, our complete "turnkey" solution designed to provide the City with the ability to effectively manage your traffic sign inventory in a manner that yields compliance with the FHWA ruling on minimum sign reflectivity and enables efficient use of budgetary dollars for sign maintenance work. Dozens of government agencies across the country are currently using this system to achieve these very same ends that the City of Chattanooga desires. Our comprehensive solution is comprised of the following elements:

- ◆ Street scene capture with the 3M MultiCap system of twin fast cycling cameras with images linked to a GPS track log,
- ◆ Visual inspection of the photo stream by trained analysts to identify, locate and attribute signs and supports including daytime condition using 3M Framer software.
- ◆ Populating a geodatabase with this complete set of data
- ◆ Conducting a nighttime reflectivity assessment according using the FHWA's Comparison Panel method.
- ◆ Loading the geodatabase onto a secured SQL server in a 3M hosted environment; providing a URL along with access credentials to City personnel with access and functional privileges associated with defined roles
- ◆ Providing a sophisticated data management application accessible via the aforementioned URL built primarily on ERSI ArcServer platform. Hosting the database and management application and maintaining all hardware and software infrastructure to enable ordinary web browser access
- ◆ Make available to the City upon request the entire ESRI format geodatabase to incorporate into your existing GIS system and, if necessary, convert the schema to that required by the City's system.
- ◆ Conducting comprehensive training, and offering telephone support to assure that clients have the ability to reap the benefits of the systematic asset management this system enables.
- ◆ And providing as an **optional and highly recommended** (priced separately for the City's consideration) element a 3M Field Assessment Status Tracker (FAST) with a complete mobile copy of the sign inventory and full featured management functionality optimized for efficient field data capture in quantities required by the client

The core web based management application and inventory geodatabase are built on ESRI ArcGIS platforms with extended SQL database tables. The management application is designed to provide features and tools that are intuitive and highly functional for non-technical

management and administrative staff accustomed to internet maps and spreadsheets enabling them to conduct their work without needing to rely on GIS specialists.

All of our clients are working from the same master application that resides on 3M hosted servers. The robust level of support this affords cannot be overstated. Unlike a series of custom applications requiring divided support, a single master application puts 3M in the position of concentrated, rather than divided, responsibility. Each of our clients benefits from the support we are providing to others.

While we propose to host the City's inventory data, it is always the property of the City. At anytime we can port the master database, which is held in ESRI ArcGIS format, to the City's GIS system and, if necessary, convert to a particular schema required by that system

We consider maintaining the accuracy of an asset inventory database such as the City is requesting to be the real challenge to its ongoing value. Our proposal includes the providing (as optional) our industry leading Field Asset Status Tracker (FAST) tool for enabling field staff to enter data required to keep the database current. In our system the FAST tool is tightly integrated with our web-hosted database. We know that it is in this area that most efforts to maintain an accurate inventory break down, and our entire system is built with easy, efficient maintenance of accuracy as the primary goal. We contend that our FAST tool and the way that it synchronizes information into the master database is the best way to assure database integrity. A FAST tool is almost universally delivered as part of our system and with this approach office administrative and management tasks would utilize our web based management application while field workers use our FAST tool to record maintenance changes to assets. The burden is on 3M to maintain the system functionality. Without the benefit of a 3M FAST tool, the City will be responsible for establishing some other means of gathering data from the field and then relaying that data to office staff to update the inventory via the web based application.

Our people, processes, tools, technology and management methods have been repeatedly deployed in the work of implementing this system for cities, counties and state DOTs, always with success. The Roadway Maintenance Services group consists of expert geographic information systems staff, technicians and analysts trained in the particulars of traffic signs and in FHWA recognized reflectivity assessment methods, and project managers exclusively engaged in delivering roadway safety related projects to departments of transportation and local road agencies. We believe that no single enterprise has collected, processed and delivered more sign inventories in the prescribed platform to governmental agencies than 3M Roadway Maintenance Services. All of this will be provided by a company with the reputation for integrity and innovation: 3M.

By selecting 3M Company's Roadway Maintenance Services business to complete your project, you will have the most experienced team in the specialized field of traffic sign inventory and assessment. As you review our proposal we hope you find the description of our offering fully meeting your needs and persuasively superior to the alternatives.

Sincerely,

Daniel F. Moran
Customer Service Supervisor
3M Company Traffic Safety and Security Division
E-mail: mvssorders@mmm.com

3M Center
Bldg. 235-3A-09
St. Paul, MN 55144-1000
Phone: 800-553-1380 #3

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I. Technical Approach

A. 3M SIGN MANAGEMENT SYSTEM OVERVIEW

3M's Sign Management System provides a simple solution that includes a methodology and the tools that will allow the City of Chattanooga to effectively manage its traffic signs and comply with the FHWA ruling regarding minimum sign reflectivity requirements. The way our tools and processes work together to create the inventory database and then present the means for clients to manage their data are shown schematically below.



Figure 1: Maintenance Cycle

The 3M solution consists of the following phases:

1. **Building Sign Inventory:** Mobile image capture equipment records images of signs and creates a GPS track log. 3M analysts then post-process the file to build the inventory of signs and posts, and assess daytime observed physical condition. The data is stored in a SQL compatible database.
2. **Sign Assessment:** 3M uses a GPS enabled "Netbook" or "tablet" preloaded with software that displays the signs in both map and tabular formats. The unit tracks the location of the operator. Information about the signs is entered using "buttons" displayed on the touch screen. This tool is used for the nighttime assessment. The unit uploads information to the central database.

3. Sign Management: The central database is accessed through a secure website. The user interface allows a variety of navigation, display, and query options to support management of the sign inventory. The data is readily available for preparation of maintenance plans, work orders or budgeting. Collecting Data for Sign Inventory and Condition:

1. ASSET DATA CAPTURE



3M has developed a very efficient asset data capture methodology which we use to build the sign inventory database. The hardware and software tools, along with the operational processes were all developed by 3M and will be used to populate the City of Chattanooga inventory database with all specified attributes and both day and nighttime assessment.

3M will drive the roads of the entire project area, as determined within the project scope defined by the City capturing signs using the 3M “Multi-Cap” System - a vehicle mounted twin camera and simultaneous GPS track log computer system. Our street scene capture system is configured to capture only forward looking images and therefore all roads are driven in both directions. Our system captures pictures at a rate of five (5) per second to allow work to proceed at posted speed limits. The in-vehicle monitoring system allows the operator to continuously review image quality and compare streets driven against a pre-loaded map of streets within the project scope.

2. BUILDING THE INVENTORY

After the data capture phase of the work is completed, 3M will then develop a comprehensive inventory of all traffic signs within the City of Chattanooga’s project scope

Preparing the requisite inventory database consists of several steps, all of which we execute routinely for all of our projects. The photos and GPS track log from the MultiCap system are processed through 3M “Framer” software, an extension written by 3M for ArcGIS. The “Framer” software presents the photo stream along with the street scene vehicle’s spatially mapped location on both map and aerial views.



The 3M Sign Data Analysts are then able to precisely locate each sign support, locking in its GPS coordinates. The “Framer” software also provides a convenient attribute data entry screen to capture all attributes that can be determined from the visual inspection. 3M has completed numerous visual data processing exercises identical to what is required by the City for this project. The speed and accuracy of this work is dependent on the skill of the Analysts. Within our RMS group we have a staff of

experienced Sign Data Analysts who collectively have processed street scene data of hundreds of thousands of signs over thousands of miles of roadway for our clients.

We have a multi-level QA process that assures completeness and accuracy of the work of our Analysts. This involves:

- ◆ Reprocessing a portion of each Analysts daily work output
- ◆ Running error checking routines on the data
- ◆ Checks of the data by a different analyst for any missed signs and roadway names.

Error rates over two (2) percent, although very rare, trigger a complete reprocessing of the questionable segment of work

The combined data from the several Analysts, once it has passed the rigorous QA routine, is subjected to our schema conversion process to put it into the standardized format that we use as the master database for our web-based client’s and to match up with our field tool.

Table One (1) lists the attributes that are specified by the RFQ plus additional standard attributes that are provided by our 3M Sign Management System.

TABLE 1

Sign Inventory Attribute	Field Definition/Information/Data Dictionary
Sign Category	Regulatory, Warning, Guide, School, Recreation, Information, General
Sign Type	Federal or State MUTCD designation or custom designation for specialized signs
Sign Orientation	Direction sign is facing (N, NE, E, SE, S, SW, W, NW)
Legend	Fully captured message of sign types with variable text
Sign Height & Width	Panel height and width estimated from photo and snapped to current jurisdiction standards
Mount Height	Height from road grade to lower edge of sign estimated from photo and snapped to current jurisdiction standards
Position on Post	Sign’s relative position, in column and row notation, among all signs mounted on the same structure.
Sign Photo	Digital image of each sign
Post Type	U-channel, Round, Square, Light Pole, Signal Mast, etc
Post Material	Steel, Wood, Concrete, etc
Latitude & Longitude	Global Positioning System (GPS) location (+/- 3 meter and correct in sequential order and side of road)
Position	Left, Right, Overhead, Center
Street Name	Full official street name derived from centerline GIS data set provided by the Agency
Sign & Post ID Number	Unique identifier for each inventoried asset. Each Sign record also has the ID of the Post on which it is mounted
Sign & Post Condition	Good, Fair, Critical rating and classification of defect types assessed through review of daytime digital images
Compliance with FHWA / MUTCD retroreflectivity requirements	Each sign will be assessed for nighttime reflectivity and assigned a condition rating using FHWA Comparison Panel Method.

***NOTE:** Sign dimensions and sign height information is derived from City signing standards rather than the less precise digital images. If a specific sign deviates from this standard the data can be edited with the FAST tool.

Our data structure includes 10 custom fields that can be activated and labeled to meet the City’s needs. Further, our schema includes a related table for Maintenance activity (as well as



Assessment and photo) recording. Multiple records can be captured per asset so that over time a complete and well-documented maintenance history is maintained.

3. SIGN CONDITION ASSESSMENT



After the database has been populated with City of Chattanooga's data we will conduct the nighttime reflectivity assessment. 3M's system is designed to support a Visual Nighttime Inspection of signs to identify any deficiencies which impact visibility or legibility. 3M will use the FHWA's Comparison Panel Method to conduct the nighttime assessment. This inspection procedure is one of the prescribed assessment methods

identified in the document "Maintaining Traffic Sign Retro reflectivity" (2007 Edition) available from the Federal Highway Administration.

This assessment is conducted with the aid of a Field Asset Status Tracker (FAST) tool. The FAST tool presents signs to the assessment technician automatically as they are approached by the vehicle for verifying its identity and logging any apparent deficiencies. Because the master database already exists at this point in the project, an ordinary "synch" operation efficiently adds the night condition attribution to the database.

3M will perform the following steps:

- ◆ Conduct nighttime visual inspections of all regulatory, warning and guide signs within the project scope and on agency roads with route/zone priority determined by the City of Chattanooga personnel
- ◆ The date and time of inspections, and inspector's name, weather conditions, route, vehicle model and year of manufacture is stored for future reference
- ◆ Using the 3M™ FAST tool during the nighttime assessment, 3M trained technicians will electronically provide a sign conditioning rating, for reflectivity and legibility, in accordance with the FHWA approved management methods.
- ◆ The rating criteria to be used:
 - CRITICAL – sign need immediate replacement
 - FAIR – sign that may need replacement within one (1)to five (5) years
 - GOOD – sign that may need replacement within 5 or more years
- ◆ Any signs rated "critical" should be reviewed by City maintenance personnel who may schedule replacement or repair as needed to restore performance to the desired level.



Sign Rated as Critical Using Comparison Panel Method

An essential element of conducting the assessment according to FHWA methods is well trained assessment technicians. Assessment technicians are qualified through our certification program that incorporates dark room training and field testing. Dark room training takes advantage of our indoor reflectivity viewing tunnel at our R&D laboratory in St. Paul, MN. Here, in conditions of controlled illumination and viewing geometry, trainees are taught to associate a visual response to different levels of reflectivity. Then trainees are tested in the outdoor environment at our Transportation Safety Center in Cottage Grove. This facility is a world class closed-track full-scale roadway for product evaluation, staff training and visibility research. It is used not only by 3M staff, but also is made available to researchers in academia working on roadway visibility projects. The necessary Comparison Panel will be prepared by 3M at our R&D facility in St. Paul, MN. Here we have the capability to modify the surface of example reflective sheeting signs to attain the desired, reduced levels of reflectivity appropriate to the standard. Our Quality Assurance Photometry Technician working in our on-site photometric range will certify the reflectivity levels. Few organizations have the facilities and degree of technical competence required to both prepare the comparison panels and conduct the appropriate technical training.



B. USING AND MAINTAINING THE INVENTORY DATA

1. 3M-HOSTED, WEB-BASED SIGN INVENTORY DATABASE

The hub of the 3M Sign Management System is our web hosted database and management application. Because it is web hosted, it is accessible using an ordinary web browser (IE 7+, Firefox on Windows & Mac, Safari on OSX, and Google Chrome on Windows & Mac) and is available 24/7. The web servers are housed in a secure environment with regular backups. Our geodatabase resides on a GIS server in ArcGIS Server 10 Enterprise and inventory data is stored in SQL Server 2008 with all features stored in the point feature class. This geodatabase is available to be delivered on demand to the City in ArcGIS 10 format for any purposes you may have.

Employing a 3M hosted system eliminates City of Chattanooga's need to purchase new hardware or costly software. In addition, maintenance of purchased hardware and software upgrades can be expensive. Since 3M provides hardware maintenance upgrades, at no additional cost, to the web-based sign inventory database and management application, this ultimately minimizes any additional City of Chattanooga IT resources needed to sustain the system. There is no "per user" license fee for web access to the management application and sign database.

The system is secured through password protection of users being assigned to different roles and therefore having differing authorized functional access. City users assigned the "administrator" role have complete control of access credentials, user ids and password and assigned roles for all other users.

With the 3M world-class weathering centers around the globe, we can provide predictive modeling of when signs need to be replaced. The use of a Sign Life Predictive Model, such as the one in the 3M Sign Management System, allows the City to reliably predict when a sign may

need to be replaced. There is no need to calculate the estimated remaining sign life, the system will do this automatically when the required information is entered into the system. This will be extremely useful for budgeting purposes not just for the next fiscal year but for 5, 10 or 15 years into the future. As signs are replaced over time, sheeting type and installation date is added to the data records. This information is key to predicting the estimated useful life of a sign. Eventually, once all data records contain sheeting type and installation date, City-wide nighttime assessments will no longer be necessary as the system will provide the year the sign may need replacement. Reports or queries can be run to identify the signs that need to be reviewed based on predicted end-of-life year and the City can assess these signs as to their condition and determine if replacements are needed or other action should be taken.

The figure below shows screenshots of the user interface with simple command functions, allowing maintenance staff to search, sort and analyze the inventory of signs. The simple, straight-forward design allows users to be proficient with minimal training.

2. 3M- HOSTED, WEB-BASED DATABASE MANAGEMENT APPLICATION

The web hosted management application presents a hybridized set of functions derived from ArcGIS applications and commercial internet map sites plus specialized modules and tools. The management application is designed specifically to enable managers and administrators who are not GIS experts to complete all data management tasks while retaining all relevant information in the GIS database. These functions are listed in Table Two (2):

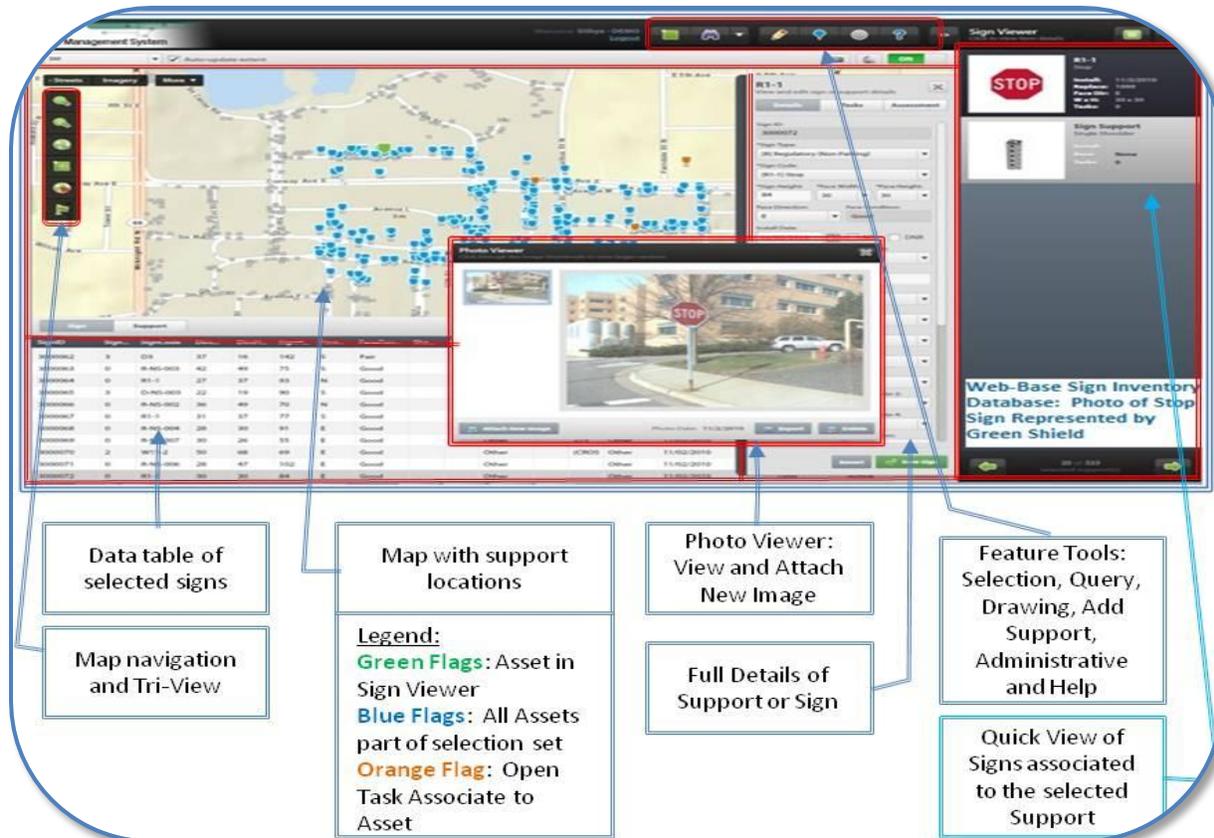


TABLE 2

General GIS Tools & Map Functions	Specialized Sign Asset Mgmt Tools & Functions
Sign locations presented as point features on map	Prepare, print and record work orders & their completion
Navigation by Pan and Zoom	Prepare and print sign build and installation lists for bid documents
High resolution base map	Present attributes of selected features in graphical slide out
Select features by map click and drag	Query builder - easily learned by non-GIS workers
Select features by query	Construct and save commonly used queries
Present attribute data table for selected features	Selected features presented diagrammatically with primary attribute
Query on any combination of attributes	Diagrammatic asset viewer scrollable through entire selected set
Selected feature sets displayed on map	One click drill on asset diagram to full attribute set in editable form
Selected feature sets displayed in data table	Link to photo(s) of each sign
Data table export to MSEXcel	Selected feature sets provided in reports (.pdf, .csv, .xls)
Display other client provided GIS layers	Attribute tables configurable to clients preferences
	Special symbology for assets with open work orders
	Sign and support maintenance assignment and tracking for individual assets
	Sign life predictive modeling
	One click synchronous map view, birds-eye view & street view from public sources
	Upload photographs associated with any asset
	Map markup sketching, save and print.
	Additional attribute fields optionally included in application forms

The 3M Sign Management System is designed to include the 3M Field Asset Status Tracker (FAST) tool for field data entry to maintain the accuracy of the inventory database. This unit is described in detail below as an optional element offering the most effective system.

Without this device, the City would need to employ its own field data capture process and then use office personnel working through the web application to update features and attributes. The web application is fully capable of this task. However, this approach requires additional data handling between the field and the office which can be less time efficient and increases the opportunity for error. Also, some tasks such as installing a new sign requires latitude and longitude information that is automatically captured by the FAST tool, but would require some other field instrument be used by sign crews when not using a FAST tool. Because of the significant advantages of using a 3M FAST tool for maintaining database accuracy we are including this as an optional item in our pricing proposal.

3. MOBILE DATA COLLECTION AND EDITING-3M™ FIELD ASSESSMENT STATUS TRACKER (FAST) TOOL



3M FAST Tool
Convertible Laptop Tablet

3M's experience working with agencies for over 50 years, has shown us that most sign inventory systems fail because the inventories are not easily maintained and data cannot be updated as work is being performed in the field. This is no longer the case with the 3M™ Sign Management Systems' Field Asset Status Tracker (FAST tool). The FAST tool allows the agency to maintain their inventory by recording field work activity as it is completed.

The 3M FAST tool is a full feature GIS application running on a "tablet"/"netbook" computer that uses an ERSI Mobile cache of the master database and related SQL database tables enabling the user to directly input information relevant to virtually any field task. By leveraging the strengths of the Esri ArcServer and Mobile platforms, the user has uninterrupted access to locally stored base maps, asset photos and the complete database of both geographic data as well as related tables for historic records and support for multiple open tasks per asset.

This device is unique in the industry because it provides rich data for decision making and streamlined tools for efficient work tracking. The system design helps the field crew ensure correct and complete upkeep of the database of sign assets. The FAST tool is spatially aware through GPS updates on a one (1) second interval. This puts the local asset data at the fingertips of the field user. Tasks that are readily completed on the FAST tool include (but are not limited to) the following:



Selected Sign Record View

- ◆ Finding open work orders
- ◆ Mapping locations of all signs with work orders
- ◆ Querying on virtually any attribute and map results
- ◆ Updating the apparent condition of signs or supports
- ◆ Creating work orders
- ◆ Removing, replacing and retiring a sign or support.
- ◆ Relocating supports
- ◆ Adding attribute values such as sheeting type
- ◆ Adding new sign photos.
- ◆ Auto date/time stamp and user for completed tasks
- ◆ Tracklog of work path of users

Over eighty (80) percent of the FAST Tool user interface tools and features are shared in common with the web application so skills learned in one environment are readily transferable to the other. The FAST tool can conveniently display assets simultaneously as a map, street scene and aerial view or our tri-view feature.

Through the process of "synchronizing", the master web based database is updated with information from the field and simultaneously the field device is updated with any new information on the master database, including information "synched-in" from



other FAST tools in the field. The synch function can be either continuous through available wireless channels or locally by docking the device at the end of a work shift.

The hardware for the FAST tool has the following elements.

- ◆ Intel i5 64-bit 1.7 GHz processor
- ◆ 4 GB 1600 MHz DDR3
- ◆ Windows 8 Pro OS
- ◆ 11.6" LED Full HD, Multi-touch (1920 x 1080)
- ◆ 128GB Solid State Drive
- ◆ WiFi, Bluetooth and 10/100 LAN connectivity
- ◆ Built-in 5.0 megapixel rear facing camera
- ◆ Less than 3 pounds in weight
- ◆ LTE/4G/3G with client's dongle and data plan.



3M FAST Tool: Tablet

Nearly all of the functionality available on the web site is also available on the FAST tool. Exceptions are canned reports designed for printing and administrative functions.

4. CONTINUOUS HOSTING, SUPPORT AND FAST SOFTWARE LICENSE

As part of your contract for delivery of a 3M Sign Management System, the first three (3) full years of use of the web-based management application and associated sign inventory master database is included in the requested three year payment program given in our price proposal. After that period of time continued hosting of the City's inventory and support of the web-based management application is provided on an annual subscription basis. The annual subscription for the City after the initial three (3) year contract will be at the current market rate and allows the agency to continue to have an unlimited number of users for the web based application and associated inventory database, including renewal of one FAST software license and support of FAST tool users.

The annual subscription provides for 3M to retain comprehensive responsibility for the functionality of the system. That means 3M provides the internet hosting infrastructure (server hardware and software) for both the inventory database and management application including the routine updates and upgrades to the foundational server operating system, SQL database and ArcGIS applications. This subscription entitles you to the ongoing program of improvements to our system. 3M continues to develop and deploy enhancements to the web application and database. During 2012 we migrated to version 3.0 of our web application with all clients of our web service benefiting from the significant improvement in user interface and new management tools. Already in 2013 we have migrated to version 4.0 with a number of smaller scale enhancements including greater user form, tabular view, query and field alias configurability. Our subscription is by far the lowest cost means of achieving this continuous level of service. This is possible because all clients are operating on the same base application but with their own databases. The economies of scale afforded by supporting many clients with the same application concentrate our development and deployment effort rather than splintering them to support custom software for each user.

The data resident on the 3M hosted server is always owned by the City. The City can request this data at any time and it will be delivered to the City as an ArcGIS geodatabase and will be usable in conjunction with the several Esri ArcGIS software applications.

With our annual subscription, 3M also maintains the integration between the web-based database and the FAST tool software at no additional charge as software is developed and deployed. It is essential for our agency customers to understand the benefits of seamless and functional integration between the FAST tool and the web-based sign inventory database as it is a unique feature that truly sets our system apart from others in the industry. The FAST tool is the key component which allows agencies to keep the sign inventory data current in a simple and functional manner, thereby preserving the initial investment of the agency in a Sign Management program. The incremental additional annual fee for maintenance of additional FAST tools beyond the one (1) unit included with our annual subscription is \$600 per unit.

A. ADDITIONAL SERVICES: SIGN REPLACEMENT PLAN

As part of our comprehensive “turnkey solution”, 3M provides a sign replacement service in conjunction with the inventory assessment and database. We understand that sign management must be a systematic process. It must combine a comprehensive inventory with analysis tools so that effective investment strategies can be developed. A mature sign management system allows an organization to be proactive in how assets are maintained.

Effective traffic sign management requires a good understanding of sign performance over time, and 3M is unequalled in this respect. To ensure the City’s budgeting, scheduling and performance management activities are as efficient as possible; 3M would use this knowledge to be proactive in our sign replacement activities. Developing a consistent approach to sign maintenance and replacement is an important goal for any asset management system.

Once the Sign Inventory Assessment and Database is completed, and the assessment data has been evaluated and signs prioritized based on their condition, the project manager will prepare a written report identifying all signs in need of maintenance. This report will include identification of defects and sign attributes in sufficient detail to generate work orders. The team will review the plan with the City of Chattanooga and upon approval, will initiate maintenance activities, working continuously until all items included in the work plan are completed.

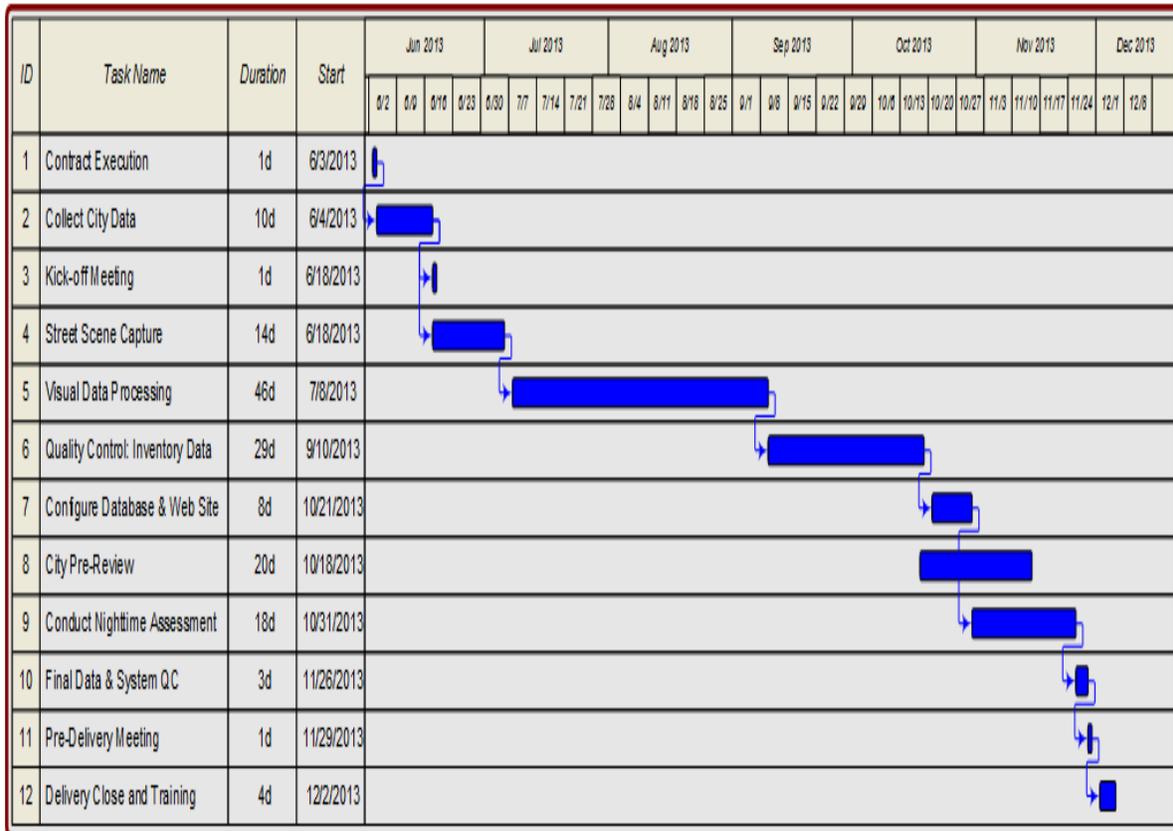
Our services include design of the signs, fabrication and installation. 3M will provide a construction management web portal for use by the City for the approval of drawings, fabrication and installation of signs, and to manage the traffic sign replacement pipeline. The web portal will allow the City to submit work orders, approve sign lists and drawings, monitor sign fabrication and installation and download the certification documents

If the City of Chattanooga is interested in having 3M replace any non-performing signs, we will gladly provide that service. The replaced signs would be paid for at negotiated contract unit prices. The volume of work will be based on the City’s available budget for the maintenance and replacement of the signs when the work orders are ready to be released.

II. Work Plan

A. DETAILED PROJECT SCHEDULE

CITY OF CHATTANOOGA, TN PROJECT PLAN



B. PROJECT IMPLEMENTATION

1. OVERALL APPROACH

Through our experience on numerous past projects, we have developed a well practiced method of delivering our system as a “turnkey solution”. Each project has an assigned Project Manager who is the central point of contact between the client and 3M as the consultant/contractor. It is the project manager’s responsibility to orchestrate the efforts of the 3M team to execute the work in a timely and cost efficient manner. All administrative, financial, legal and task related aspects of the project are within the project manager’s prevue. We support our project manager with functional experts in these areas, all within the Roadway Maintenance Services unit, enabling them to fulfill their comprehensive responsibility .

The Notice to Proceed from the City will formally initiate the project timeline. The City has an established timeline for this project requiring completion by December 31, 2013. The project plan for these projects is not complex and is further simplified for the manager by the fact that we self perform all tasks. We have calculated that we can complete the project within 124



working days and there are several opportunities to take time out of the schedule or compensate for unanticipated delays. They include:

- ◆ Weekend work for staff doing field work in the City
- ◆ Dedicating additional workers for Visual Data Process (planning for 5 with 2 more available)
- ◆ Working tasks in parallel (2 to 4 days of concurrent work for most tasks possible)
- ◆ Coordinately tightly with the city so their tasks stay on schedule.

2. STEPWISE TASKS AND MILESTONES

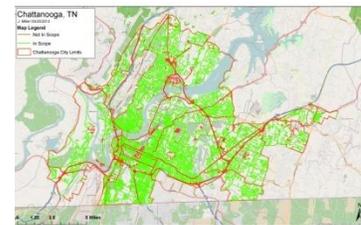
1. Contract Execution

This milestone is coordinated by our Project Manager working with the City and our contracts attorney. It also triggers our data request to the city for the following :

- ◆ GIS roadway centerline data
- ◆ Aerial photography of the city (high resolution)
- ◆ City signing standards and sign nomenclature.

2. Collect City Data (10 days)

Our efforts on the project will begin when the 3M requested information is received. The 3M GIS staff will identify the roads they understand to be in scope and provide a map to the City for review. The key task in project planning is the identification of the roads that are in and out of scope. If the roads are not correctly identified and agreed upon by 3M and the City personnel, the result could be increased costs and project delays due to missing required routes. We have found that using sources other than the client for this foundational information risks errors.



City of Chattanooga Map

3. Kick-Off Meeting (1 day)

The kick-off meeting presentation will review the project scope, objectives, deliverables and project plan. In addition to the identifying and agreeing on the roads that are in and out of scope, the 3M Project team and Client will also review the rating criteria to be used for determining the daytime assessment rating. We will provide our standard defect types and their ratings. The City will have the opportunity to accept or modify these standards. If specific



elements or communication to the public or public officials is necessary at the outset of the project they are included in this task.

4. Street Scene Capture (14 days)

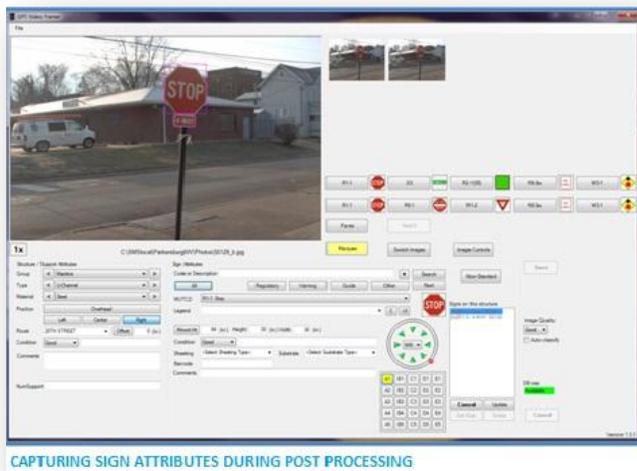
The validated map of in-scope routes is a key input to this task. The timing of this work is determined by the 3M Project Manager in coordination with the City and can often proceed immediately following the kick-off meeting. Two teams of technician and driver will be dispatched to drive all City routes within the scope of the project to obtain unobstructed images of all traffic signs. During this task the 3M technician utilizes

the Multi-Cap tool with the GPS track-log mode on, to record where they have driven and

compare that to the approved map of in-scope roads. If the 3M field team encounters a road(s) not on the map or gates or construction preventing access to a road deemed in-scope, the lead 3M technician will escalate this to the 3M Project Manager for resolution.

5. Visual Data Processing (46 days)

After the field data capture phase of the work is completed, 3M will then prepare a comprehensive inventory database of all traffic signs within the City's project scope. Daytime condition assessment is completed at this time. This work is done by 3M Sign Data Analysts using our 3M Framer software at our St. Paul location. This software is designed to populate the inventory database with all required attributes based on mouse and keyboard inputs from the analysts viewing the photo stream and synchronous GPS track log and aerial photography.



This is the most labor intensive task in the project and consumes the most calendar time. We have a workforce of seven (7) trained for this task. It requires a keen eye, and broad knowledge of traffic signs and the attributes associated with them. The staff we have is predominantly GIS specialists with a minimum of one year experience on multiple client sign inventories and college level GIS education. They have grown up with the system from the time of our early trial and demonstration projects through all of our contracts to date. The newest workers we have were selected for their attention to detail and

past experience in intensive visual tasks in a computer workstation environment. New workers first work in an apprentice role, then solo, but with double QC review and once their accuracy meets the established standards, they become a regular member of the team. We expect to allocate four visual processing technicians to this task but can flex others in if necessary to compress time,

6. Quality Control: Inventory Data (29 days)

Once all the sign and post inventory attributes have been recorded, the database is subjected to our Quality Assurance processes. Our final QA process targets the three elements of sign inventory quality:

- ◆ Location accuracy,
- ◆ Completeness, and
- ◆ Proper classification/attribution.

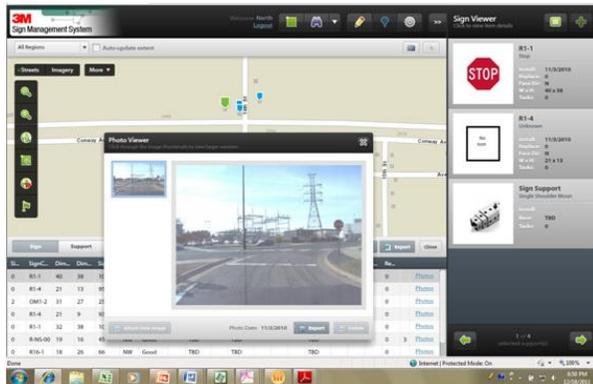
Inventory records are first fully reviewed in the mapping context to validate support location against high resolution aerial photos, that all in-scope roads were inventoried, and that the route (street name) attribute is aligned with agency's centerline data.

A twenty percent (20%) sample of street imagery is then reviewed to detect any missed signs -- a completeness error rate exceeding two (2%) percent would trigger a full street imagery review. In our visual review tool all sign records are grouped by similar sign type for efficient inspection and compared to the captured photo of that sign to confirm correct attribution.

We then pass the inventory database through a set of automated GIS tools and scripts designed to identify errors and validate completeness and correctness of the data. These include tools to identify potential duplicate entries, classification errors, and unpopulated required fields, and un-assessed assets, assets without photos and supports without signs.

This rigorous QA process has a proven track record of producing high accuracy sign inventories. Depending on the project manager's plan and other projects underway QA can proceed in parallel but with some lag behind Visual Data Processing or can be entirely sequential.

7. Configure Database and Website (8 days)



A specific set of data translation operations are executed to deploy the data output from QA to the web environment. The 3M hosted server is configured for the new client including establishing a SQL Server database, ArcGIS web services, and client-specific configuration files and valid values lists. Preliminary sign inventory records and photos are loaded onto the server. Work will continue on this data but the core system functionality will be in place. This dataset is also loaded to a FAST tool for later use in the Nighttime Condition

Assessment. Also the new client's access credentials (usernames, passwords, and functional levels) are established within the application management module. We have two staff within the Data Production Group with the requisite skills for this work. Our Software developer performs the deep back-up role in this function.

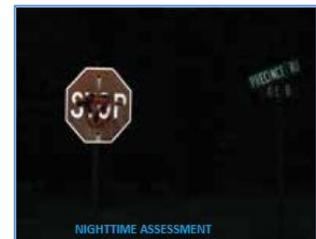
8. City Pre Review (20 days)

Once preliminary data has been loaded it is available for the City to pre-review through the Web application. A read only account will be provided for this purpose which will allow the City to inspect the data and provide feedback to the project manager. Also at this time a list of sign types found in the City's jurisdiction that cannot be classified with standard MUTCD codes will be provided to the Client for their review. The City and 3M will coordinate on appropriate codes for these signs if it is determined that they should be included in the inventory.

9. Conduct Nighttime Assessment (18 days)

A FAST Tool will be prepared for the Nighttime Assessment. This field tool, which may become part of the deliverables for the City, at your option, is also used for reflectivity condition assessment by our staff because it is efficient and flexible

Two teams comprised of a trained technician and driver will drive all of the routes with inventoried assets and assess the reflectivity condition of the signs using the FHWA comparison panel method. We have a pool of 5 technicians trained to perform this function. They have each been qualified through our certification program that incorporates dark room and field training at 3M's Transportation Safety Center closed track roadway in Cottage Grove, Minnesota. The reference comparison panels are prepared in our Quality Assurance Photometric Range to assure reflectivity levels consistent with the FHWA ruling. The FAST tool allows efficient logging of signs viewed as deficient. This data is synched into the master database to populate the nighttime condition.



During this second trip to the city to gather data, data anomalies are rectified. This includes new photos to replace deficient sign images. High quality images are necessary for complete asset attribution. The FAST tool enables a degree of secondary quality control as the crew assesses each and every sign on the defined routes; signs present but missing from the inventory or signs in the inventory that are missing in the field can be tagged and addressed with the Project Manager.

10. Final Data and System Quality Check (3 days)

An ordinary FAST tool to master database synchronization is all that is required to add the nighttime condition information to the system. However, a series of final checks on the data and system function are conducted to validate that the data is pristine and all functions of the system perform as expected. These checks include:

- ◆ Complete the FAST checklist.
 - All required programs installed and operational.
 - GPS Drivers are installed and GPS connectivity is verified to be working properly
- ◆ Field workflow scenario testing
 - Cross check data on the website and that the FAST Tool are synched up
 - Run test queries and evaluate for matching results
 - Verify secondary QC items are updated in the database
- ◆ Prepare itemized hardware, software and accessories delivery list.
- ◆ Confirm City's final user accounts with proper authorization levels and credentials are in place.

11. Pre-Delivery Meeting (1 day)

A pre-delivery meeting will be held a few days prior to the actual project close. At this pre-close meeting, the 3M Team and the city personnel will review the completed project, address any "punch-list" items and resolve sign coding questions discussed at the time of the city pre-review. This meeting is typically conducted as a web conference.

12. Delivery, Close and Training (4 days)

The goal here is to formalize the acceptance of the data and the functionality of the system according to the City's requirements. We will submit our final report with the results of our findings regarding signs identified as having defects and the types of defects. A presentation to a larger audience can be incorporated if necessary. At this time we will present the Certificate of Acceptance and Software License (if the FAST tool option is taken) for signature by an authorized city representative. Training of the City's staff will be conducted after the project close meeting.

C. TRAINING AND TECHNICAL SUPPORT

1. TRAINING ON THE 3M SIGN MANAGEMENT SYSTEM

The 3M Sign Management System is designed to enable clients to exercise the management responsibilities and maintain complete records of the maintenance without purchasing expensive software, or managing elaborate IT infrastructure or becoming GIS specialists. The web interface to full management functionality requires only an internet browser. The FAST tool

is designed to function very much like the web interface and is intuitive. Experience on one platform readily transfers to the other.

3M provides in-person training for office and field staff on the functionality of both the web site and the FAST Tool by our Technical Trainer. Normal training sessions usually are scheduled for two (2) days following the final delivery meeting.

Each training subject will include both direct instruction, demonstration, participant exercises and a quiz. All components of the training will be provided electronically as well as in printed form. The tasks will be presented as stepwise instructions both in text and graphically on a laminated card to take to the field as a reminder. An example is in the Other section.

Phone calls to our support line are a priority and routed to our trainer, with back-up provided. Our experience to date is that most calls are “how-to?” in nature rather the system bugs and data errors and hence his training experience is directly applicable.

2. 3M SIGN MANAGEMENT SYSTEM MAINTENANCE AND TECHNICAL SUPPORT

3M takes the responsibility of maintaining the IT infrastructure, migrating background software as new versions of SQL Server, FAST Tool and web application enhancements, server operating system and ESRI platform are brought to the market. We also provide daily phone support to users to aide them as they work through increasing layers of functionality of the system or encounter functional faults or potential data incongruence's. This support is provided at no additional charge for the three (3) year period commencing at the conclusion of the project. Thereafter this support requires an annual subscription.

The support program will include the following:

- ◆ **Telephone Support**
 - Accessible via our 800 number
 - Direct person-to-person contact
 - Up to 8 hours of contact time annually per FAST license
 - 32 hours total considering four (4) FAST tools provided
 - Available during business hours, 5 days per week (8am – 5pm Eastern)
- ◆ **Depot Program**
 - ◆ Ship FAST computer to 3M
 - ◆ Support hours booked only on time actually working on support issue
 - ◆ Return shipment prepaid by 3M.

Our support includes migration to new software releases for both the FAST tool and the web data management application at no extra charge.

The FAST netbook is provided with a comprehensive warranty for one (1) year. Our support plan does not include hardware support and if any hardware items need repair or replacement after the one (1) year warranty period the cost of this repair is the City's to bear. Any resulting software reinstallation or reconfiguration would be provided under terms of the support plan.

Exempt from this warranty and support program is repair or replacement of FAST hardware due to misuse, abuse or neglect, removing viruses or malware and correcting resulting data corruption (The FAST tools must not be used for general internet searching or loading files and applications not part of the original installation as this can compromise the tools' functionality.

III. QUALIFICATIONS AND CAPACITY

A. ROADWAY MAINTENANCE SERVICES (RMS) PROJECT EXPERIENCE

3M™ Roadway Maintenance Services has implemented more than 50 sign management systems worldwide. For each of these projects, 3M provided data collection, daytime and nighttime assessments and an asset management system for signs and other “point referenced” assets as required by our customers. 3M RMS provides the most complete sign management system in the marketplace today offering all of the components of a data collection and maintenance system that is easy to use and can maintain a comprehensive and complete sign inventory database with minimum up-front cost and personnel support. Our goal in working with each agency is to provide them with the tools to be self-sufficient.

All of our projects have been completed on time and within budget. Our project managers, supervisors and data analysts and technicians have had years of experience in their fields. They have all evolved and developed within the 3M Roadway Maintenance Service Group and Sign Management System since their inception in 2005 and 2009 respectively. 3M has a culture of innovation and listening to our customers and trying to solve their pain points. This is why the RMS and SMS services were started, because we wanted to provide our customers with practical and ingenious solutions that help customers succeed. In 2012, 3M performed a System upgrade to 3.0 software version for all of our current contracted clients. In 2013 we will be upgrading all of our clients to version 4.0 software. The upgrades are conducted at no additional cost to our clients.

An abstract for some of these projects are provided below. A table with additional references is provided in our Reference Section.

1. PROJECT NAME: CITY OF COOKEVILLE, TN – SIGN INVENTORY AND MANAGEMENT PROGRAM (2011-2012)

a) Scope of Work

3M conducted the inventory and assessment of all traffic signs located within the City of Cookeville’s right-of-way. All signs, approximately 6,699, located within the City’s estimated 250 centerline miles of roadway right-of-way were inventoried.

- ◆ A nighttime assessment was performed using the FHWA Comparison Panel Method for conformance to the Manual of Uniform Traffic Control Devices (MUTCD) and FHWA minimum reflectivity requirements.
- ◆ 3M developed a web-based database to document and track sign inventory and maintenance. This database is compatible with ESRI ArcView GIS for use by the City.

The system was developed with ease of use and efficiency as the central design philosophy, while supporting all key features identified by the City including:

- ◆ Inventory, inspect and document the condition of regulatory, warning and street name signs within the City’s jurisdiction, including collecting the attributes as defined in the Scope of Work (including condition assessment of steel sign posts, aluminum sign panels with reflectivity sheeting and associated appurtenances and hardware as visible on the video-log),
- ◆ Development of a web-based sign management database to document inventory

- and inspection data, and to track the sign maintenance requirements and schedules,
- ◆ Provision of one (1) FAST tool, a GPS and GIS enabled field assessment tool, to capture and update sign data in the field and,
- ◆ Provision of a comprehensive sign inventory database in electronic file format on a standard CD compatible with the Department sign inventory system parameters.

Client's Name	City of Cookeville
Address	Public Works and Engineering Office, 45 East Broad Street Cookeville, TN 38501
Telephone Number	(931) 520-5249
Contact Person	Greg Brown – Director

2. PROJECT NAME: CITY OF ELIZABETHTON, TN – TRAFFIC SIGN INVENTORY AND DATABASE CREATION (2011)

a) Scope of Work

3M conducted an inventory and inspection of all traffic signs located within the City of Elizabethton's right-of-way. All signs, approximately 4,095, allocated within the City's estimated 105 centerline miles of roadway right-of-way, were inventoried.

- ◆ 3M developed a web-based database, which is easily upgradeable by 3M, to document and track sign inventory and maintenance. This database is compatible with ESRI ArcView GIS for use by the City.

The system was developed with ease of use and efficiency as the central design philosophy, while supporting all key features identified by the City which included:

- ◆ The turnkey implementation included all data collection and processing and daytime assessment,
- ◆ Inventorying and documenting the condition/attributes of traffic signs located on the roadways within the City of Elizabethton,
- ◆ Development of a web-based upgradable electronic sign management database to document inventory and inspection data, and track maintenance requirements and schedules,
- ◆ The ability to download the web-based data into a format consistent with Microsoft Excel or City defined format, and
- ◆ A FAST tool for recording maintenance activities while in the field.

Client's Name	City of Elizabethton
Address	Department of Street and Sanitation, 729 South Sycamore Street, Elizabethton, TN 37543
Telephone Number	(423) 547-6306
Contact Person	Kelli Tolley

3. PROJECT NAME: CITY OF GLENDALE, CA - STREET NAME SIGNS CITYWIDE REPLACEMENT AND INVENTORY PROGRAM (2010-PRESENT)

a) Scope of Work

In June 2010, 3M entered into an 8-year contract with the City of Glendale to build and house their traffic sign inventory (28,100 signs) and fabricate and install new street name signs (5,101) per the 2009 MUTCD standards.

Phase I – Inventory Program was completed in December 2010.

- ♦ *Mobile Data Capture* - 3M drove the city-maintained roads (150 centerline miles) capturing attributes for all the traffic signs within the City's jurisdiction. This information was stored in a video log.
- ♦ *Post-Processing* – 3M processed the video log and build individual records for all 28,100 signs located within the City.
- ♦ *Web-based database* – 3M developed the web-based database for the City and uploaded all the data records into the system. The database has 24/7 access for City authorized users and is used for planning and storing maintenance work.
- ♦ *Nighttime Assessment* – 3M conducted a nighttime assessment to rate each sign as to whether it met the FHWA minimum requirements using the Comparison Panel Method. The 3M™ FAST tool was use to record this data. The information from the FAST tool, along with any photos, was then uploaded to the Web-base database using the 3M Transfer Tool.
- ♦ *Training* – 3M provided on-site training for the web-based database and FAST tool

Phase II – Street Name Sign Fabrication and Installation – began February 2011. To date 3M has fabricated and installed over 5,000 signs.

4. PROJECT TITLE: TOWNSHIP OF SMITHTOWN NY – STREET SIGN INVENTORY AND INSPECTION PROGRAM

In July 2011, 3M Company entered into a contract with the Township of Smithtown to provide a “turnkey” sign management system. The project was completed and deliverables received by the Township in November, 2011. The services features as part of the sign management system project included the following:

- ♦ Data collection for over 11,500 traffic signs
- ♦ Processing the data into individual sign and post records
- ♦ Conducting a nighttime assessment using the FHWA approved Comparison Panel Method
- ♦ Developing a web-based database to house the Township's data and as function as a management tool for future work and budgeting
- ♦ Providing three (3) field tools, FAST Tools, for the Township's crews to use to record their daily maintenance activities in the field and then uploading the completed tasks to the web-based database
- ♦ Training on the web-based database and FAST Tools
- ♦ Annual hosting, maintenance and support for the web-based database and FAST Tools

- ◆ Unlimited users and software upgrades

5. PROJECT NAME: CITY OF URBANA, IL – TRAFFIC SIGN MANAGEMENT SYSTEM

In March 2011, 3M entered into a contract with the City of Urbana for the development of a Sign Management System. The project was completed in September 2011. The project was for a “turnkey” sign management system that could be used by the City for compliance with the FHWA minimums but also for recording on-going maintenance of the City’s traffic signs. In addition to traffic signs, 3M also inventoried all the City’s street lights and traffic signals, and included those in the web-based database.

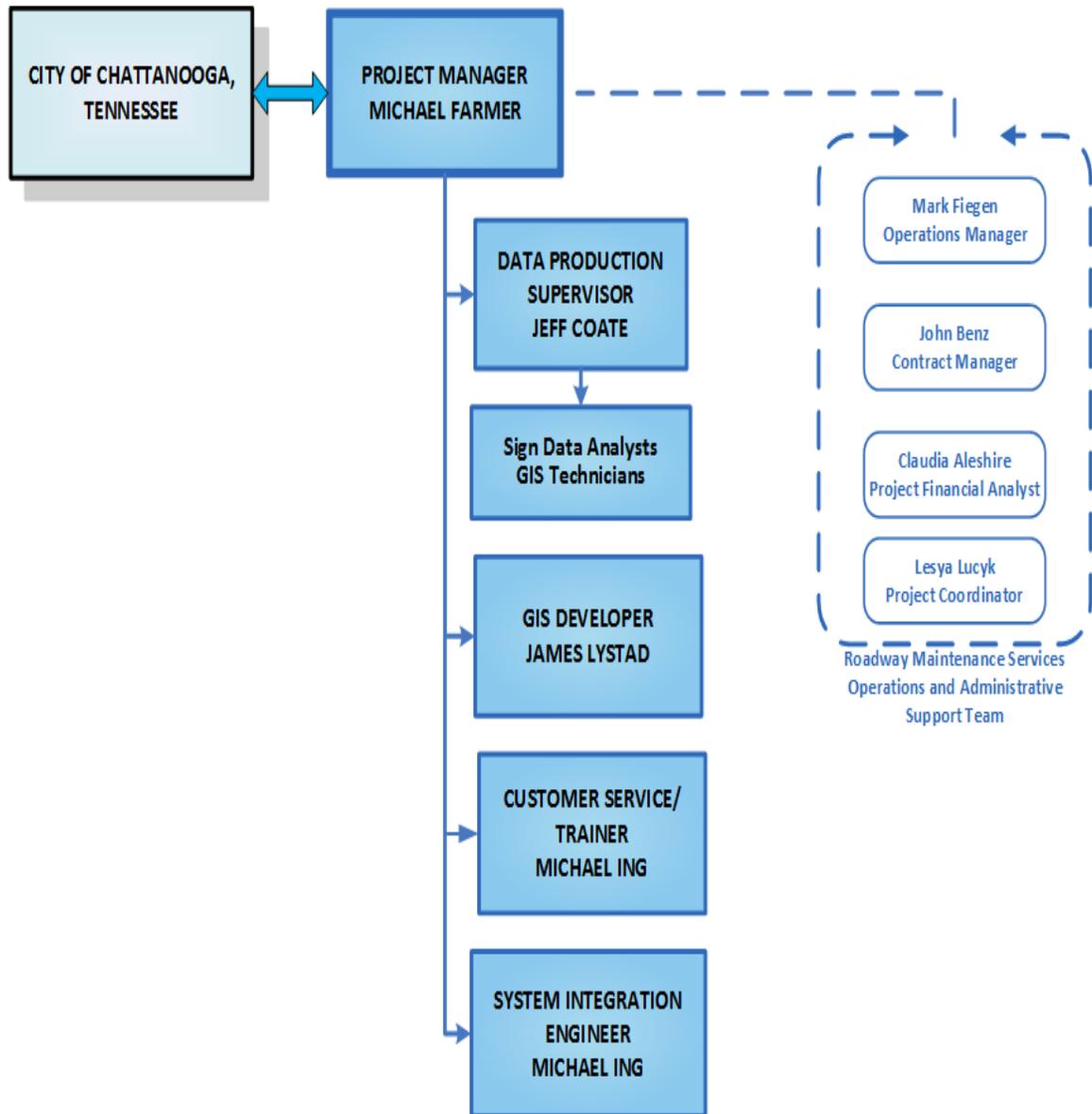
The project included:

- ◆ Data collection for over 12,000 traffic signs and 5,000 street lights and traffic signals
- ◆ Processing the data into individual sign and post records
- ◆ Conducting a nighttime assessment using the FHWA approved Comparison Panel Method
- ◆ Developing a web-based database to house the City’s data and as function as a management tool for future work and budgeting
- ◆ Providing two (2) field tools, FAST Tools, for the City’s crews to use to record their daily maintenance activities in the field and then uploading the completed tasks to the web-based database
- ◆ Training on the web-based database and FAST Tools
- ◆ Annual hosting, maintenance and support for the web-based database and FAST Tools
- ◆ Unlimited users and software upgrades

B. 3M PROJECT TEAM

1. ORGANIZATION CHART:

3M ROADWAY MAINTENANCE SERVICES SIGN INVENTORY DATA COLLECTION SERVICES PROJECT ORGANIZATION CHART



2. PROJECT MANAGEMENT AND KEY STAFF

Project Manager (Mike Farmer): The central point of contact with the city. His responsibility spans all technical, functional, administrative and financial aspects of the project. He will begin his work by fully considering input from the City to construct the detailed scope and deliverables expectations. His project plan will be shared with the City at a formal kick-off meeting.

Mike has years of experience managing traffic and roadway related projects for clients in the public sector. He will schedule progress reports with the City Staff and is responsible for meeting all key milestones and will communicate as requested with the public and public officials

Data Production Supervisor and 3M GIS Specialist (Jeff Coate): Jeff is responsible for the management of all of our Data Production staff that will be collecting the roadway video, processing the video into the GIS-database and populating the 3M web servers with City of Chattanooga data. He oversees the work of GIS Technicians and Sign Data Analysts in the Data Production Group. The tools and protocols that they use were developed by Jeff and he has overall technical responsibility for data quality. Jeff works closely with the Project Managers as his operations feed data to any and all projects underway simultaneously.

Data Production Group: The team consists of GIS Technicians and Sign Data Analysts. The technicians are certified to conduct nighttime reflectivity assessments according to FHWA methods. The Data Production staff members collect and analyze all the elements of the data that becomes part of the inventory database.

Technical Trainer and Customer Support Representative (Michael Ing): Michael is responsible for providing the in person training for office and field staff on the functionality of both the web site database and the FAST tool. Phone calls to our support line are priority routed to him. Our experience to date is that most calls are “how-to?” in nature rather than system bugs and data errors and hence his training experience is directly applicable.

System Integration Engineer (Michael Ing): Michael is also responsible for hardware system integration consisting of industrial cameras, GPS receivers, laptops/tablets, firmware and application software, mounting fixtures and configurations of the Multi-Capture Camera System and mobile device tools; with the following duties:

- ♦ Set up hardware, Install software, Configure the system and test the hardware.
- ♦ Prepare and configure the Multi-Capture Camera system to capture video for data collection.

GIS Developer (James Lystad): He supports continued development and implementation of SMS (Sign Management System) software. He is instrumental in developing innovative software and charting the path to application enhancements. James has also been involved in developing the web based database management system and will be involved in setting up the database and transferring data to other platforms. He also provides support to our back office tools and processes, moving the data from Analyst’s work stations to client’s database.

Administrative Support Staff: In addition to the key players actually involved in implementation and delivery of the project, we have an experienced support staff that provides legal, accounting, project coordination and operational management of the Roadway Maintenance Services group. They will assist the project manager with legal advice during the contract negotiations, financial record keeping, customer invoicing and subcontractor payables, submittals, correspondence and presentations and any other support required by the project manager to keep this project on track and within budget

C. DELIVERY CAPACITY AND SIMULTANEOUS PROJECTS

At the time of this writing we are under contract to deliver Sign Management Systems to Washington DC (Emergency Evacuation Routes only) and York Township, Pennsylvania. The timeline advertised for this project nests well with these projects. The plan for both of these projects has them past the stage of street scene capture by the time this project would be in a position for that task.

We have four additional projects that are pending award. If more than two of these projects are awarded in the near term, especially if they are in close succession and assuming they retain the timelines in their respective RFPs, then we would have to expand our total Data Production staff capacity. We have several means of adding capacity in this part of our operations:

- ◆ Bring on subcontracted labor, even if not DBE, to support our field work as vehicle drivers in this project.
- ◆ Schedule overtime work for the Sign Data Analysts. This can increase the capacity about 15% - 20%. Beyond that we experience diminishing returns due to attention fatigue in this task.
- ◆ Add additional Sign Data Analysts. We have an alternative processing methodology that allows us to use new team members by splitting this task into two parts, one of which is readily completed by inexperienced staff. This method is less efficient than our standard process but we can add significant capacity in this manner.

This kind of work is inherently non-uniform in the required rate of data production for clients under contract. We have structured ourselves for this situation and have successfully flexed to significant ebbs and flows over the 3 year course of this business.

D. RESUMES

3M RESUME: MICHAEL A. FARMER	
Proposed Role:	Project Manager
Education, Training, and Credentials:	Bachelor of Science - Civil Engineering, University of Minnesota
Relevant Experience	
3M Company: Roadway Maintenance Services Group, Traffic Safety Services Division Project Manager – 2010 to Present	Project Manager responsible for managing and directing all aspects of the construction process for assigned pavement marking and signing projects, with full accountability for budget, schedule, quality, safety and client satisfaction. <ul style="list-style-type: none"> ◆ Prepare project plan and communicate with customer, subcontractors and suppliers. ◆ Project portfolio includes asset management and inventory, multi-year performance pavement marking maintenance contracts, statewide intersections pavement marking and signing safety upgrades, among others.
Other :	<ul style="list-style-type: none"> ◆ Operations Manager, 2007-2010 ◆ Construction Project Manager 1994-2007
Project Related:	South Carolina Statewide Intersection Pavement Marking and Sign Improvement Project: Three (3) year contract to replace pavement markings and signs at 2,200 intersections to increase safety. <ul style="list-style-type: none"> ◆ Managed over 45 work orders for 2,200 intersections and over 20,000 signs ◆ Set up web-based database to keep track of assets, inventory, and maintenance.
	City of Bellflower, CA – Sign Management System Full sign management system, including inventory development and data collection, sign image capture, daytime condition assessment, and nighttime reflectivity assessment for each sign included in project scope <ul style="list-style-type: none"> ◆ Deliver to customer a web-based database and FAST tools for field use ◆ Project scope included 100 centerline miles and 5700 signs



3M RESUME: MICHAEL A. FARMER

<p><i>Project Related</i></p>	<p>Florida DOT District 5 Sumter County 5-year contract, performance based pavement marking maintenance and reporting on various state routes in Sumter County, 92 miles of roadway</p> <ul style="list-style-type: none"> ♦ Manage and maintain the long line and transverse pavement markings to required performance levels ♦ Annual condition assessment, repairs as needed, and certification reporting to FDOT
	<p>Florida DOT District 5 Brevard County 5-year contract, performance based pavement marking maintenance and reporting on various state routes in Brevard County, 100 miles of roadway</p> <ul style="list-style-type: none"> ♦ Manage and maintain the long line and transverse pavement markings to required performance levels ♦ Annual condition assessment, repairs as needed, and certification reporting to FDOT
<p><i>Project Related</i></p>	<p>City of Fargo, ND: Seven (7)-year contract: Responsible for maintaining all pavement markings within the city limits to required performance levels</p> <ul style="list-style-type: none"> ♦ On an annual basis - Inventory pavement markings, conduct condition assessment, and make repairs as necessary
	<p>Maryland Somerset County: Seven (7)-year contract: 16 State Routes and US Hwy 13 in Somerset County, approx. 200 miles of roadway Inventory traffic signs and pavement markings</p> <ul style="list-style-type: none"> ♦ Manage and maintain the traffic signs and pavement markings to required performance levels, reporting to MD SHA ♦ On an annual basis - Inventory pavement markings, conduct condition assessment, and make repairs as necessary ♦ On a monthly basis - Inventory traffic signs, conduct condition assessment, and make repairs as necessary. ♦ On an annual basis - Conduct nighttime reflectivity assessment of traffic signs, replace deficient signs



3M RESUME: JEFFREY C. COATE

Proposed Role:	Data Generation Supervisor and GIS Specialist	
Recent Relevant Experience		
3M Company: 2005-Present	Jeff is responsible for development and implementation of Geographic Information Systems (GIS), database applications and field collection tools. Responsibilities include asset inventory data structuring and management and data quality assurance. Jeff is an expert user of ESRI's GIS software and industry leading database management systems. He has delivered a wide range of GIS services including spatial data management, web-mapping application development and asset inventory management systems.	
Education, Training, and Credentials:	<ul style="list-style-type: none"> ◆ B.A., The Colorado College ◆ Master of Geographic Information Science (MGIS) University of Minnesota ◆ Licenses & Certifications: Microsoft Certified Professional. Six Sigma Greenbelt Certification, ◆ Professional Affiliation: Minnesota GIS/LIS 	
Project Related:	Jeff's responsibilities, on all of the following projects, involved Data Processing Team Management, SMS Implementation and Administration and Technical support. Jeff has worked on all of the SMS projects since the inception of the RMS Service team.	
Client	Description	Dates
Washington, D.C Evacuation Routes	Sign Inventory and Management System	Current
Glendale, CA	Sign Inventory, Management System, and Street Sign Upgrade	2010-Present
Parkersburg, VA	Sign Inventory and Management System	2013
Coolidge, AZ	Sign Inventory and Management System	2013
Decatur, GA	Sign Inventory and Management System	2012
Jersey City, NJ	Sign Inventory and Management System	2012
St. Lucie County, FL	Sign Inventory and Management System	2012
Algonquin Township	Sign Inventory and Management System	2011
Huntsville, TX	Sign Inventory and Management System	2011
Mesquite, NV	Sign Inventory and Management System	2010
South Gate, CA	Sign Inventory and Management System.	2010
Shasta County, CA	Sign Inventory and Management System	2011



3M RESUME: MICHAEL ING

Proposed Role:	Technical Trainer and Customer Support Representative System Integration Engineer/Project Fulfillment Specialist	
Education, Training, and Credentials:	Bachelor Of Electrical Engineering, December 2003 University Of Minnesota, Institute Of Technology, Minneapolis, MN	
Recent Relevant Experience		
3M Company:	Customer Service: <ul style="list-style-type: none"> ♦ Provide ongoing technical support to clients to resolve customer issues ♦ Manage client installation and training of 3M Sign Management Software at customer sites. ♦ Work in team environment to effectively maintain customers and ensure on time delivery of project deliverables. 	
	Hardware System Integration <ul style="list-style-type: none"> ♦ Responsible for hardware system integration consisting of industrial cameras, GPS receivers, laptops/tablets, firmware and application software, mounting fixtures and configurations of the Multi-Capture Camera System and mobile device tool; with the following duties: ♦ Set up hardware, Install software, Configure the system, test hardware and run Quality Assurance measures to ensure customers receive proper data. ♦ Prepare and troubleshoot Multi-Capture Camera system to capture video for data collection. 	
Project Experience	Integrated Multi-Cap system and Fast Tool and it's upgrade conversion; Provided on-site Customer training on SMS systems: Provided customer technical support for the following Clients and others.	
Client	Description	Dates:
Washington, DC -	Sign Inventory and Management System	Current
Parkersburg, WV	Sign Inventory and Management System	2013
Coolidge, AZ	Sign Inventory and Management System	2013
Decatur, GA	Sign Inventory and Management System	2012
St. Lucie County, FL	Sign Inventory and Management System	2012
Bergen County, NJ	Sign Inventory and Management System	2012
Jersey City, NJ	Sign Inventory and Management System	2012
Saratoga Springs, NY	Sign Inventory and Management System	2012
Smithtown, NY	Sign Inventory and Management System	2012
Algonquin Township	Sign Inventory and Management System	2011
Huntsville, TX	Sign Inventory and Management System	2011



3M RESUME: JAMES LYSTAD

Proposed Role:	Senior Software Developer
Education, Training, and Credentials:	<ul style="list-style-type: none"> ◆ Master of Science in Space Studies from University of North Dakota ◆ Master of Science in Geography from University of Wisconsin - Madison ◆ Bachelor of Science in Geography from University of Wisconsin – Madison ◆ Over 18 years experience in GIS Software development
Recent Relevant Experience	
3M Company:	James supports continued development and implementation of SMS (Sign Management System) software. He is instrumental in developing innovative software and fixing any bugs in the system.
Technical Expertise	<ul style="list-style-type: none"> ◆ ArcGIS Server 10.0 - over 3 years of experience creating image, feature, mobile services and map caches. ◆ ESRI ArcSDE (10.0) - over 10 years of experience creating, querying, and managing feature layers and spatial views. ◆ ESRI ArcGIS Desktop (8.x-10.0) - over 9 years of experience in map display, customization (using .Net), and geoprocessing, including Spatial Analyst, Image Analysis, Tracking Analyst, 3D Analyst, and Model Builder. ◆ ESRI ArcIMS (3.x-9.3) - over 9 years experience creating IMS image, feature, and extract services using AXL and ArcMap MXDs; as well as customizing websites. ◆ MS-SQL Server (2000-2008R2) - over 7 years experience in building databases, tables, and developing applications that leverage SQL databases. ◆ ER Mapper – 1 1/2 years experience used to view, analyze, and convert Landsat TM, AVHRR, SIR-C, SPOT imagery. ◆ MS-Office - over 10 years experience in all Office applications, including Access databases. ◆ Additional software experience: MapServer, IDRISI, MapMaker, Auto-CAD, SPSS. ◆ Development tools: ◆ Visual Basic (4-6) - over 10 years experience creating GUIs, data processing applications, and windows services. ◆ VB.NET (VS2000-2010) - over 5 years of experience creating data processing applications, windows services, and ArcGIS custom applications. ◆ HTML and XML - over 9 years experience. ◆ KML (Google Maps/Earth) – more than 2 years of experience. ◆ Python – over 5 years of experience.
Project Related:	Provides Technical Support for Enhancements of all Sign Management System Contracts.



IV.3M PROFILE AND COMPANY BACKGROUND

A. ROADWAY MAINTENANCE SERVICES

In 2003, 3M's Traffic Safety and Security Division staff conducted in-depth interviews with hundreds of state and local transportation officials to understand the difficulties they faced every day and to tailor solutions to meet their needs. We heard a resounding appeal for new highway infrastructure management methods to make transportation dollars more effective in meeting the needs of motorists. We responded to that call by forming 3M Roadway Maintenance Services (RMS).

The charter for RMS was to combine extensive pools of knowledge inside and outside of 3M into a single service offering that would raise the bar on effective installation and management of pavement markings and traffic signs. The staff for this unit was hand-picked to include experts in construction, engineering, project management, signing technology, performance modeling, geographic information systems, and logistics. It is this very blend of skills that is required to meet the objectives of our important customers.

Since 2005 this team has been both developing and deploying our project and construction management methods and tools. Each engagement with an agency or road authority has led us to further enhance our service offering. In the specific field of traffic and guide signs, no other enterprise has engaged in the kind of comprehensive management and planned performance upgrades expected by our customers. 3M RMS operates from the 3M Corporate Headquarters in St. Paul, MN and has a staff of 31 personnel.

B. TRAFFIC SAFETY AND SECURITY DIVISION

Since 1939, 3M Traffic Safety and Security Division (TSSD) has been the recognized leader in ground-breaking, high quality products and solutions that enhance mobility and safety on roadways globally. TSSD is among the world's leading producers of retroreflective products and systems serving the traffic safety, traffic management, vehicle registration, and commercial transportation markets. Products include 3M reflective sheeting used in the fabrication of traffic signs, construction work zone devices, vehicle license plates, and commercial vehicle markings; and a broad line of preformed pavement marking tapes, raised pavement markers, and high-durability liquid systems for both permanent and temporary applications.

TSSD supports basic research in the areas of optics and human factors to improve the visual performance of our safety products. We also promote the upgrade of standards and specifications through participation in ASTM and CIE. TSSD responds to drivers' needs by constantly upgrading existing products and systems, and by developing new technologies that improve traffic management and enhance motorist safety.

In September, 2012, 3M Traffic Safety and Security Division increased its product portfolio by an acquisition and combining with another division in 3M. All together we have almost 2,000 employees in our division.

C. 3M PROFILE

3M Company, formerly known as Minnesota Mining and Manufacturing Company, was founded in the Lake Superior town of Two Harbors, Minnesota, in 1902. In 1928, the Company was incorporated in the State of Delaware. Today, 3M is a global innovation leader in business for more than 100 years with more than almost 87,677 employees worldwide. We operate in more than 70 countries and serve customers in nearly 200 countries, with almost \$30 billion in annual sales. 3M has business relationships with all 50 U.S. state Departments of Transportation and with Road and Transportation Authorities worldwide.

3M is a publicly held Fortune 500 company headquartered in Saint Paul, Minnesota. It is one of 30 stocks comprising the Dow Jones® Industrial Average, and it is a component of the S&P 500® Index. Our ticker symbol is MMM.

A copy of 3M's Annual Report is available online at <http://phx.corporate-ir.net/phoenix.zhtml?c=80574&p=irol-IRHome>.

Our vaunted innovation, matched with the financial strength of our AAA bond rating, exemplary balance sheet and robust conversion of income to cash, assures our customers solutions unbounded by ordinary limits.

With more than 50,000 products that stem from some forty core technologies, ranging from fiber optic connectors, to micro-structured abrasives and aerospace adhesives, we are uniquely capable of our expansive vision. Our worldwide brands such as Post-It™, Thinsulate™, and Scotch™ embody the promise of “Practical and Ingenious Solutions that Help Customers Succeed.” Our ability to create these ingenious solutions is derived from our legendary investment in R&D that uses over six percent of revenue to continuously upgrade our core technologies. 3M has been awarded over 3,102 patents over the history of our company.

Pursuing our 3M vision has lead to many recent accolades, some listed below.

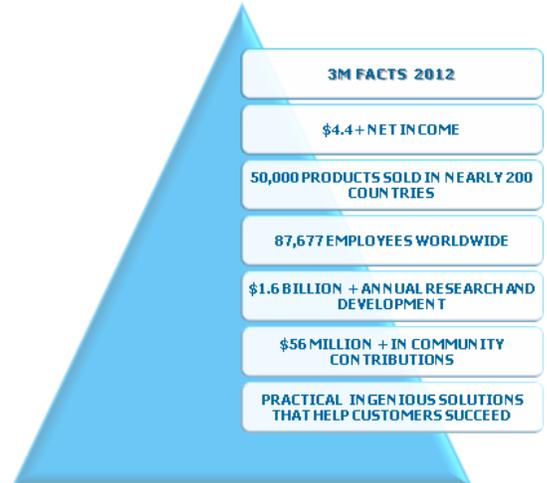


Third (3rd) Most Innovative Company by Booz & Co: one of the most prestigious management consulting firms in the world

Fourth (4th) Most Reputable Company by Forbes / Reputation Institute: Forbes is a leading business magazine; Reputation Institute is a private advisory and research firm specialized in corporate reputation management. The organization's Global RepTrak Pulse study identifies and assesses the world's most respected companies

Seventh (7th) Most Respected Company by Barron's: a leading business magazine

Fifteenth (15th) Most Admired Company by Fortune: a leading business magazine



3M Facts

Year-end 2012

3M is one of 30 companies in the Dow Jones Industrial Average and also is a component of the Standard & Poor's 500 Index.

Sales

Worldwide..... \$29.904 billion
International \$19.376 billion
65% of company's total

Net Income

Net income – reported..... \$4.444 billion
Percent to sales..... 14.9%
Earnings per share – diluted – reported \$6.32

Taxes

Income tax expense..... \$1.840 billion

Dividends

(Paid every quarter since 1916)

Cash dividends per share\$2.36

One original share, if held, is now3,072 shares

R&D and Related Expenditures

For 2012 \$1.634 billion
Total for last five years \$7.335 billion

Capital Spending

For 2012..... \$1.484 billion
Total for last five years \$6.328 billion

Employees

Worldwide 87,677
United States 34,746
International 52,931

Patents AwardedU.S. 527; Total 3,102

Organization

- More than 35 business units, managed under these five business groups beginning in 2013:
 - Consumer
 - Electronics & Energy
 - Health Care
 - Industrial
 - Safety & Graphics
- Operations in more than 70 countries – 40 international countries with manufacturing operations, 35 with laboratories.
- In the United States, operations in 30 states.

Technology

- 46 technology platforms, including:
 - Adhesives
 - Abrasives
 - Electronics & Software
 - Light Management
 - Microreplication
 - Nanotechnology
 - Nonwoven Materials
 - Surface Modification
- 8,200 researchers worldwide; 4,100 in the United States.

Environmental Results

- Prevented the generation of more than 3.5 billion pounds of pollutants since 1975 through completion of more than 10,000 Pollution Prevention Pays (3P) projects.
- Received the ENERGY STAR Sustained Excellence Award for Energy Management.

Community Citizenship/U.S. Community Giving

- 3M invests in education, social, arts and environmental programs in many communities where we do business.
- 3M and the 3M Foundation donated \$56.6 million in cash and products to U.S. educational and charitable institutions.

V. REFERENCES

Agency & Address	Key Contact	Completed Date	3M Project Mgr	3M Data Production Supv.	Road Miles	Signs	Street Scene Capture	Process into Database	Web Hosted Database	Nighttime Assessment	Field Tools	Deliver Database	Training	Maintenance (yrs)	Database Schema Conversion	Sign Replacement
City of Bellflower 16600 Civic Center Drive Bellflower, CA 90706	Bernardo Iniguez, Environmental Services Mgr. 562-804-1424	2013	Mike Farmer	Jeff Coate	100	5600	✓	✓	✓	✓	✓	✓	✓	2 yrs		
Volkert & Associates Washington DC Evacuation Route 5400 Shawnee Road Suite 301, Alexandria, VA 22312	W. D. McDowall II, P.E. Vice President 804-452-2862	Current	Russ Heifner	Jeff Coate	105	23,800	✓	✓	✓	✓	✓	✓	✓	YRLY		
City of Parkersburg 1 Government Square PO Box 1627 Parkersburg, WV 26102	Boo Henderson, Street Super. 304-424-8543	Current	Russ Heifner	Jeff Coate	200	7,500	✓	✓	✓	✓	✓	✓	✓	2		
City of Coolidge 130 W. Central Ave Coolidge, AZ 85128	Susanna Struble Public Works Director, City Engineer. (520)723-4882	Feb-13	Russ Heifner	Jeff Coate	207	3,987	✓	✓	✓	✓	✓	✓	✓	YRLY		



Agency & Address	Key Contact	Completed Date	3M Project Mgr	3M Data Production Supv.	Road Miles	Signs	Street Scene Capture	Process into Database	Web Hosted Database	Nighttime Assessment	Field Tools	Deliver Database	Training	Maintenance (yrs)	Database Schema Conversion	Sign Replacement
City of Decatur 509 N McDonough St Decatur, GA 30030	John Madajewski - Senior Engineer (404)377-6198	Nov-12	Sithya Khieu	Jeff Coate	74	1,300	✓	✓	✓	✓	✓	✓	✓	YRLY		
City of Jersey City 575 Route 440 Jersey County, NJ 07305	Joao D'Souza – Director of Traffic & Trans. (201)547-4530	Jun-12	Sithya Khieu	Jeff Coate	68	8,500	✓	✓	✓	✓	✓	✓	✓	YRLY	✓	
St. Lucie County 3071 Oleander Ave Fort Pierce, FL 34982-5509	Gene Snedeker, Traffic Operation Supervisor (772)216-6041	Mar-12	Sithya Khieu	Jeff Coate	600	30,000	✓	✓	✓	✓	✓	✓	✓			
Saratoga Springs 474 Broadway Saratoga Springs, NY 12866	Mark Benacquista, Traffic Eng. Director (518)587-3550	Feb-12	Sithya Khieu	Jeff Coate	155	8,110	✓	✓	✓	✓	✓	✓	✓	10	✓	
City of Hilliard 3800 Municipal Way Hilliard, OH 43026	Letty Schamp, P.E Transportation Engineer (614)334-2456	Jul-11	Sithya Khieu	Jeff Coate	137	4,690: Street Light Poles 1,608	✓	✓	✓	✓	✓	✓	✓	2		
Smithtown Township 758 Smithtown, BYP, Smithtown, NY 11787-5023	Mitchell Crowley, Traffic Safety Department Director	Nov-11	Sithya Khieu	Jeff Coate	559	11,804	✓	✓	✓	✓	✓	✓	✓	YRLY		



Agency & Address	Key Contact	Completed Date	3M Project Mgr	3M Data Production Supv.	Road Miles	Signs	Street Scene Capture	Process into Database	Web Hosted Database	Nighttime Assessment	Field Tools	Deliver Database	Training	Maintenance (yrs)	Database Schema Conversion	Sign Replacement
Algonquin Township 3702 U.S. Highway 14 Crystal Lake, IL 60014	Robert J. Miller, Highway Commissioner (847)639-2700	Apr-11	Sithya Khieu	Jeff Coate	55	1,540	✓	✓	✓	✓	✓	✓	✓	YRLY		
City of Cookeville 45 East Broad Street Cookeville, TN 38501	Greg Brown – Public Works Director (931)-520-5249	Aug-11	Sithya Khieu	Jeff Coate	250	11,750	✓	✓	✓	✓	✓	✓	✓	1	✓	
City of Urbana 706 S. Glover Ave, Urbana, IL 61802	Richard Coyne – Operations Supervisor (217)384-2342	Sep-11	Sithya Khieu	Jeff Coate	144	7,200 Lights & Signals 3,800	✓	✓	✓	✓	✓	✓	✓	YRLY	✓	
Shasta County 1855 Placer Street Redding, CA 96001	Casey Scott – Supervising Engineer (530)225-5661	Sep-11	Sithya Khieu	Jeff Coate	1,200	11,400	✓	✓	✓	✓	✓	✓	✓	2		
City of Huntsville 448 State Highway 75N Huntsville, TX 77320	David Welch, Street Service Superintendent (936)294-5727	Dec-10	Sithya Khieu	Jeff Coate	142	7,100	✓	✓	✓	✓	✓	✓	✓	YRLY		
City of Glendale, 541 W. Chevy Chase, Glendale, CA 91204-1813	David Lew, Traffic & Parking Serv. Manager (818) 548-3950	On-Going	Sithya Khieu	Jeff Coate	350	Invento ry 28,100 Replac e 5,169	✓	✓	✓	✓	✓	✓	✓	8		✓

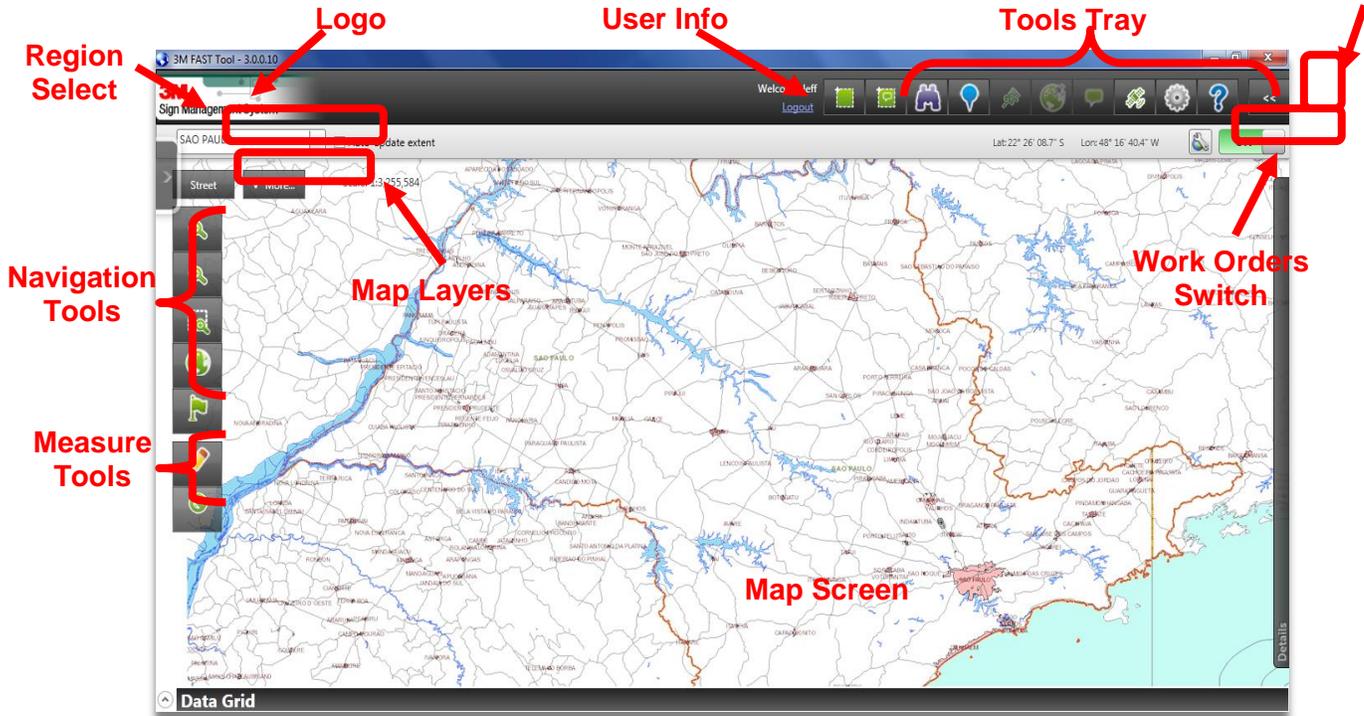


VI. OTHER

A. FAST TOOL

We are including a detailed document for the FAST Tool that we use for our training and as reference material. This will describe the features and capability of our FAST tool and provide you with information of its versatility and ease of use.

Graphical user interface (GUI) of the Sign Inventory mobile application.



Sign Viewer Slide out Window

Supports with associated signs in order are shown within the window for the selected sign on the screen.

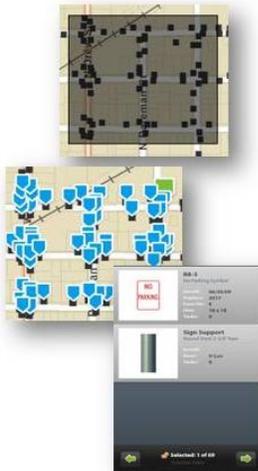


1. TOOLS TRAY

This collection of tools provides users the levels of functionality based upon their password protection rights. The system administrator has full rights to all of the tools.



a) Support Selection Tool



This tool allows users to draw a polygon that will return all the signs and posts within the perimeter, and provides a detailed description of each selected item. The *Sign View* panel shows a visualization of the selected support(s), complete with a representation of each sign on the support. The signs are positioned at their correct relative vertical location(s) based on the mount height of each sign. For common signs, a visual representation of the MUTCD is shown in the icon box. For custom signs, a photograph of the sign may be used in place of a generic image by placing the image in the raster field for the desired sign record.

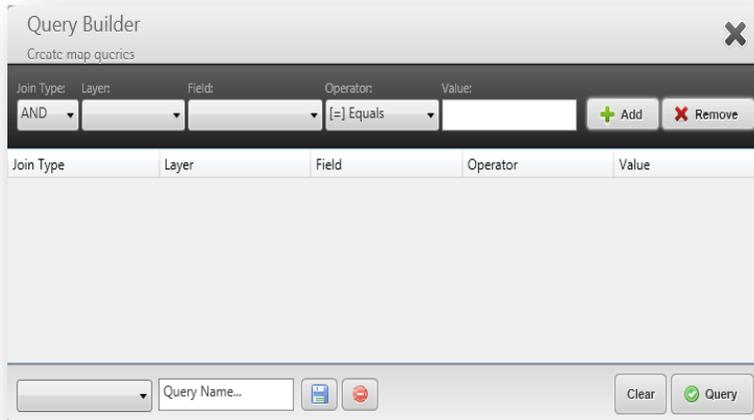
b) Toggle Selection Pop-Up Tool



This tool, when engaged, causes signs in proximity to the current GPS location to emit an icon describing the MUTCD. This will select all pop-up bubbles that are currently being shown. Using the Sign Viewer, the user is able to cycle through the selected posts.

c) *Query Builder* 

The *Query Builder* allows the user to define a sign or support query based on specific attribute criteria. Commonly executed queries can be saved and loaded to a user's profile. The query is built around an equality equation of relationships of fields to values. Simply put, users can ask the system questions through the query builder, and the map will illustrate the answer. A common example of this is users can query the inventory to identify TBD signs.



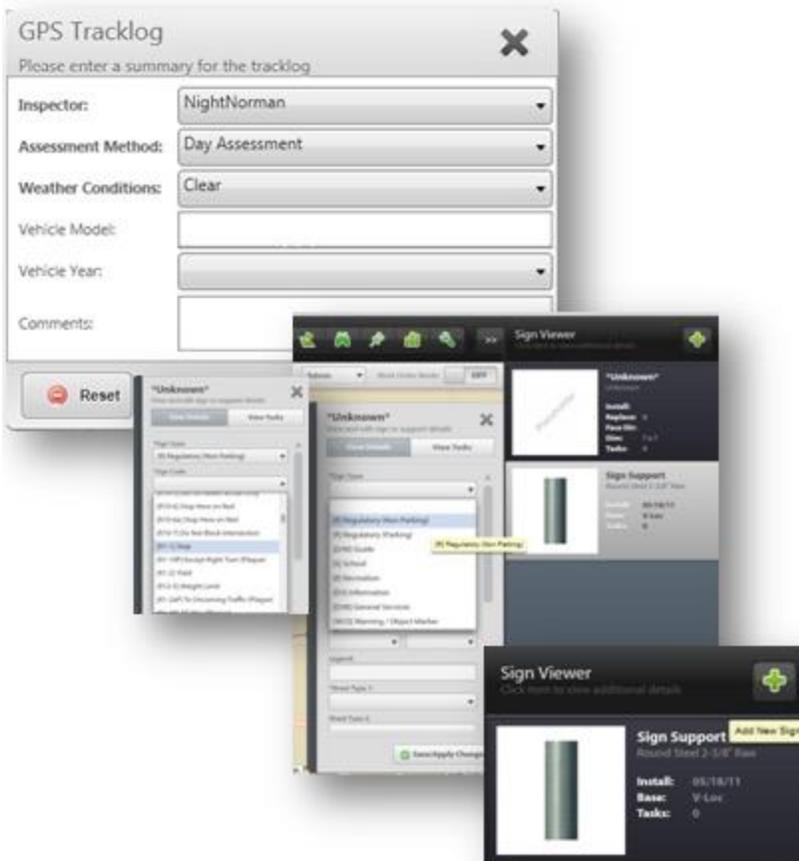
d) *Add New Support* 

This tool allows for the placement of a new support. The process of adding a new support can be accomplished by heads-up digitizing, which relies on the accuracy of the GIS base map (streets & imagery, etc.). After adding the support to the map, users will be able to enter the details about the support (i.e. type, comments, etc.), and also add the signs present.

e) *Add New Support with GPS* 

This tool drops a new support at the current location of the GPS. This allows for faster on-the-fly adding of sign supports.

f) Add Sign



With the new support in place users will now be able to add signs. Supports maintain the X, Y location in the GIS and signs are added as a many to one (M: 1) relationship to the support. This supports the multiple signs per support scenario. To add a sign, users simply click the green plus sign illustrated here.

With a comprehensive GIS Database model for signs and supports, data entry is simplified as most of the values can be selected from drop-down lists. The Sign Type and Sign Code values are defined by the MUTCD. Asterisks are used to identify all required fields. Required fields are configurable can be defined by your organization. The illustration below is an example entering data for a newly added sign. In this case, a Regulatory, Non-Parking sign

type and a sign code for a Stop sign is selected.

Continuing with the data entry and illustrating the ease of use with the drop-down value lists this is an example of the selecting the sign's Sheet Type. Also notice the Stop sign and support graphics show up in the Sign Viewer on the right. If there were multiple signs on this particular support they would stack up in the Sign Viewer as you would see them in the field. This is driven by the Sign Height attribute.

g) Support Options

Users can access additional support options when hovering or holding the mouse icon over the support graphic in the Sign Viewer as illustrated here. The additional options include deleting the support, adding a support task, viewing related images, or adding an assessment.



h) Sign Options

Users can access additional sign options when hovering or holding the mouse icon over the sign graphic in the Sign Viewer as illustrated here. The additional options include deleting the sign, adding a support task, viewing related images or adding an assessment.



i) Track Log Setup

This tool is used to record Track Logs. The recording will show you where you have been

with the mobile device. This function is only available when the GPS is active.



j) GPS Buffer Tool

This tool allows the user to show pop-ups within a certain distance of the GPS point. The pop-up shows a representation of each sign on a post without having to select that post. This function is only available when the GPS is active.

The area shown in pink represents the GPS Buffer. Supports. Associated signs within the map tip. are shown within the buffer.

k) Enable GPS On/Off

To enable the GPS on and off this tool must be selected. In order for track logs to be recorded the GPS must be turned on. The GPS is turned on when a green flashing circle appears on the map which represents the current location of the mobile device.

l) Admin Tools

The Admin Tools manages the mobile synchronization process and track log look-up. Mobile synchronization is bi-directional, and only the deltas, or changes, from each platform (mobile client and server) that get synchronized. This streamlines the data management process eliminating the need for back office post processing. Additionally, this creates an opportunity to support near real-time updates. Users have the option to sync GIS data and/or stand-alone tables and/or domain tables. The Track Log look-up enables the user to look up past track logs by date and inspector. All Track Logs within the selected dates would be added to the base map.



m) Help Tool 

By clicking on the Help Tool a browser will show up that brings the user to the 3M SMS website.

2. NAVIGATION TOOLS

The Navigation Tools are located on the left side of the application GUI. These tools include Zoom in, Zoom out, Zoom to Selected, Zoom to full extent and Select point on map to show TriView.

a) Zoom In 

The Zoom In tool allows users to Zoom In on the map. Users can zoom in by clicking on the Zoom In tool and then right clicking and dragging a box to Zoom in. Users can also zoom in and out using the scroll wheel on the mouse.

b) Zoom Out 

The Zoom Out tool allows users to Zoom Out on the map. Users can zoom out by clicking on the Zoom Out tool and then right clicking and dragging a box to Zoom Out. Users can also zoom in and out using the scroll wheel on the mouse.

c) Zoom to Selected 

The Zoom to Selected tool allows users to Zoom to the extent of the selected supports/signs on the map.

d) Zoom to Full Extent 

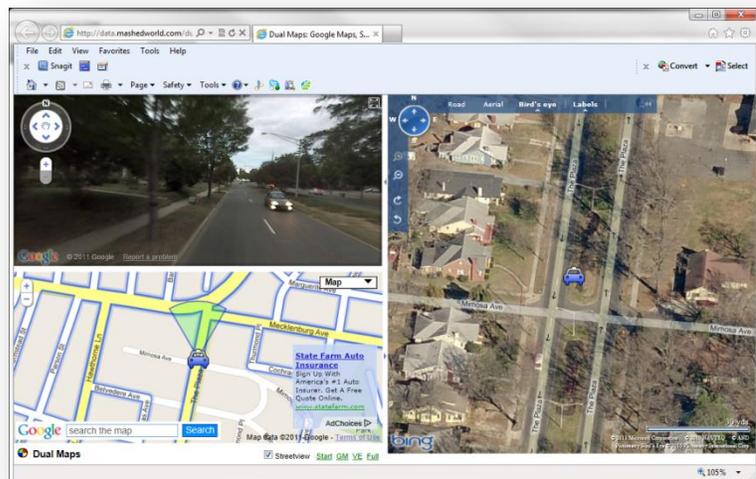
The Zoom to Full Extent tool allows users to Zoom to Full Extent of the map data.



3. TRIVIEW TOOL



The Select point on map for TriView Tool “TriView”. Allows the user to select the tool and then click on the map which will open a internet browser window displaying the Google Street View, Google Maps and Bing Bird’s eye. This requires an active internet connection to activate this tool.



4. MEASURE TOOLS



Create line measure graphics

Clear measure graphics

The Measure Tools are located on the left side of the applicatoin GUI below the Navigation Tools. These tools include create line measure and clear graphics.

a) Create Line Measure

The Create line measure tool allows users to measure using a single line or multipart line. In the example below shows two single lines and one multipart. Users click on the tool then click on the map and drag and double click to stop the measure or single click to create multipart lines. The total length is shown in text next to the line.



b) Clear Graphics

The clear graphics tool clears the measure graphics on the map. Users click on the clear graphics button to remove all graphics.

B. TRAINING SCHEDULE:

Day 1:

Morning Session: Website and FAST Tool Overview

Deliver and Review FAST Tool Hardware and Components

13. Review Agency Work Order Process and Maintenance Scenarios
14. Introduction and Training of Agency Website
15. Review Icons and its functionality
16. Run through example queries
17. Reset Passwords and add additional users
18. Demonstrate Tri-View and Sketching Tool
19. Introduction and Training of FAST Tool
20. Review Icons and functionality
21. Review Synching procedures and purpose of each item

Afternoon Session: FAST Tool Field Training

Demonstrate how to use the FAST Tool in the field

22. Review GPS operation and functionality
23. Demonstrate how to update details of Signs
24. Demonstrate how to relocate a sign/support
25. Demonstrate how to replace a sign/support
26. Demonstrate adding new Photo and creating new Assessment
27. Query for Open Work Order
28. Demonstrate Set Up Default Work Order
29. Demonstrate Selection Tool and Sign Viewer details

Day 2:

Morning Session: FAST Tool Field Training

Continue with more field practice of FAST Tool

Afternoon Session: Website Overview

Demonstrate Query of work completed

30. Review Standard Reports
31. Q&A session of Training
32. Install HTML and Help Files on Agency PCs
33. Review any remaining Punch List Items

B. SIGN ASSESSMENT PROCESS USING THE FHWA COMPARISON PANEL METHOD

1. METHOD FOR ASSESSMENT

A visual nighttime sign assessment method shall be used for conducting retroreflectivity assessment for all signs located within or associated with the City of Urbana's road right-of ways. The visual nighttime sign assessment method shall conform to FHWA Comparison Panel method guideline.

A daytime inspection shall be conducted to identify signs that require replacement for ASTM sheeting type I, II, and III beaded materials. The data shall be gathered and collected using the FAST tool containing the sign inventory database. The inventory database shall be updated via a web-based interface utility program.

2. COMPARISON PANELS PROCEDURES

Comparison Panel Method uses any vehicle with the correctly aimed headlamps. Typically newer mid-size to full-size vehicle will meet this requirement. The inspector age is not a factor for selecting an inspector. The "initial" inspection occurs at highway speeds. When a sign is suspected of having low retroreflectivity, an inspector can mark the signs or detailed inspection. The detailed inspection involves the following steps:

3. IDENTIFYING SUSPECTED SIGNS

Visual inspection utilizes an inspector judgment call on the rating based on his/her training. It is preferable to maintain the same inspectors throughout the project when possible. The inspectors are trained to observe the signs at various levels of retroreflectivity including signs at the minimum levels to exercise the mind to distinguish differences retroreflectivity levels. The rating shall conform to the following standards:

- ◆ Rating of Critical - Extremely low or no visibility when viewed at distances over 500ft (greater than 10skips or at distance when sign first comes into view) and/or not legible at 250ft or less (i.e. Less than 5 skips).
- ◆ Rating of Fair - Visible when viewed at distances over 500ft (greater than 10 skips or at distance when sign first comes into view) and good legibility at 250ft or less (i.e. Less than 5 skips)
- ◆ Rating of Good - Clearly visible when viewed at distances over 500ft (greater than 10skips or at distance when sign first comes into view) and good legibility at 250ft or less (i.e. Less than 5 skips)

New inspectors shall be trained both using mid-size and truck vehicle viewing simulations with actual aged signs. In addition, new inspectors shall be calibrated in a controlled field environment to practice his/her first night time inspection.

Once the inspector identified a suspected sign, observe traffic and safely pull over to inspect the sign.

4. PASS/FAIL CRITERIA

The sign must have a retroreflectivity level higher than the comparison standard panel in order for the sign to pass. The procedure can be done during daytime; although, it is preferable to conduct the assessment during nighttime driving.

Rating Criteria:

- ♦ CRITICAL–sign need immediate replacement
- ♦ FAIR–sign that may need replacement within 1-5 years
- ♦ GOOD–sign that may need replacement within 5 or more years

5. MINIMUM RETROREFLECTIVITY COMPARISON STANDARD PANELS

All standard are made using beaded or prismatic sheeting that have less sensitivity to the changes in the observation angle. The panels are calibrated to the minimum retroreflectivity levels in the MUTCD Table 2A-3.

- ♦ Each Comparison Panel Method standard master panel shall be generated using a photometric range. A portable Reflectometer approved by the sheeting manufacturer can then be used for generating panels for field use.
- ♦ Comparison Panel Method standards are hung in front of the sign using a mechanical clips or hooks with 3M Command TM Adhesive to avoid damaging the sign face.
- ♦ Standards must be re-calibrated annually by sending to the manufacturer.

Calibration standard values may not be exactly the same as specified in the MUTCD Table 2A-3. The tolerance, however, must not be larger enough to be visually detectable by a human eye.

6. VISUAL CALIBRATION - CALIBRATING THE INSPECTOR

Calibration standards have known retroreflectivity levels at or above minimum levels. The inspector uses the visual standard to calibrate his/her eyes to establish a threshold for the sign brightness levels. The following calibration procedure for the inspector shall be used:

- ♦ Calibration standards are needed for each color of sign in MUTCD [Table 2A-3](#).
- ♦ Calibration standards must be properly stored between inspections so that their retroreflectivity does not deteriorate over time.

It is recommended that new inspectors are trained in a control environment, such as in a viewing room, where various signs with different levels of brightness can be shown to help the inspectors identify the suspected signs.

7. VISUAL CALIBRATION - FIELD CALIBRATION PROCEDURE

- ♦ Wait until complete darkness
- ♦ Drive the vehicle along the routes and have the inspector observe sign brightness levels
- ♦ Identify a sign and safely pull over to the shoulder at a distance to the sign that allows the headlight to shed the low beam light on the sign face

- ◆ Clip the comparison standard panels
- ◆ Observe and compare the brightness of the signs to the panels

Repeat the calibration if the ambient conditions have drastically changed that may affect the inspector's ability to observe the sign reflectivity. For example, if the calibration was done in the rural sections of the inspection routes, it may be prudent to re-calibrate when you enter the urban areas.

8. DATA REQUIREMENTS

The contractor shall create a log for each inspection which establishes the name of the inspector, assessment method, route, date, time, weather conditions, vehicle model and year of manufacture.

C. DBE INFORMATION AND USE OF DBE IN PREVIOUS PROJECTS

3M Policy for Disadvantaged Business Enterprises:

Sourcing from diverse businesses that are small, minority, woman, veteran, disabled veteran, and HUBZone owned and from historically black colleges and universities is an important part of the way 3M purchases goods and services. These businesses comprise a vital, growing segment of our economy with great potential for helping 3M obtain best value, innovation, and diverse goods and services.

Sourcing Operations is committed to aggressively identify diverse business sources for all goods and services we purchase. Sourcing Operations will endeavor to provide technical assistance to those firms with significant promise of becoming long-term suppliers. Once identified and developed, Sourcing Operations will place orders and execute contracts with these diverse firms, as required to support business unit needs and the corporate commitment to continue fair and active consideration of diverse suppliers.

Our Supplier Diversity Initiative specifically recognizes the valuable contributions that can be made by diverse suppliers. They make up a vital segment of our economy, offering products and services often unavailable from larger companies. 3M remains committed to continued fair and active consideration of these suppliers.

3M Roadway Maintenance Services implements this policy and routinely contracts with Disadvantaged Business Enterprises for a variety of work tasks. In the case of delivering the 3M Sign Management System, 3M has all of the resources internally to implement the project, and incorporating subcontractors can increase the total cost of a project. Because of the short timeline provided to respond to this RFQ, we have not yet been able to qualify any Tennessee DBEs for work as a 3M subcontractor. However, consistent with our policy, if awarded this contract we will broaden our efforts to engage a qualified DBE for selected work tasks. We have been especially successful using DBEs to provide local drivers and vehicles for our field data collection activities. Such work is ordinarily on the order of 10% of the total project value.

D. CERTIFICATE OF INSURANCE

E. POWER OF ATTORNEY

POWER OF ATTORNEY

By the authority granted the undersigned by the Deputy General Counsel and Secretary, the individuals listed below are appointed as 3M's, or its designated subsidiaries', true and lawful attorneys-in-fact for it, and in its name, for commercially-available products and services and government-unique products and services (except research and development services¹) for which 3M or its designated subsidiaries will be a prime contractor or subcontractor to any federal, state or municipal governmental agency in the United States, or to a federal, state or municipal prime contractor or higher tier subcontractor in the United States, to do acts specified on behalf of this Corporation.

- (a) To submit or execute proposals, bids, binding purchase orders, contracts and subcontracts, and documents related thereto, excluding certifications, representations and warranties to comply with certain laws or regulations² (hereafter referred to as "certifications"), the following attorneys-in-fact are hereby appointed. Authority may not be sub-delegated.

Authority for the below individuals applies to the specific Business Unit or staff function indicated, subject to the limitations imposed by their respective General Manager/Vice President or equivalent.

- | | | | |
|---|---|--|---|
| <ul style="list-style-type: none"> • <u>3M Purification Inc.</u>
Richard P. Couture • <u>3M ESPE Division</u>
Todd M. Scott • <u>3M Unitek Corporation</u>
Daniel C. Mitchell • <u>Aearo Technologies LLC</u>
Perry M. Canniff • <u>Aerospace and Aircraft Maintenance Division</u>
Perry M. Canniff • <u>Abrasive Systems Division</u>
Perry M. Canniff • <u>Advanced Materials Division</u>
Scott R. Hanson • <u>Critical and Chronic Care Solutions Division</u>
Melanie J. Zahler | <ul style="list-style-type: none"> • <u>Electronics Markets Materials Division</u>
Joseph F. Koch • <u>Electrical Markets Division</u>
Timothy A. Koenig • <u>Food Safety Department</u>
Melissa A. Mallak • <u>Government R&D Contracts Department</u>
Steven L. Kays
Ruth P. Charles
Vivien L. Smith • <u>GTA-NHT, Inc</u>
Perry M. Canniff • <u>Health Information Systems Division</u>
Andee S. Andriole
Deborah A. Mason
Garri L. Garrison
Gayl W. Kirkpatrick
Gerald R. Jennings
James R. McDonough
Jan C. Cline
John C. Mathison
Lisa M. Black
Myung H. Kim
Ray J. Terrill Jr.
Terri G. McCubbin | <ul style="list-style-type: none"> • <u>Industrial Adhesive and Tapes Division</u>
<i>Authority for the below individual(s) applies to Federal Supply Schedule contracts only:</i>
Perry M. Canniff • <u>Infection Prevention Division</u>
Melanie J. Zahler
-Health Care Service Support
Bill J. Biebesheimer • <u>Optical Systems Division</u>
Micki A. Summers • <u>Personal Safety Division</u>
Thomas L. Ketteyman • <u>Quest Technologies</u>
James D. Banach • <u>Stationery and Office Supplies Division</u>
Malcolm P. West | <ul style="list-style-type: none"> • <u>Traffic Safety and Security Division</u>
Catherine J. LeClair
Chad Reed
Daniel F. Moran
David A. Pointon
Ella M. Schiralli
John F. Sebastian
John N. Morris
John P. Benz
John W. Lehman
Linda M. Gondringer
Mary K. Zilles
Matthew J. Bignell
Matthew R. Leibel
Michael J. Ristau
Nicole A. Christopherson
Richard J. LaClair
Robert L. Storeygard • <u>Venture Tape Corporation</u>
Perry M. Canniff |
|---|---|--|---|

Authority for the below individuals applies to the specific Business Unit or staff function indicated.

- | | |
|--|---|
| <ul style="list-style-type: none"> • <u>Global Channel Services</u>
Paul H. Sander
Derrick E. Hilfer • <u>Government Contract Compliance</u>
Elizabeth A. Grimes
Karin Stein O'Boyle
Richard J. Bordas | <ul style="list-style-type: none"> • <u>Government Markets</u>
Karen A. Kindem
Laurie A. Patrick • <u>Office of General Counsel</u>
Richard N. Kuyath |
|--|---|

¹ Authority to submit proposals and sign contracts for research and development services is managed by the Executive Vice President & Chief Technology Officer for Research & Development.

² Product or performance warranties are to be reviewed and accepted by any 3M individual granted authority or responsibility to do so by the applicable business unit or staff group.

(b) To make certifications, except Country of Origin certifications, the following attorneys-in-fact are hereby appointed. Authority may not be sub-delegated, except certifications made by other attorneys-in-fact listed in paragraph (a) may be authorized in writing by one of the individuals listed in paragraph (b) after a determination by one of the individuals in paragraph (b) that such certification is valid. Unfamiliar certifications must be cleared with the Government Contract Compliance department prior to execution.

Authority for the below individuals applies to any Business Unit or staff function indicated.

- 3M Purification Inc.
Richard P. Couture
- 3M ESPE Division
Todd M. Scott
- 3M Unitek Corporation
Daniel C. Mitchell
- Aearo Technologies LLC
Perry M. Canniff
- Abrasive Systems Division
Perry M. Canniff
- Aerospace and Aircraft Maintenance Division
Perry M. Canniff
- Advanced Materials Division
Scott R. Hanson
- Critical and Chronic Care Solutions Division
Melanie J. Zahler
- Electronics Markets Materials Division
Joseph F. Koch
- Food Safety Department
Melissa A. Mallak
- Government R&D Contracts Department
Steven L. Kays
Ruth P. Charles
Vivien L. Smith
- GTA-NHT, Inc
Perry M. Canniff
- Health Information Systems Division
Andee S. Andriole
Deborah A. Mason
Garri L. Garrison
Gayl W. Kirkpatrick
Gerald R. Jennings
James R. McDonough
Jan C. Cline
John C. Mathison
Lisa M. Black
Myung H. Kim
Ray J. Terrill Jr.
Terri G. McCubbin
- Infection Prevention Division
Melanie J. Zahler
- Industrial Adhesive and Tapes Division
Authority for the below individual(s) applies to Federal Supply Schedule contracts only:
Perry M. Canniff
- Personal Safety Division
Thomas L. Ketterman
- Quest Technologies
James D. Banach
- Traffic Safety and Security Division
Chad Reed
Daniel F. Moran
John N. Morris
John P. Benz
Linda M. Gondringer
Mary K. Zilles
Matthew J. Bignell
Matthew R. Leibel
Michael J. Ristau
Richard J. LaClair
Robert L. Storevqard
- Venture Tape Corporation
Perry M. Canniff

Authority for the below individuals applies to the specific Business Unit or staff function.

- Global Channel Services
Derrick E. Hilfer
- Government Contract Compliance
Elizabeth A. Grimes
Karin Stein O'Boyle
Richard J. Bordas
- Government Markets
Karen A. Kindem
Laurie A. Patrick
- Office of General Counsel
Richard N. Kuyath

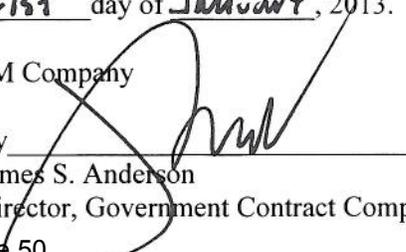
(c) To make Country of Origin certifications, the following attorney(s)-in-fact are hereby appointed:

- Office of General Counsel
Richard N. Kuyath
- Trade Compliance Department
Authority may be sub-delegated in writing:
Doug G. Whitman

For all appointments, authority ceases or may be subsequently modified upon the individual's change in business unit, staff group or responsibilities, or when employment is terminated. Authority may be withdrawn or modified at any time.

This Power of Attorney revokes all prior Powers of Attorney with respect to the same matters and shall remain in effect until terminated by the undersigned or any other person authorized to grant powers of attorney on behalf of 3M. The undersigned has signed this Power of Attorney on this 21st day of January, 2013.

3M Company

By 
James S. Anderson
Director, Government Contract Compliance

VII. REQUIRED ATTACHMENTS:

A. EDUCATIONAL MATERIAL



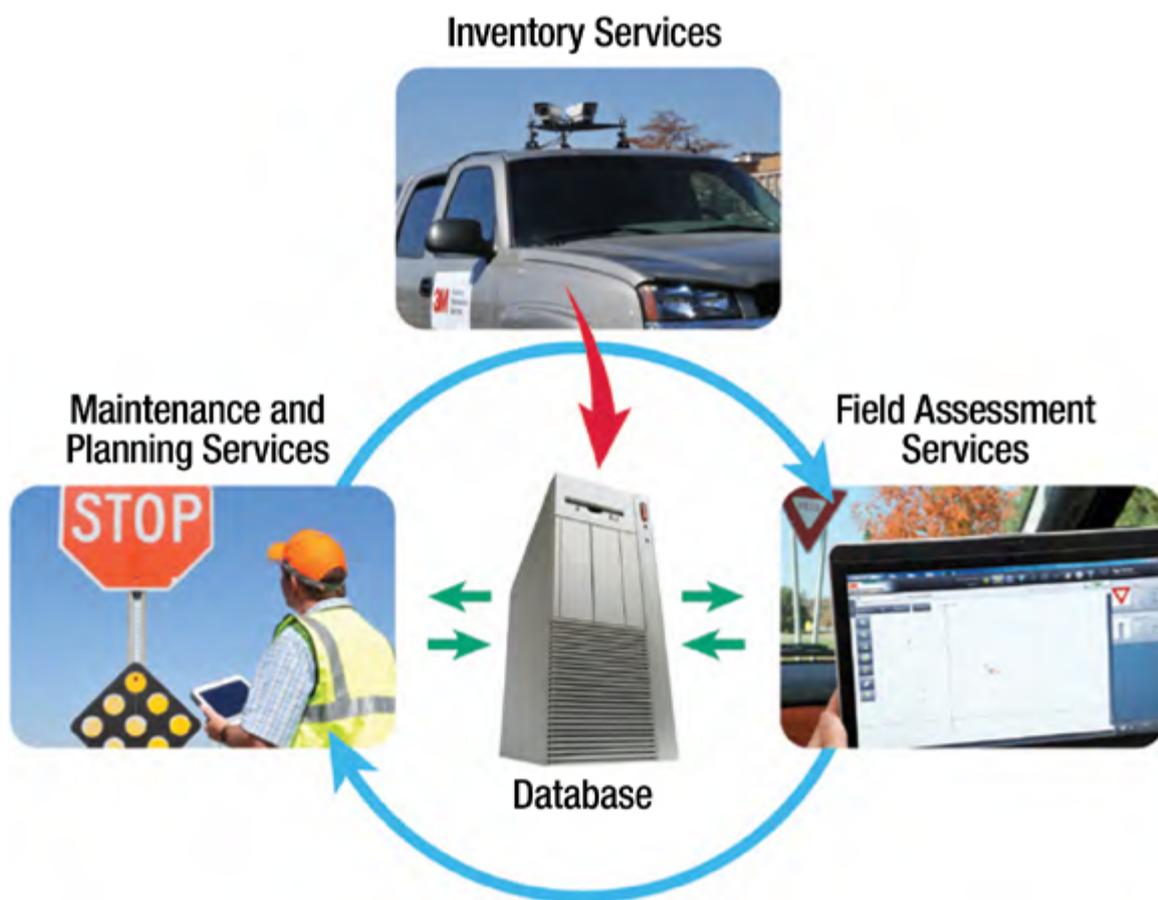
Solutions
for Visibility, Safety
and Compliance



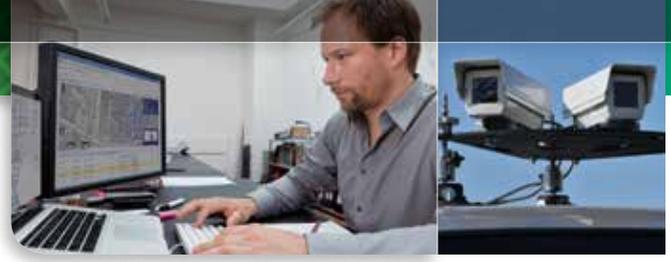
3M™ Sign Management System

Shift the responsibility for traffic sign inventory data collection, assessment and management to technology and traffic safety experts.

- Sign management methods that comply with FHWA Minimum Retroreflectivity Ruling requirements
- A single, trusted source for superior products, technology and services
- Comprehensive and cost-effective inventory and assessment
- Systematic planning, maintenance and budgeting



3M's approach to sign management includes integrated services and technology to collect, build, assess and manage an agency's traffic sign inventory to comply with the Federal Highway Administration's (FHWA) standards.



Sign Inventory Services

You can count on 3M, a trusted leader in retroreflective technology for over 70 years, to provide comprehensive and cost-effective sign inventory services as the critical first step in implementing a method to maintain traffic sign retroreflectivity in compliance with Federal Highway Administration standards.

Sign Inventory Data Collection

The first step on the road to compliance is to determine the number, type and location of signs within an agency's jurisdiction. The process begins with 3M technicians recording a comprehensive set of GPS-located street-level images using MultiCapture Mobile Asset Logging System. MultiCapture software records GPS-synchronized digital images multiple times per second, ensuring accurate imaging of signs along the roadway while driving at normal posted speed limits. 3M's trained technicians drive the entire project area with a focus on data quality, safety and efficiency.



Inventory Services

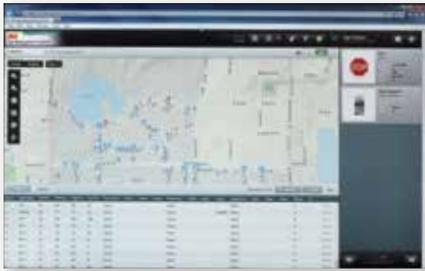
Post-Processing and Database Development

After the data is collected, post-processing of the GPS-synchronized images builds a sign inventory database using 3M VideoFramer software within customized GIS software to accurately record sign location, physical condition and attributes, including:

- Global Positioning System (GPS) coordinates
- MUTCD Code and Description
- Sign orientation and position on post
- Sign and post condition
- Post type and material
- Dual digital images of each sign

For more information visit:

www.3M.com/roadwaysafety/services



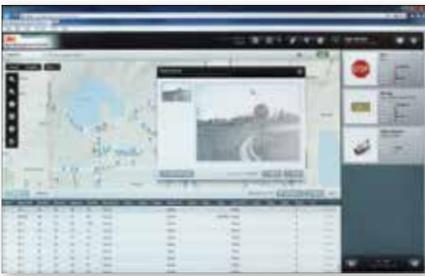
Brown shields on map indicate signs that need maintenance.

Web-Based Inventory Management System

The sign inventory database is hosted by 3M in a secure data center which can be accessed through a password-protected web-based management system, eliminating the need to purchase, install and update complicated and expensive software.

Additional Sign Management Services

In addition to sign inventory services, 3M also provides field assessment services including day and nighttime visual inspections of traffic signs, and maintenance and planning services to help agencies prepare maintenance plans, work orders and budgeting.



Sign and post images are available at the click of a button.

To learn more about matching the 3M™ Sign Management System to your specific needs, contact your 3M representative, visit www.3M.com/roadwaysafety/services or call 1-800-553-1380.





Sign Field Assessment Services

Once an agency's sign inventory data has been collected and post-processed into a central inventory database, it must be updated to reflect assessment and maintenance activities as they are completed to remain valuable to the agency and compliant with Federal standards.

3M traffic safety professionals conduct field assessment services using the Field Asset Status Tracker (FAST) tool, a GPS-enabled netbook and software, to easily, accurately and efficiently update the sign inventory database from the field. 3M or agency personnel can use the FAST tool to quickly identify and record sign data from a moving vehicle directly into the database.



Field Assessment Services

Nighttime Assessments

3M trained inspectors perform a visual nighttime inspection to assess the visibility and legibility of traffic signs. Using the FAST tool, inspectors can view the vehicle's location as well as signs within a surrounding area on the GPS-enabled FAST tool interface map. They can select and "flag" signs appearing to have low reflectivity or legibility defects without leaving the vehicle. Maintenance personnel may then schedule measurement, replacement or repair as needed to restore performance to the required level. This approach can help agencies reduce costs associated with physically approaching each sign to collect retroreflectivity measurements.



Nighttime Assessments

Daytime Assessments

3M can also provide initial or annual daytime field assessment services to identify signs requiring replacement due to damage, vandalism or obstruction and ensure the sign inventory database remains current and compliant.

Field assessment data is uploaded to the web-based inventory management system at the end of the shift, ensuring a current central access point for ongoing assessment, maintenance planning, work orders and budgeting.



Daytime Assessments

For more information visit:

www.3M.com/roadwaysafety/services



Mobile field assessment using FAST tool.

Additional Sign Management Services

In addition to sign field assessment services, 3M also provides inventory services to collect sign data and build an inventory database, and maintenance and planning services to help agencies prepare maintenance plans, work orders and budgeting.

To learn more about matching the 3M™ Sign Management System to your specific needs, contact your 3M representative, visit www.3M.com/roadwaysafety/services or call 1-800-553-1380.



Sign maintenance or replacement ensures compliance with performance standards.



Traffic Safety and Security Division

3M Center, Building 0235-03-A-09

St. Paul, MN 55144-1000

U.S.A.

1-800-553-Page 57

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1-800-3MHELPS

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Sign Maintenance and Planning Services

3M's approach to sign management includes integrated services and technology to collect, build, assess and manage an agency's traffic sign inventory to comply with the Federal Highway Administration's (FHWA) standards.

Once an agency's sign inventory data has been collected and an assessment has been performed, 3M processes and stores the data in an online inventory database. The sign inventory database can be accessed through a secure, password-protected web site hosted and managed by 3M, eliminating the need for agencies to purchase, install or maintain equipment or software.

Authorized users can query the inventory based on specific data values to help visualize the inventory and plan maintenance activities. Updates can be made via the web interface or with 3M's Field Asset Status Tracker (FAST) tool, a GPS-enabled netbook and software, to easily, accurately and efficiently update the sign inventory database from the field. FAST tool updates are regularly uploaded to the inventory database providing confidence that data is accurate, complete and up-to-date.



Maintenance and Planning Services

Maintenance and Planning

The web-based management system provides a powerful, yet easy-to-use interface to the inventory database for maintenance planning, work orders and budgeting. 3M can work with an agency to:

- Identify those signs that do not meet the new Federal minimum retroreflectivity requirements
- Plan and budget for the replacement of deficient signage
- Identify the placement of new signage
- Develop a maintenance plan
- Support the generation of work orders and schedule replacement



Website displays location, detail and photo of each sign.

For more information visit:

www.3M.com/roadwaysafety/services



MultiCapture Mobile Asset Logging System records street level images to build an inventory database.

Additional Sign Management Services

In addition to sign maintenance and planning services, 3M also provides inventory services to collect sign data and build an inventory database, and field assessment services including day and nighttime visual inspections of traffic signs.

To learn more about matching the 3M™ Sign Management System to your specific needs, contact your 3M representative, visit www.3M.com/roadwaysafety/services or call 1-800-553-1380.



Mobile field assessment using FAST tool.



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Overview

Organization

Glendale Public Works Department

Profile of customer

The Glendale Public Works Department maintains roads, traffic signs and other public infrastructure across the city's jurisdiction.

Situation

The city did not have any type of inventory system for traffic signs. The information was stored as a paper document with no way to catalog or check the records.

3M Solution

3M™ Sign Management System

Results

The 3M Sign Management System improved efficiency and saved money in budgeting and in litigation.

"We maintain high standards for signs in Glendale so no one can claim signs are faded beyond visibility, and we always increase signs one size to reduce problems."

*—David Lew,
Traffic and Parking supervisor,
Glendale Public Works Department*



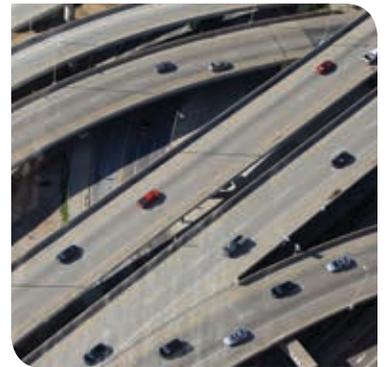
Sign of the Times

3M™ Sign Management System

Located in Los Angeles County, Calif., Glendale boasts a population of more than 191,000 and is the third largest city in the county. Glendale, also known as “the Jewel City,” is considered among the most desirable cities in Southern California.

The Glendale Public Works Department is responsible for providing service and maintenance for a variety of city assets, including 350 lane miles and more than 40,000 traffic signs. The department's mission is to provide the highest quality public works, and deliver quality and innovation in every aspect of their operation.

Until recently the city didn't have any type of inventory program for signs. The only information recorded for a particular sign was the date of installation and the type of retroreflective sheeting on the sign. This information was stored on a Daily Assignment sheet (a paper document) with no way to catalog information or check the record.



“When we replaced signs on a large scale, we would guesstimate the number of signs we needed and hope we didn't over-estimate,” said David Lew, Traffic and Parking supervisor, Glendale Public Works Department. “The last time we did this we were 200 stop signs over what we needed—and they lasted eight years.”

Lew attended demonstrations of the 3M™ Sign Management System and learned how it could keep track of the number, type and location of signs within an agency's jurisdiction, then assess and manage an agency's traffic sign inventory to comply with the Federal Highway Administration's (FHWA) standards. He immediately appreciated the system's versatility, ease of use and the minimal amount of training needed to use it.

“Once information is logged in on a laptop or website it's easy to update, and everyone has the same information for maintenance,” said Lew. “For example, you can zoom in on a sign at a particular corner, and if it's faded, broken or leaning, you can flag it on the system.”

3M™ Sign Management Services

The first step in creating a traffic sign inventory is determining the number, type and location of signs within an agency's jurisdiction. Following data collection, a sign inventory database is built to accurately record sign location, physical condition and attributes, including:

- Global Positioning System (GPS) coordinates
- MUTCD Code and Description
- Sign orientation and position on post
- Sign and post condition
- Post type and material
- Dual digital images of each sign

Lew appreciates that he can now show exactly what he's spending money on and why. And because he knows exactly what needs to be replaced, the budgeting process is much more precise. Previously, his department used pads of paper to write work orders. Now, he and his employees can enter that information into the 3M system, and not worry about losing a piece of paper. In addition, with a single click on the system, his department can generate detailed reports of what signs need to be replaced and when the replacement should occur.



To secure funding, Lew tied acquisition of the 3M sign management system to a citywide street name sign replacement project. Using photos of an old, faded street name sign and a new high retroreflectivity version, he showed the City Council the benefits of new, compliant signs. He also brought letters from the Police and Fire Chiefs stating the difficulty of reading street signs day and night, and that new signs would enhance public safety.

The City Council approved funding and Glendale now uses 3M's inventory software and database, with laptops, for its compliance and citywide inventory. To procure this type of system, Lew advises preparing a request for proposal (RFP) that spells out exactly what you want in a sign management system. The street name sign replacement project was included in Glendale's RFP, and was also awarded to 3M.

"The 3M Sign Management System has improved our efficiency, and saved us money in budgeting and in litigation," said Lew. "Now people can't claim a sign was obscured, damaged or missing. We can show the sign was there, when it was installed and what type of retroreflective sheeting it has."



Overview

Organization

St. Lucie County Road and Bridge Division

Profile of customer

The St. Lucie County Road and Bridge Division provides maintenance and reconstruction of county drainage facilities, roadways, and traffic signs and signals.

Situation

County officials had no tracking information about the county's traffic signs.

3M Solution

3M™ Sign Management System

Results

The 3M Sign Management System has improved efficiency with a skeletal crew and made it easy for the county to track needs, allowing them to focus on critical issues first.

"Thanks to 3M's Sign Management System, we know the condition of every sign in the county. We're replacing all critical stop signs and we have a battle plan, and planning is much easier."

— Gene Snedeker,
Traffic Operations Supervisor,
St. Lucie County Road and Bridge Division



Sign of the Times

3M™ Sign Management System

Florida's St. Lucie County includes the cities of Fort Pierce, Port St. Lucie and St. Lucie, and has a population of 278,000. The St. Lucie County Road and Bridge Division is responsible for providing maintenance and reconstructing county drainage facilities, roadways, and traffic signs and signals.

Until recently, the 688-square-mile county was strictly reactionary with respect to its signs. Officials had no information about the condition of the county's traffic signs, so it was very difficult to develop a maintenance plan. When county workers or citizens called to report damaged or missing signs, the signs were promptly repaired or replaced, but it was impractical to have employees drive around to inspect signs.

In 2005, four hurricanes struck St. Lucie County, damaging or destroying an estimated one third to one half of the county's traffic signs. When crews began replacing the signs, no one knew how many there should be or what type of sign belonged where. When Gene Snedeker, Traffic Operations Supervisor, was asked how many signs were lost, he admitted the department had no idea.



"Often we knew we had a stop sign in a location, but we didn't know how long it had been there or what condition it was in," said Snedeker. "Now that we're using the 3M™ Sign Management System, it's much easier to plan and buy signs knowing what we have and what we need."

At a seminar in Orlando, Snedeker learned how 3M's sign management system can report the number, type and location of signs within an agency's jurisdiction. Officials can use the system to assess and manage an agency's traffic sign inventory for compliance with the Federal Highway Administration's (FHWA) standards, and keep the sign inventory current.

When Snedeker first heard about the 3M sign management system, he thought 'Not another one of these.' They had tried two systems previously. The first never got off the ground, and with the second one, employees spent more time on the phone with tech support than they did using it.

3M™ Sign Management Services

The first step in creating a traffic sign inventory is determining the number, type and location of signs within an agency's jurisdiction. Following data collection, a sign inventory database is built to accurately record sign location, physical condition and attributes, including:

- Global Positioning System (GPS) coordinates
- MUTCD Code and Description
- Sign orientation and position on post
- Sign and post condition
- Post type and material
- Dual digital images of each sign

In contrast, the day after his crew received training on the 3M sign management system, they were using it effectively and it quickly became their routine. The 3M system is intuitive and it takes less time to keep their records on the computer than the paper records they previously used.

“The 3M sign management system is much more efficient. Our crews know what’s important and can make assessments looking at each sign or create a work order on the website,” said Snedeker. “We have a skeleton crew, yet we were still able to replace all 167 critical stop signs in a month, which was faster than we thought possible.”



According to Snedeker, one of the best things about the system is having pictures, the location and condition of every sign in the county ready for after the next big hurricane hits. His crews are excited about having this new tool, and they actually use the system before work to get ready for the day.

“The 3M sign management system is definitely a good product, and it has exceeded all of our expectations. I haven’t heard a bad word about it,” said Snedeker. “You always hear about failures—not successes—in government, but our citizens are definitely getting more bang for the buck.”





3M™ Roadway Maintenance Services Traffic Sign and Pavement Marking Upgrade and Maintenance

Early in 2008, the Maryland Department of Transportation advertised an innovative performance-based maintenance contract for delineators, traffic signs, and miscellaneous pavement markings. The work scope consisted of traffic sign and pavement marking upgrade and ongoing maintenance along state routes in District 1, Somerset County. The request for proposal included a multi-step competitive selection process with separate technical and price proposals required. 3M was awarded a seven-year contract in July of 2008, with work beginning immediately.

The traffic sign portion of the contract required an initial detailed inventory and assessment of existing traffic signs along included corridors. 3M conducted the inventory and assessment using unique mobile information collection methods over 128 miles of Maryland state roadways. After data collection and processing, 3M developed a work plan to replace those traffic signs that were deemed deficient according to contract requirements.

Many signs were replaced due to identified sign face damage, poor retroreflectivity performance, or legibility problems. In addition, signs were assessed to be vertical or leaning and any sign leaning by greater than six degrees was replaced or straightened. All maintenance activity associated with traffic signs was tracked and recorded in the 3M sign inventory database system for future use by Maryland DOT personnel.

All state roadways under the contract work scope were upgraded with new pavement markings after issuance of a notice to proceed. This work began in July and was completed in just 12 weeks. 3M installed more than two million feet of pavement markings, 6,400 snow-plowable pavement markers and serviced 2,500 traffic signs on all 128 miles of roadway in compliance with contract requirements.

PROJECT SCOPE

Agency	Maryland Department of Transportation
Issue	Sign and Pavement Markings Maintenance to Performance Standards
Distance	128 center line miles
Location	District 1 (Somerset County, MD)
Duration	7 years
Products	<ul style="list-style-type: none">• 3M™ Diamond Grade™ DG® Reflective Sheeting, including digitally printed guide signs• 3M™ Stamark™ High Performance Pavement Marking Tape Series 380I for skip lines, 3M-sourced thermoplastic for edge lines

For more information visit

www.3M.com/tss/rms



Installed signs and pavement markings displaying nighttime reflectivity. Inset: signs and pavement markings displaying daytime contrast.

3M will conduct ongoing monitoring and reporting through the entire seven-year contract term. Should pavement marking performance decline below an established threshold, 3M will automatically complete reapplication work to maintain pavement markings above the required performance levels. This process ensures that motorists along these routes will have a consistent and effective pavement marking delineation system to guide them at all times, day or night.

By September, 2008, all upgrade and maintenance activity to bring traffic signs and pavement markings in District 1 into compliance was essentially completed. Monitoring and reporting activity continues and any identified deficiencies requiring maintenance will be handled quickly and efficiently by 3M to keep corridors in full compliance with contract performance levels.



FOR IMMEDIATE RELEASE

CONTACT:

(Name)

(Phone)

(E-mail)

(Fax)

City of Urbana Announces New System to Manage Traffic Signs, Signals and Street Lights

(Urbana/Date) – Residents in Urbana can be confident that city traffic signs meet federal standards enacted to improve nighttime driving safety, and that other street infrastructure is well-maintained. Public Works director Bill Gray announced today that the City of Urbana has begun using a new, high-tech road asset management system to inventory, assess and maintain the city’s 8,052 traffic signs, 1,524 traffic signals and 3,923 street lights.

“According to the Federal Highway Administration, half of traffic accidents occur at night, although only about one quarter of travel takes place after dark,” said Gray. “The issue is safety. Research shows that brighter traffic signs help to reduce crashes and have a high benefit-to-cost ratio.”

Traffic signs are visible at night because they are “retroreflective” (meaning to return light back to its source and, in the case of signs, to drivers via their vehicle’s headlights). Because the retroreflective performance of signs degrades over time, standards were established by the Federal Highway Administration in 2008 and include a three-phased compliance schedule through 2018 for managing and replacing underperforming signs. The first milestone comes in January of 2012 when government agencies responsible for traffic signs must have a nighttime performance assessment and management method in place.

“Maintaining and improving city assets contributes to the outstanding quality of life we enjoy here in Urbana, and we want to provide the safest possible streets for our citizens and many visitors” said Gray. “In the long run, it’s more efficient to perform routine maintenance than to let infrastructure degrade to the point of needing costly repairs, so it’s a better use of city resources.”

-more-

Early in 2011, Urbana's Public Works Department chose a sign management system developed by 3M (a St. Paul, Minnesota-based diversified technology company) that uses GPS, GIS and mobile video-capture technology to build a sign management database. A decision was made to use the same system to inventory and manage traffic signals and street lights. As part of the project, 3M first completed the inventory work and initial sign condition assessments. After building the initial system, 3M provided its unique technology and training to enable Public Works staff to conduct ongoing assessment, maintenance planning, work orders and budgeting tasks to manage their signs effectively while keeping their sign management system current.

Though not surprised, Gray was pleased to learn that less than one percent of Urbana's traffic signs were found to be critical in terms of replacement. "Our mission has always been to maintain, construct and improve the City's infrastructure. Now we have a system in place to help us better manage our street assets and make data-driven maintenance decisions," he said.

About the City of Urbana

Urbana was founded in 1833 and is the county seat of Champaign County. With the help of four beautiful seasons, a richly diverse community, a Big Ten University, and a vibrant arts and entertainment scene, Urbana offers a variety of services, recreation and culture. Urbana has a year-round population of over 40,000 that more than doubles during the University academic year, and is nationally recognized as "*Tree City USA*" with over 100,000 trees. For more information, visit www.UrbanaIllinois.us.

About 3M

3M captures the spark of new ideas and transforms them into thousands of ingenious products. Its culture of creative collaboration inspires a never-ending stream of powerful technologies that make life better. 3M is the innovation company that never stops inventing. With \$27 billion in sales, 3M employs about 80,000 people worldwide and has operations in more than 65 countries.

For more information, visit www.3M.com or follow @3MNews on Twitter.

B. SAMPLE PROJECT INSTRUMENTS OR RELEVANT MATERIALS

FAST Tool Hardware & Accessories

Dell Latitude XT3 Convertible Tablet



- Intel Core i7 Processor 2.80 GHz 64 bit
- 4.0 GB 1333 MHz DDR3
- Windows 7 Pro OS
- 13.3" DayLight Viewable LCD
 - Pen and Touch Panel
 - 1366x768 Resolution
 - 340 Nits
- Backlit Keyboard
- 128GB Solid State Drive
- WiFi, Bluetooth, and LAN
- 65W AC Adaptor
- 90W DC Car Charger
- Meets partial MIL-STD-810G

Accessories

- Cannon Digital Camera
 - Camera Case
 - 4GB SD Card
- Laptop Bag
- GPS for FAST Tool

C. EXAMPLE OF FINAL PRESENTATION REPORT

Traffic Sign Inventory and Management System



Visibility and Safety

Pre-Delivery Meeting: March 14, 2013

Delivery / Training: March 19 & 20, 2013

- *Pre-Delivery Meeting Agenda*

1. Review Project Scope & Deliverables
2. Training Agenda
 - *Mike Ing will support delivery and Training*
3. Inventory Overview & Results
4. Web Site introduction
 - URL and Login sent

Review of Scope of Work

Routes/Areas:

- The has jurisdiction over signage on approx. 100 centerline miles of road.
- 3M has included 5,694 Signs and 3,359 Posts in the City's sign inventory, including regulatory, warning, guide, and street name
- Video capture of sign images
- Daytime and Nighttime condition assessments

Project Deliverables

- ❑ Video Capture and Post-Processing of data to build the sign & post inventory
- ❑ Initial Daytime and Nighttime condition assessments
- ❑ Sign Maintenance Website uploaded with the sign inventory data and condition rating information
- ❑ Two FAST tools with software to record changes to signs & posts in the field as they are upgraded or maintained
- ❑ Final sign inventory database in electronic format on a CD
- ❑ Initial Training on the Web-based Database and FAST tool
- ❑ One (1) year of hosting and maintenance on web-based database and FAST tool support
- ❑ All FAST tool software, licenses, software upgrades for two (2) years

Delivery and Training Schedule – Day 1 (3/19/13)

Morning Session (Office and Field Staff)

Website Features & Functions Presentation

- Solicit Existing Agency Work Process
- Website Introduction
- Introduce Website Icons and its Functionalities
- Demonstrate Tri-View and Sketching Tool
- How to view Signs and Supports in Sign Viewer (Details of each Asset)
- Using Query Builder
- User Administration
- Creating New Support and Sign, Replace, and Relocate function.
- Creating Tasks

FAST Tool Features & Functions Presentation

- FAST Tool Hardware Orientation
- FAST Tool Introduction
- Introduce FAST Tool Icons and Functionality
- Synching FAST Tool
- Demonstrate Tri-View and Sketching Tool
- Viewing Signs and Supports in Sign Viewer
- Using Query Builder
- Creating New Support and Sign, Replace, and Relocate function
- Creating Tasks

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Morning Session Continued (Office and Field Staff)

Task Training: Web Site Hands-On

- Modifying Existing Sign
- Create a Default Work Order
- Create New Task
- Add New Support
- Add New Signs
- Replace Signs
- Relocate Supports
- Run Queries
- Export Reports

Afternoon Session (Field Staff)

Task Training: In Field - Hands-On

- Run Queries
- Activate GPS
- Create GPS Track Log
- Displaying Pop Icons for Signs
- Create a Default Work Order
- Modify Existing Sign
- Create New Task
- Add New Support
- Add New Signs
- Adding New Photo
- Adding New Assessment
- Replace Sign
- Relocate Support
- Delete Support/Sign



Delivery and Training Schedule – Day 2 (3/20/13)

Morning Session (Field Staff)

Task Training: In Field - Hands On

- Maintenance Backlog Data Capture
- Current Work Orders
- New Assessments
- FAST Tool Question and Answer Session
- Accessing Tech Support at 3M
- Synch FAST Tools

Afternoon Session (Office Staff)

Task Training: In Office – Hands On

- Backlog Data Entry
- Run Administrative Queries for completed work.
- Create new real work orders
- Verify Completed work
- Accessing Tech Support at 3M
- Question and Answer Session

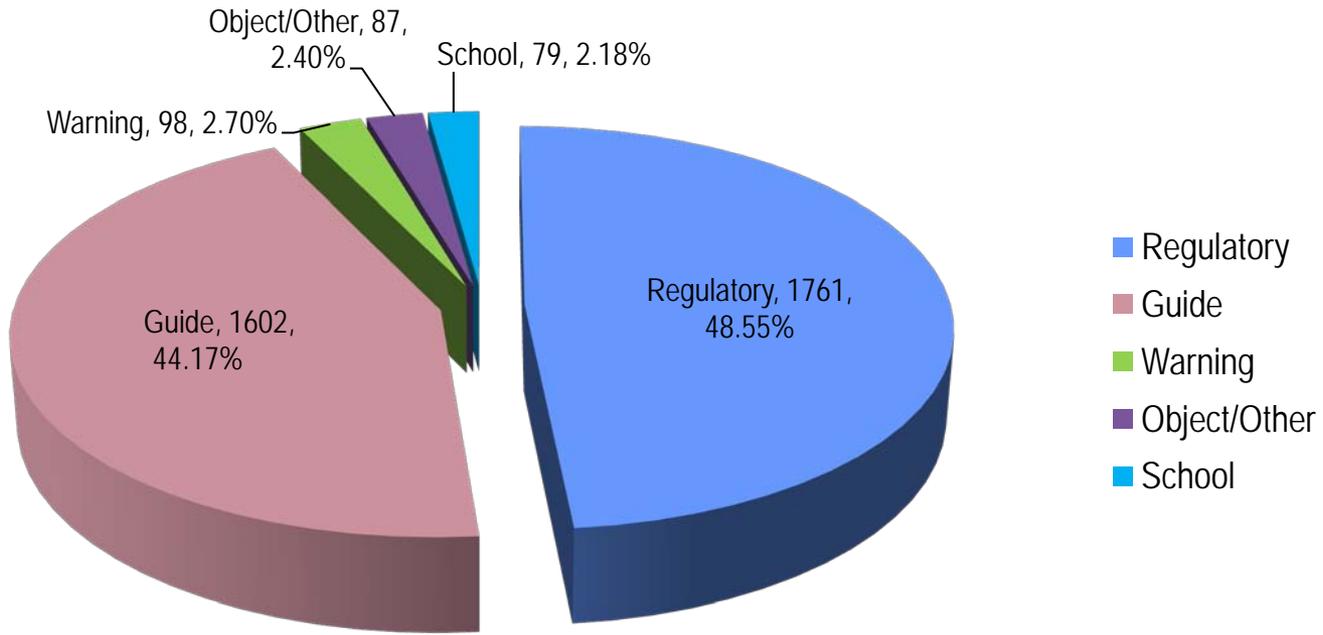
Inventory Summary and Results:

Condition Assessment Report - Critical Rated Signs

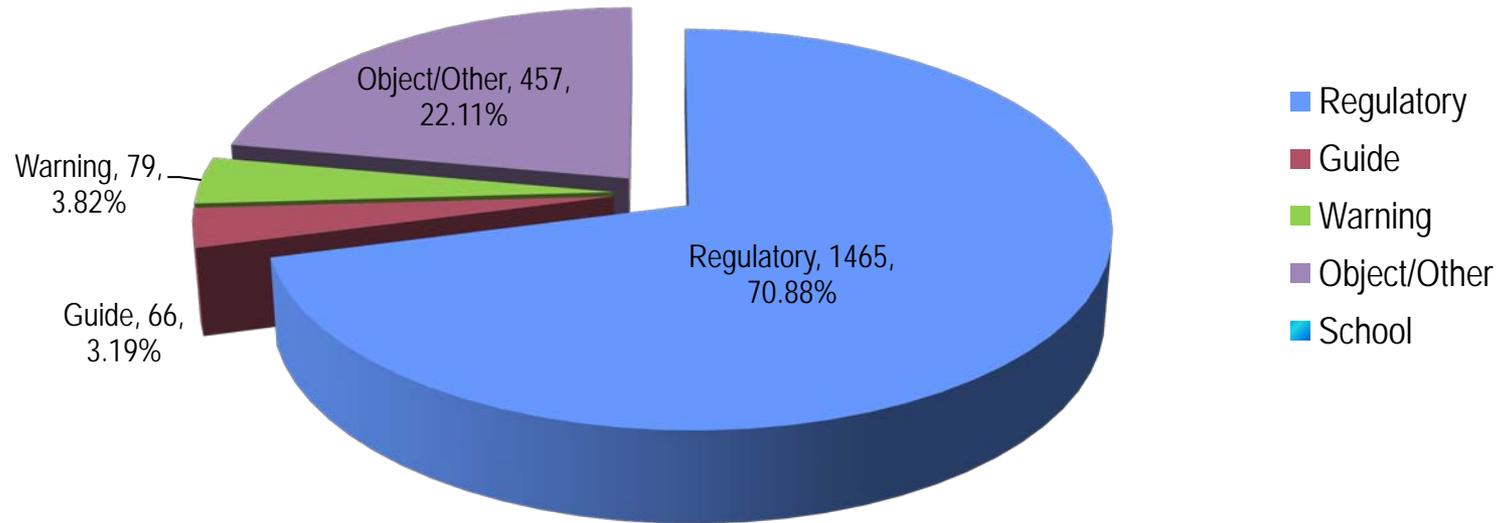


Post ID	Sign ID	MUTCD Code (Federal or State Specific)	Width (inches)	Height (inches)	Face Direction	Grid Location	Sign Face Condition	Assessment Type	Inspection Date	Reason for Critical Rating
5	9	W-NS-001	30.0	30.0	E	A1	Critical	Night	02/26/2013	Reflectivity
29	53	W-NS-001	30.0	30.0	S	A1	Critical	Night	02/26/2013	Reflectivity
62	101	O-NS-001	12.0	18.0	W	A2	Critical	Night	02/26/2013	Reflectivity
90	151	R-NS-001	18.0	24.0	E	A1	Critical	Day	02/07/2013	Obstructed
91	152	D3	32.0	9.0	E	A1	Critical	Day	02/07/2013	Obstructed
97	164	R-NS-001	18.0	24.0	N	A1	Critical	Day	02/07/2013	Faded
100	173	R-NS-010	12.0	18.0	N	A1	Critical	Day	02/07/2013	Discolored
102	176	O-NS-001	12.0	18.0	N	A2	Critical	Night	02/27/2013	Reflectivity
121	207	R32	12.0	18.0	E	A1	Critical	Night	02/27/2013	Reflectivity
152	260	R32	12.0	18.0	N	A2	Critical	Night	02/28/2013	Reflectivity
154	264	O-NS-001	12.0	18.0	E	A2	Critical	Night	02/27/2013	Reflectivity
165	279	O-NS-001	12.0	18.0	E	A2	Critical	Night	02/27/2013	Reflectivity
174	296	R32	12.0	18.0	N	A2	Critical	Night	02/28/2013	Reflectivity
177	300	O-NS-001	12.0	18.0	E	A2	Critical	Night	02/27/2013	Reflectivity
179	304	R1-1	24.0	24.0	S	A3	Critical	Day	02/08/2013	Faded
202	351	O-NS-001	12.0	18.0	S	A2	Critical	Night	02/27/2013	Reflectivity
212	367	D3	36.0	9.0	N	A1	Critical	Day	02/08/2013	Obstructed
212	369	R-NS-001	18.0	24.0	N	A3	Critical	Day	02/08/2013	Obstructed
218	381	O-NS-001	12.0	18.0	E	A4	Critical	Day	02/08/2013	Faded
220	385	R-NS-001	18.0	24.0	W	A1	Critical	Day	02/08/2013	Graffiti
228	396	R2-1(35)	24.0	30.0	E	A1	Critical	Night	02/27/2013	Reflectivity
239	415	R-NS-001	18.0	24.0	N	A1	Critical	Day	02/08/2013	Obstructed
242	419	R-NS-001	18.0	24.0	E	A1	Critical	Day	02/08/2013	Graffiti
255	446	R2-1(35)	24.0	30.0	N	A1	Critical	Night	02/27/2013	Reflectivity
258	452	O-NS-001	12.0	18.0	E	A2	Critical	Night	02/27/2013	Reflectivity
261	457	W-NS-001	30.0	30.0	E	A1	Critical	Night	02/27/2013	Reflectivity
272	477	O-NS-001	12.0	18.0	E	A2	Critical	Night	02/27/2013	Reflectivity
275	482	O-NS-001	12.0	18.0	S	A2	Critical	Night	02/27/2013	Reflectivity
306	534	R-NS-001	18.0	24.0	N	A1	Critical	Day	02/11/2013	Faded
311	546	O-NS-001	12.0	18.0	E	A4	Critical	Night	02/27/2013	Reflectivity
314	550	O-NS-001	12.0	18.0	N	A2	Critical	Night	02/27/2013	Reflectivity

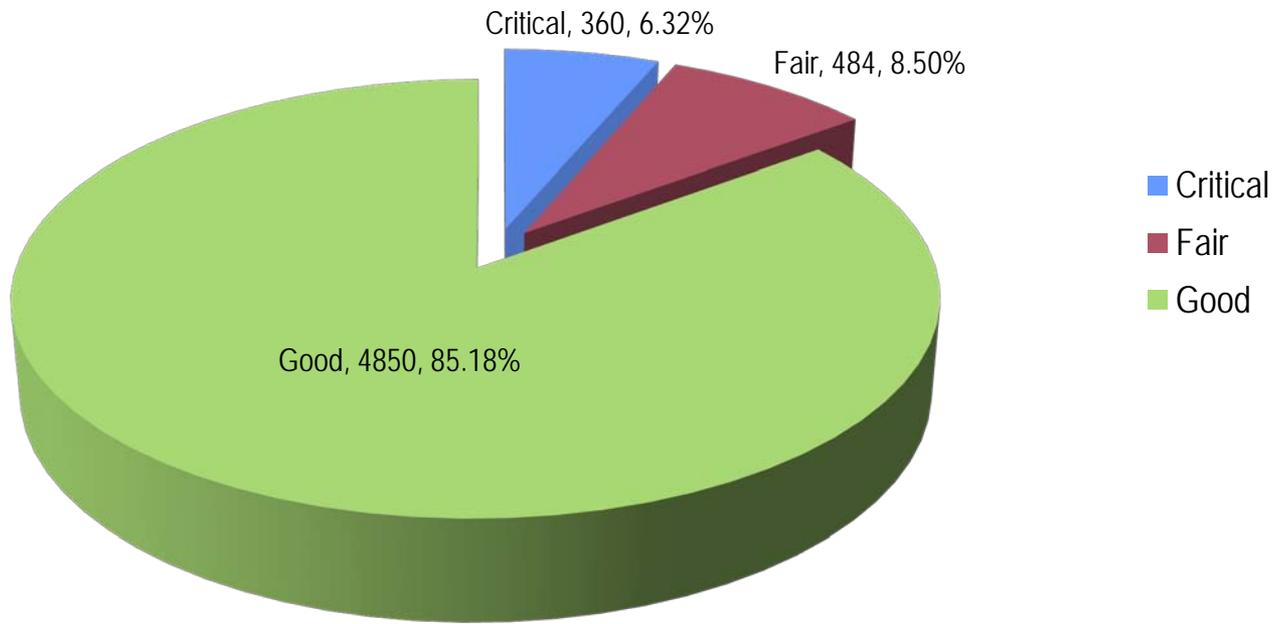
Standard MUTCD Sign Series



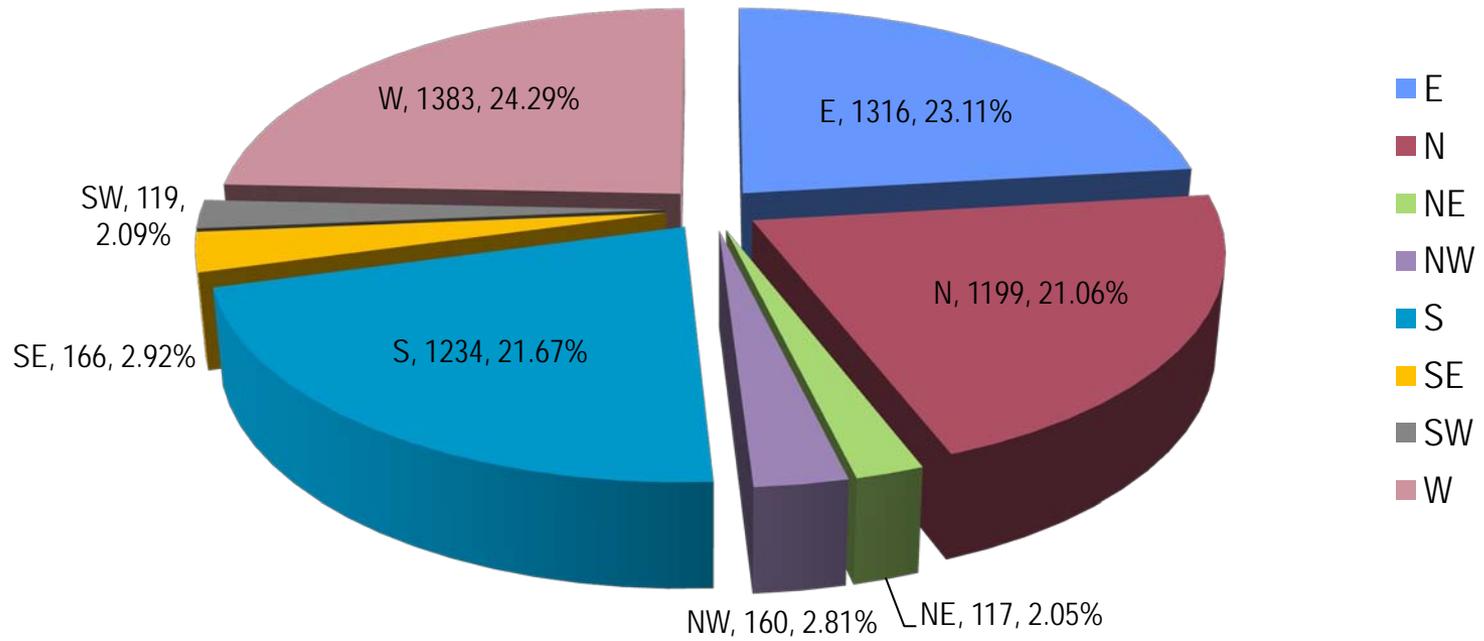
Modified non-standard Sign Series



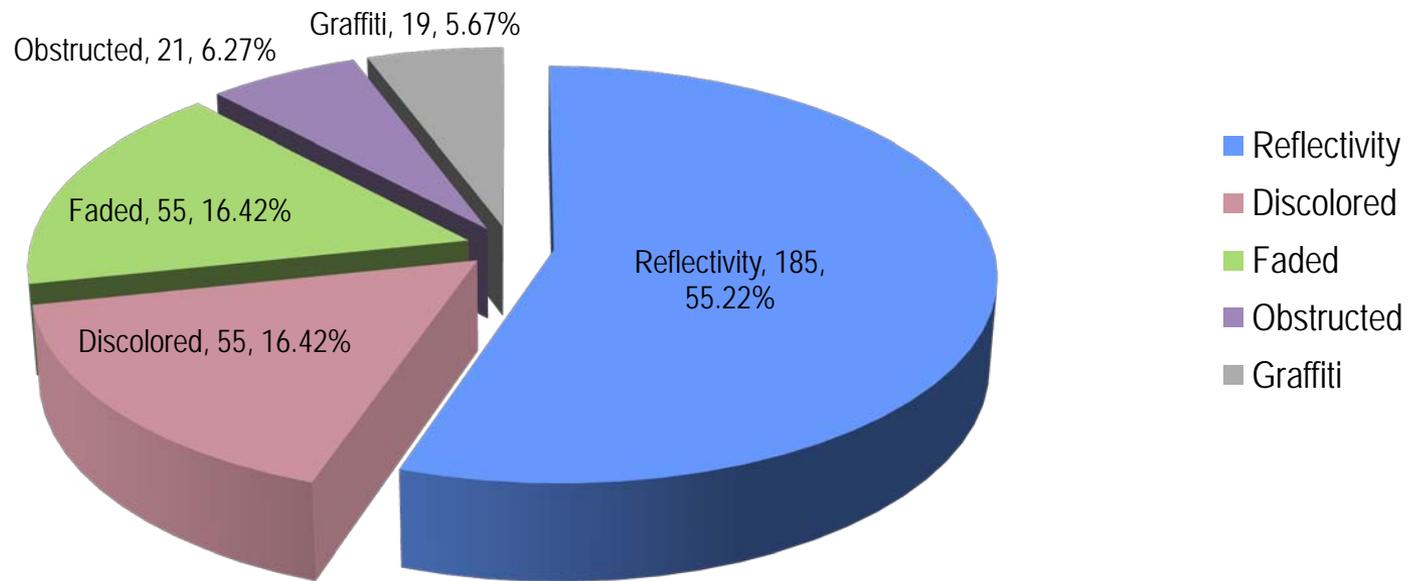
Sign Conditions



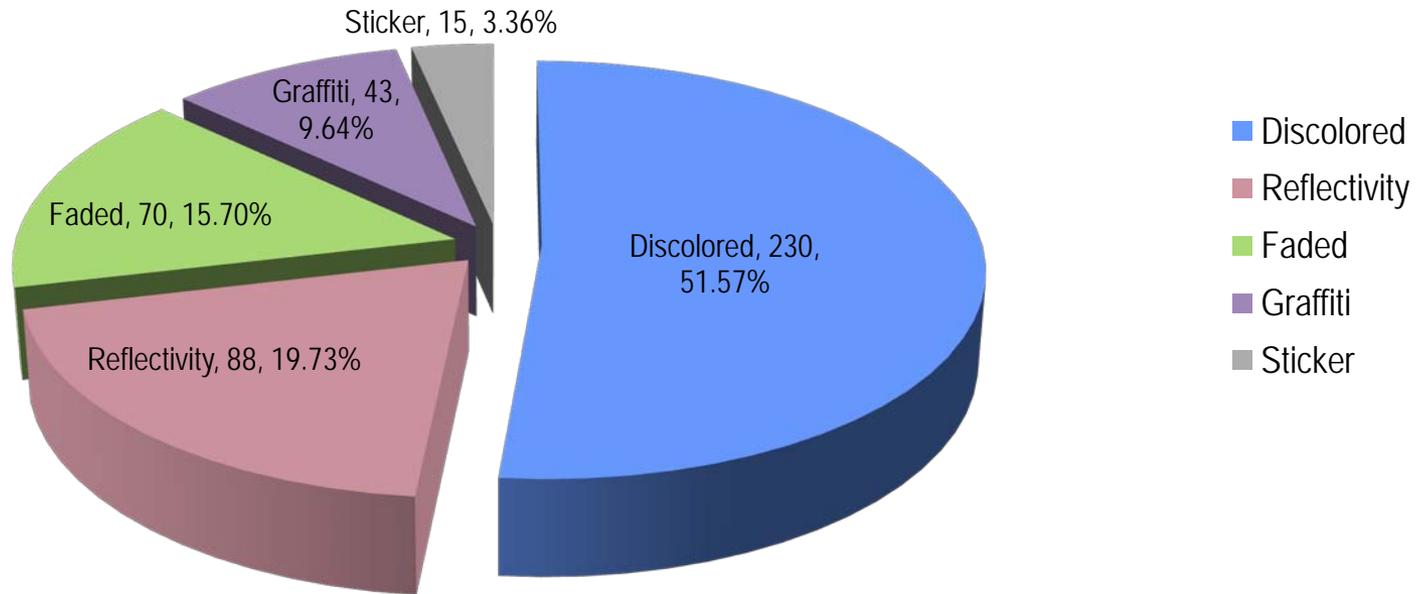
Sign Face Direction



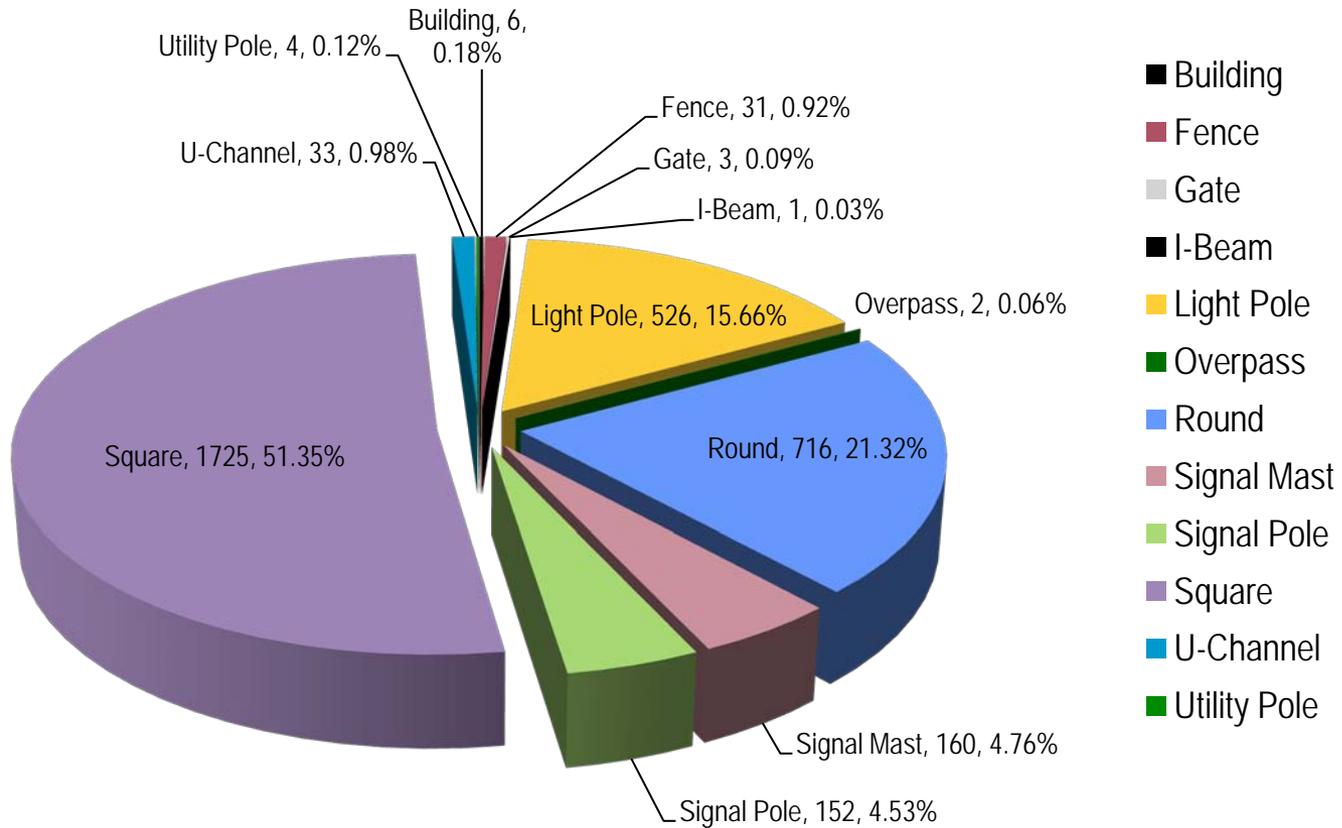
"Critical" Defects - Signs



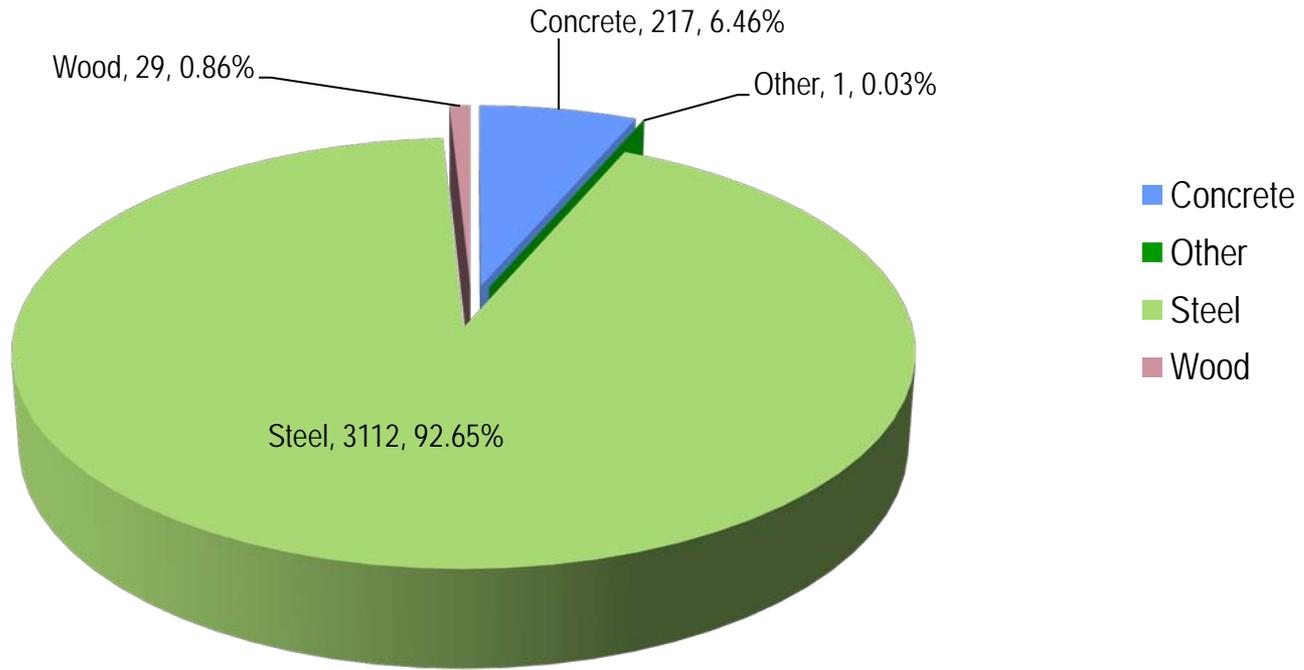
"Fair" Defects - Signs



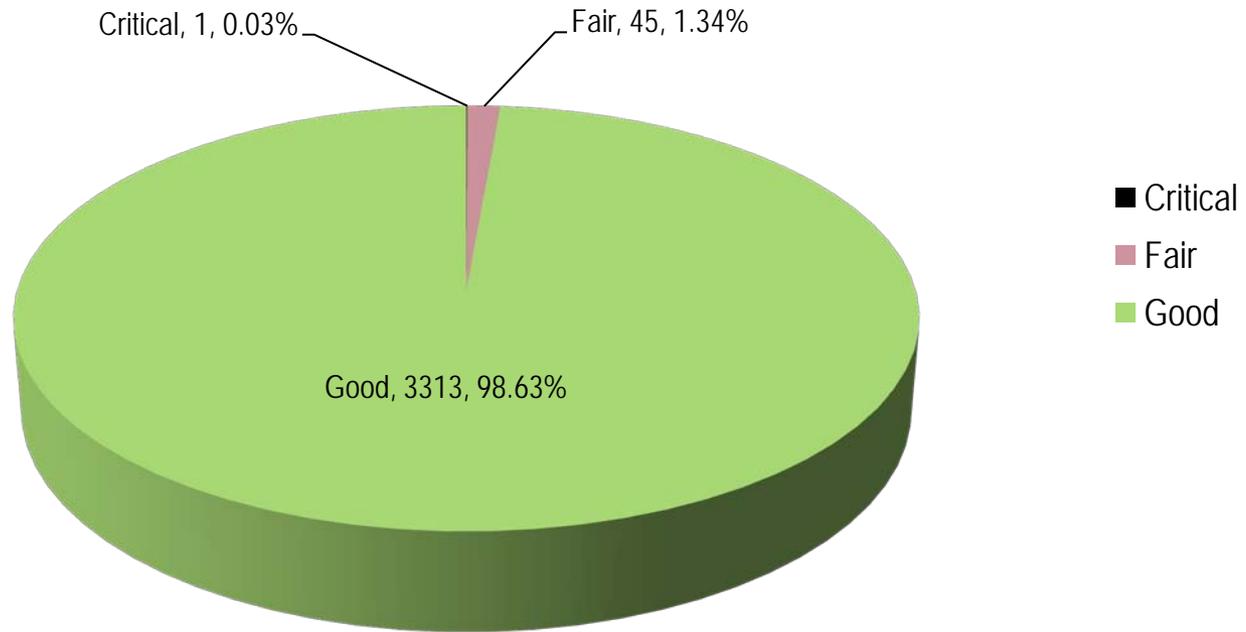
Post Type



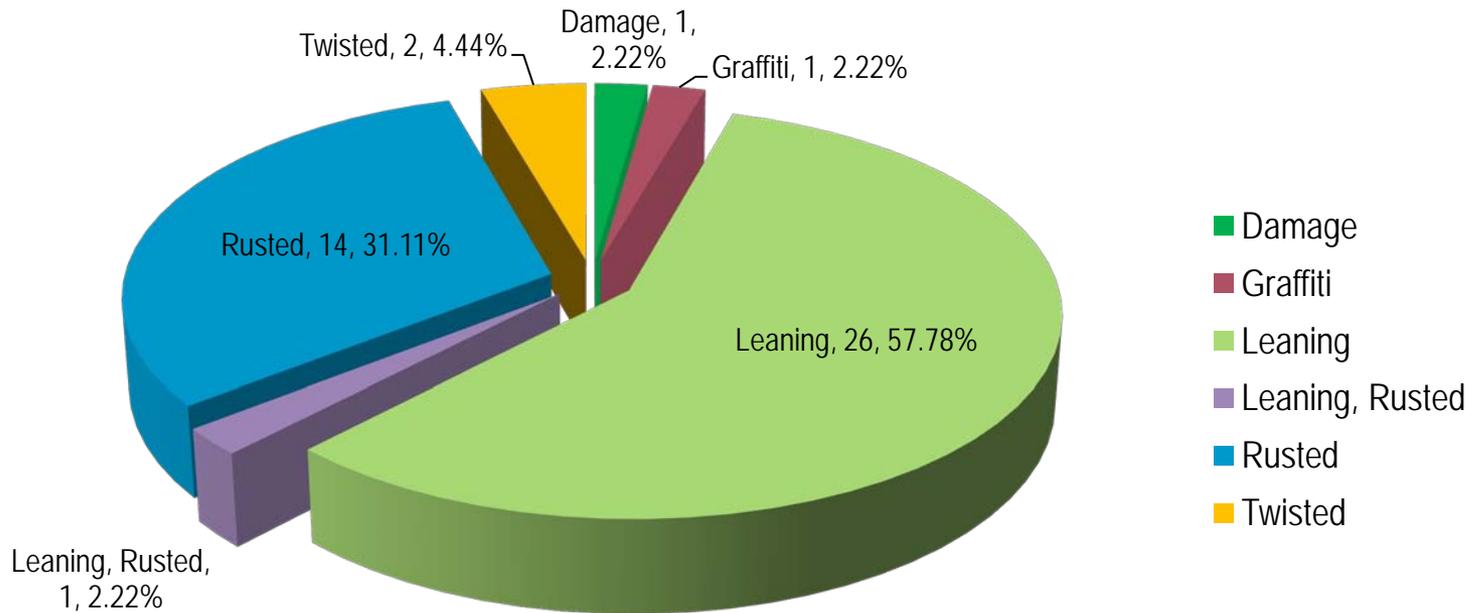
Post Material



Post Condition



"Fair" Defects - Posts



Web Site Demo - Next

The screenshot displays the 3M Sign Management System web application. The browser address bar shows the URL <https://rms.3m.com/AssetManagement/>. The application header includes the 3M logo, the text "Sign Management System", and a "Welcome 3M" message with a "Logout" link. A navigation bar contains icons for home, location, edit, and help. Below the header, a dropdown menu is set to "BellflowerCA" and an "Auto-update extent" checkbox is checked. The main area features a map of Bellflower, CA, with a grid of small square icons representing sign locations. A sidebar on the left provides navigation options: "Streets", "Imagery", and "More...". The "Sign Viewer" panel on the right shows details for four selected signs:

- Sign 1:** D3 Street Name. Install: 7 Aug 1988. Replace: 0. Facing Dir: E. Dim: 30 x 9. Tasks: 0.
- Sign 2:** D3 Street Name. Install: 7 Aug 1988. Replace: 0. Facing Dir: S. Dim: 36 x 9. Tasks: 0.
- Sign 3:** R1-1 Stop. Install: 7 Aug 1988. Replace: 0. Facing Dir: E. Dim: 24 x 24. Tasks: 0.
- Sign 4:** Sign Support Round. Install: None. Base: None. Tasks: 0.

The bottom of the interface shows a scale bar (0.5 mi, 1 km), a "Page 87" indicator, and a "1 of 2 selected support(s)" message.



D. DRAFT CONTRACT

TRAFFIC SIGNS INVENTORY AND MANAGEMENT SYSTEM AGREEMENT

This Professional Services Agreement ("Agreement") dated and effective April , 2013 is made by and between 3M Company through its Traffic Safety and Security Division with a principal place of business at 3M Center, St. Paul, MN 55144 ("3M") and the City of Chattanooga, Tennessee, located at 101 East 11th Street, Suite G13 Chattanooga, Tennessee 37402 ("City"). 3M and the City may be individually referred to as a "Party" or collectively as the "Parties."

1. Scope of Agreement. The City is seeking to hire a consultant to conduct a Retroreflectivity Sign Inventory for all City maintained streets within City limits. The project includes the provision of an Internet based database containing sign inventory data. These services are more fully described in the Scope of Services document which is attached to this Agreement as Exhibit A.
2. Price and Payment Terms. The City agrees to pay 3M for all services and deliverables hereunder in accordance with the Scope of Services. The value for the services and deliverables in this Agreement is \$_____. [or as otherwise agreed by the Parties.
 - 2.1. The lump sum price set forth therein includes all applicable Federal, State and local taxes and duties including, but not limited to, sales, use and value-added taxes, arising out of or relating to 3M's delivery of goods or services to the City, or 3M's performance of this Agreement.
 - 2.2. All invoices shall clearly reference this Agreement and contain a unique invoice number. All invoices shall include the "Amount Previously Billed," the "Amount of this Invoice," and the "Total Amount Billed to Date" where applicable.
 - 2.3. 3M may select Automated Clearing House Credits ("ACH funds transfer"), as the means of settlement. With regard to such ACH funds transfer, a payment from The City to 3M shall be considered timely with respect to any payment due date contained herein if the ACH funds transfer is initiated on or before the due date and completed no later than four (4) business days after such payment due date. The City shall not be in breach of these terms and conditions, or suffer any loss of discount or other penalty, with respect to an ACH funds transfer that was initiated properly and timely by The City to the extent its completion is delayed because of failure or delay by the ACH funds transfer system, the operation of an ACH funds transfer system rule which could not be anticipated by The City, or rejection by 3M's bank.
3. Key Personnel. For purposes of this Section, "Key Personnel" are defined as those individuals who are mutually recognized by The City and 3M as essential to the successful completion and execution of the Agreement.
 - 3.1. During the Term of the Agreement, 3M shall not, without consultation with the City, remove any key personnel from the Project or reassign such individual except (i) for a bona fide promotion or resignation, or, (ii) if 3M reasonably determines that the individual has failed to adequately perform

- his or her duties; or, (iii) incapacitation; or (iv) if the function or position is no longer required under the provisions of this Agreement.
- 3.2. If any one of 3M's Key Personnel identified in Section 3.5 below is reassigned, becomes incapacitated, or ceases to be employed by 3M and therefore becomes unable to perform the assigned functions or responsibilities, 3M shall promptly replace such person with another qualified person after consultation with the City, which shall not be unreasonably withheld. In any such event, 3M shall provide reasonable notice to the City, taking into account the status of the Project and the schedule pertaining thereto. At the beginning of each new phase, if any, or at the milestone for a deliverable, if any, the parties shall agree on any modifications to 3M's key personnel as set forth in this Agreement, taking into account career development, the best interests of the Project and other similar issues.
- 3.3. 3M's Key Personnel are: (to be determined)
4. 3M Asset Management System. The 3M Asset Management System (the "AMS Service") is a web browser-based service accessed via the Internet enabling the uploading, mapping, viewing, storage and downloading of GIS data and related sign and signal inventory information. During the term of this Agreement, the City may access and use the AMS Service for the City's own internal business use for the sole purpose of creating, managing and maintaining sign and signal inventories in the City's jurisdiction.
- 4.1. The City is solely responsible for obtaining and maintaining, at its own cost and expense, an Internet connection suitable for the purpose of accessing and using the AMS Service.
- 4.2. 3M will provide The City with usernames and passwords for use by The City's employees in accessing the AMS Service. The City shall be responsible for maintaining the confidentiality of such usernames and passwords, and shall be responsible for all access to the AMS Service all use of the AMS Service thereby.
5. Delivery. Deliverables shall be provided in accordance with Statement of Work.
6. Inspection. 3M will permit the City's Representative, or a duly authorized representative, to inspect and audit all services, material and other data and records directly connected with this Agreement. The City will provide advance written notice of intent to audit and access will be granted at mutually convenient times. Any audit or inspection will be subject to 3M's facility safety and security requirements. The representative shall be required to sign a 3M confidential nondisclosure agreement as will be mutually negotiated between the Parties.
- 6.1. 3M shall maintain project records and other evidence pertaining to the costs incurred in accordance with all City document retention regulations. The records and documents subject to audit do not include the disclosure of 3M's costs, processes or any other proprietary information. These records and any and all copies remain the property of 3M. Subject to the confidentiality requirements of Section 15.3 of this Agreement, 3M shall make the records available to the City at 3M's office, at reasonable times, for the Term of this Agreement and for a relevant period of time after the expiration or termination of the Prime Contract.

7. Changes and Change Order Process Contacts between the City and 3M regarding the Agreement price, schedule, Statement of Work or the Terms and Conditions shall be made only with the party's authorized contractual representative.
 - 7.1. Either Party may issue a written request (a "Change Request") to the other setting out any addition, removal, amendment or variation to the description, scope or delivery of 3M Software or 3M services to be provided under this Agreement, including but not limited to changes to requirements or specifications regarding the functionality or performance of the 3M Software or changes specifically required by new or amended State laws or regulations (a "Change").
 - 7.2. Until such time as a Change Request is executed by the parties, the City and 3M shall continue to perform their respective pre-existing obligations as set forth under the Subcontract as if no Change Request had been made, but neither party shall be required to perform any work related to a Change Request, or incur any additional costs, or be obliged to pay any additional charges related to a Change Request.
8. Standard of Care 3M shall use reasonable care to reflect requirements of all applicable laws, rules or regulations of which 3M has knowledge or about which The City specifically advises in writing, which are in effect on the date of the Prime Agreement. 3M intends to render the services under this agreement in accordance with generally accepted professional standards but makes no other warranty either express or implied.
9. Termination for Convenience The City shall have the right to terminate this Agreement, in whole or in part, at any time, without cause for the City's convenience. In the event of such termination, The City shall provide immediate written notice to 3M of the termination. Upon receiving notice of such termination, 3M shall:
 - i. Stop all services and suspend delivery of 3M deliverables on the date and to the extent specified;
 - ii. Place no further contracts hereunder except as may be necessary for completing such portions of the Agreement as have not been terminated;
 - iii. Terminate all contracts to the extent that they may relate to portions of the Agreement that have been terminated; and
 - iv. Protect all property in which The City has or may acquire an interest and deliver such property to The City.
10. Termination for Default Either the City or 3M may terminate this Subcontract Agreement if the other party materially breaches this Subcontract Agreement by giving thirty (30) days prior written notice and an opportunity to cure. If the breaching party fails to cure the breach to the non-breaching party's objective satisfaction or commence and diligently pursue efforts to cure the breach if the breach cannot be cured in 30 days during the notice period, then the Subcontract will terminate on the last day of the notice period.
11. Indemnification
 - 11.1. General Indemnity. 3M shall indemnify and hold harmless the City and its respective officers, directors, and employees from and against and all liability for third party losses, claims, causes of action, suits, demands,

injuries and damages (including, but not limited to, reasonable attorney's fees and costs) (collectively, "Third Party Claims") to the extent such Third Party Claims are for (i) personal injury damages, including death; or (ii) damages to real property or tangible personal property (excluding data), and further provided the foregoing Claims are caused by the negligent or willful or malicious acts or omissions of 3M, its employees, or its lower-tier Subcontractors acting under 3M's reasonable control in performance of their respective obligations under this Agreement.

- 11.2. Intellectual Property Infringement Indemnity. 3M shall indemnify The City and, at 3M's own expense, 3M shall defend any suit brought against The City for infringement of United States intellectual property rights to include patents, trademark, trade secret, or copyrights, protected by state or federal law to the extent that the claim of infringement is alleged to relate to or arise from 3M's, The City's use of any 3M Software provided by 3M under this Agreement (an "Infringement Claim").
 - 11.2.1. Exclusions from 3M's Obligations. 3M's obligations under Section 11.2 shall not apply to the extent a claim arises from (i) The City's unlicensed or unauthorized modification of the 3M Software; (ii) The City's failure to use corrections or enhancements delivered by 3M that are designed to avoid the infringement; (iii) The City's use of the 3M Software in combination with any product or information not owned, developed, delivered or recommended by 3M; or, (iv) any modification of the Source Code that is not expressly authorized by 3M.
- 11.3. Indemnification Process. In the event that a Third Party Claim or Infringement Claim is brought against the City entitled to indemnification under Sections 11.1 or 11.2 above, the City shall give written notice promptly after the City has knowledge of the claim. The City's failure to give notice as required by the previous sentence will not relieve 3M of its indemnification obligations except to the extent that 3M can demonstrate prejudice or other injury as a result of such failure. 3M shall control the defense of any indemnified claim. The City shall cooperate in the defense of indemnified claims. The City may participate in such defense through its own legal counsel at its own cost and expense. 3M shall not settle any indemnified claim without the prior written consent of the City, to the extent that the City has responsibility or liability for any portion of such settlement. Consent shall not be unreasonably withheld, denied, or delayed.
- 11.4. Limitation of Liability. EXCEPT FOR A VIOLATION OF SECTIONS 13 OR 14, NEITHER PARTY WILL, UNDER ANY CIRCUMSTANCES, BE LIABLE TO THE OTHER PARTY FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO THE SERVICES, THIS AGREEMENT OR THE TERMINATION OF THIS AGREEMENT. THIS LIMITATION OF LIABILITY APPLIES REGARDLESS OF THE LEGAL THEORY UNDER WHICH SUCH DAMAGES ARE SOUGHT.

12. Insurance. 3M will obtain the following minimum insurance coverage, and maintain it at all times throughout the life of this subcontract.

12.1.1. Comprehensive General Liability Insurance or Commercial General

Liability Insurance ("CGL") including:

- 12.1.1.1. Premises and Operations
- 12.1.1.2. Personal Injury
- 12.1.1.3. Blanket Contractual -- Broad Form (or Designated Contractual, identifying this Contract)
- 12.1.1.4. Independent Contractors

The CGL insurance must be written on an occurrence basis and must have limits of at least One Million Dollars (\$1,000,000) for any one person in a single accident and totaling not less than One Million Dollars (\$1,000,000) per occurrence for bodily injury; One Million Dollars (\$1,000,000) per occurrence for property damage and Ten Million Dollars (\$10,000,000) annual aggregate limit and for products/completed operations.

12.1.2. Business Auto Insurance, applying to owned, non-owned and hired vehicles, with a limit of at least One Million Dollars (\$1,000,000).

12.1.3. The terms used in Paragraph Workers' Compensation and Employer's Liability Insurance, with the Workers' Compensation insurance as required by law. The Employer's Liability insurance must have a minimum limit of One Million Dollars (\$1,000,000) per accident.

12.2. The terms used in paragraph 12.1 to specify the required insurance are to be interpreted according to the ordinary usage of the insurance industry. The policies obtained and maintained to provide the specified insurance must provide that the required coverage and limits cannot be canceled or changed without at least the notice as provided in accordance with policy provisions. Before beginning any Work under this Contract, 3M will provide an insurance certificate showing compliance with the insurance specifications.

13. Intellectual Property Rights. Except as expressly provided herein, nothing in this Agreement will be construed as to transfer any right, title, or interest in the intellectual property of one party to any other party. Any intellectual property created in the performance of this Agreement solely by the personnel of one party shall be or remain the sole and exclusive property of that party, regardless of whether it is completed or reduced to practice thereafter. Except with regard to 3M Software and all modifications, enhancements, alterations or derivative works thereof, regardless of authorship shall remain the sole property of 3M.

14. Confidentiality 3M Confidential Information means information or tangible materials, whether or not designated by 3M as confidential, pertaining to: (i) general business information regarding the Project, technical information regarding 3M Traffic Safety Systems ("TSS") products (ii) any other aspects of 3M's business relating to products, including without limitation marketing, sales, customers and non-public financial data; (iii) 3M Systems, Access Codes, and Passwords.

The City will: (a) keep all 3M Confidential Information confidential; (b) use 3M Confidential Information only as necessary to perform The City's obligations under this Agreement; and (c) assure that its employees, agents abide by these confidentiality obligations. If the City receives any tangible materials constituting 3M Confidential Information, then The City will not analyze those materials without 3M's

prior written consent in each instance and The City will return those to 3M, on 3M's request or at the Term's end. 3M Confidential Information does not include information that is: (x) available to the public without fault of The City; (y) known to The City prior to its receipt from 3M as evidenced by The City's written records; or (z) available to The City from another source without breach of any agreement or violation of law. If required by judicial or administrative process to disclose 3M Confidential Information, The City agrees to promptly give 3M notice, allow 3M reasonable time to oppose such process, and seek to have the third party treat the information confidentially to the extent legally permissible.

15. Not Used

16. Governing Law; Disputes. This Agreement will be governed by the laws the State of Tennessee without regard to its conflict of law rules. The 1980 United Nations Convention on Contracts for the International Sales of Goods will not govern this Agreement. Any and all disputes arising under this Agreement between the parties must be resolved in the following order: (a) by good faith negotiations conducted within ten (10) days of a request for such negotiations; (b) if those negotiations are unsuccessful, by non-binding mediation within thirty (30) days of a request for mediation at a location acceptable to both parties using a neutral mediator having experience with the industry in accordance with the rules of the Center for Public Resources (with costs shared equally); or (c) as a last resort if mediation is unsuccessful, by litigation. This Section 16.0 will not preclude either party from taking other action if it is necessary to prevent immediate, irreparable harm to that party's interests. Pending final resolution of a dispute pursuant to this Section 16.0, the City shall continue to make timely payments of undisputed amounts owed to 3M in accordance with Section 2 and 3M will continue to perform its undisputed obligations under this Agreement.

17. Force Majeure. A party shall not be in breach/default of this Agreement and shall not be liable to the other party or to the State if its failure to perform was due to causes beyond its reasonable control of, and occurred without any fault or negligence on its part. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the State in its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, court actions, governmental regulatory or administrative actions, temporary or permanent injunctions, or other judicial orders or actions, whether the case, suit or proceeding is initiated by a party or by a third party. In each such event set out in this Section, the non-performing party shall be excused from any further performance or observance of the obligation(s) so affected for as long as such circumstances prevail and such party continues to use its commercially reasonable efforts to recommence performance or observance whenever and to whatever extent possible without delay, provided such party promptly notifies the other party in writing of the inception of the excusable failure occurrence, and also of its abatement or cessation.

Each party shall use its reasonable efforts to minimize the duration and consequences of any failure of or delay in performance resulting from a Force Majeure event and to promptly notify the other party of any actual or potential Force Majeure event.

18. Relationship of Parties. The parties are independent contractors and nothing contained in this Agreement shall be deemed or construed to create a partnership, joint venture, agency or other relationship other than that of supplier and customer.

Each party shall be solely responsible for payment of all compensation owed to its respective employees, as well as for its respective employment related taxes.

19. Agreements and Assignments. 3M agrees to obtain the City's written approval before assigning any portion of the Services covered under this Agreement; provided, however, that this limitation shall not apply to 3M's purchase of standard commercial supplies, raw materials, or individual contract workers. This Agreement shall not be assigned or delegated by 3M without the prior written consent of the City, whose written approval or consent under this Section 21.0 shall not be unreasonably withheld, delayed, or denied.
20. Compliance with Laws. 3M shall comply with the applicable provisions of any applicable federal, state or local law or ordinance, or order, rule or regulation issued thereunder with regard to their respective performance under this Agreement and their respective contractual obligations under the Prime Contract.
21. Non-Discrimination. 3M, in performing under this contract, shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, creed, colour, age or national origin, or handicap, or sex, nor otherwise commit an unfair employment practice. 3M further agrees that this article will be incorporated by 3M in all contracts entered into with sub-contractors or any labour organizations, furnishing skilled, unskilled and craft union skilled labour, or who may perform any such labour or services in connection with this contract.
22. Publicity and Disclosure. The parties shall coordinate with and obtain prior written approval from one another for any news release, public announcement, advertisement or other form of publicity regarding this Agreement. In no event shall either party use a proprietary mark belonging to the other party without having first received the prior written approval of the other party.

ACCEPTED AND AGREED:

3M COMPANY

THE CITY OF CHATTANOOGA

By:

By:

Title:

Title

Date:

Date:

EXHIBIT A
SCOPE OF SERVICES

E. EXAMPLE OF 3M™ FAST TOOL SOFTWARE LICENSE

3M TRAFFIC SAFETY SYSTEMS DIVISION SIGN DATA MANAGEMENT TOOLS SOFTWARE LICENSE AGREEMENT

This Software License Agreement (“Agreement”) by and between 3M Company (“3M”) and *City of Chattanooga, TN* (“Licensee”) is effective upon Licensee’s receipt of the Software (“Effective Date”).

In consideration of the exchange of promises herein, and other good and valuable consideration, the sufficiency of which is hereby acknowledged, and intending to be legally bound, the parties agree as follows:

1. License. 3M grants Licensee a non-exclusive, non-transferable, limited license to use the 3M Sign Data Management Tools software (“Software”) on a single PC for the limited purposes set forth herein. Upon the expiration of the warranty period, 3M will provide Licensee with a maintenance agreement which will provide revisions and updates to the Software. Such revisions and updates shall be deemed Software for the purposes of this Agreement and shall be subject to the terms and conditions herein. This license pertains to the Software in object code form only. Licensee has no right or license to the Software in source code form, and Licensee shall not reverse engineer, decompile, disassemble or otherwise attempt to gain access to the Software. All rights to the Software not expressly granted to Licensee in this Agreement are reserved to 3M.
2. Use Restrictions. Licensee shall use the Software for its internal business purposes only, and shall not sell, rent, lend, lease, sublicense, or distribute the Software, or modify or create derivative works thereof. Licensee may make a single copy of the Software for archival purposes only.
3. Term. This Agreement is effective upon the Effective Date and expires upon the expiration or termination of the Contract for *Traffic Sign Retroreflectivity Study* between Licensee and 3M.
4. Termination. 3M may terminate this Agreement if Licensee fails to cure a material breach thereof within ten (10) days of receipt of written notice of such breach. In addition, 3M may terminate this Agreement, with or without cause, upon thirty (30) days written notice to Licensee.
5. Effect of Termination. Upon expiration or termination of this Agreement, all right and license of Licensee to use or possess the Software shall terminate immediately and Licensee shall promptly delete or destroy all copies of the Software stored in any medium. Upon request, Licensee will provide 3M with written certification of the foregoing.
6. Warranty. The Software shall perform the functions described in 3M’s Software documentation for a period of 90 days. 3M’s sole liability and Licensee’s exclusive remedy for deficiencies in the Software that cause failures of the described functions will be to correct the deficiencies with revised software to be provided free of charge.
7. DISCLAIMER OF WARRANTIES. 3M disclaims all other warranties, express or implied, regarding the software including but not limited to the warranties of merchantability and fitness for a particular purpose. The software is not warranted to be error-free or

- to run uninterrupted. Licensee assumes any and all risk regarding its use of the software.
8. **LIMITATION OF LIABILITY.** 3M will not be liable for any special, incidental, indirect, or consequential damages (including, without limitation, damages for personal injury, loss of business profits, business interruption, loss of data or any other pecuniary loss) arising out of the use of or inability to use the software, even if 3M has been advised of the possibility of such damages. In any case, the entire liability of 3M under this agreement, or otherwise arising from the software and licensee's use thereof, shall be limited to the amount actually paid by licensee for the software.
 9. **Indemnification.** Licensee agrees to indemnify and hold harmless 3M, its directors, officers, shareholders, employees, agents and assigns, from all claims, actions, suits, damages, liabilities, losses, judgments, penalties, liens and costs, including reasonable attorney's fees and litigation expenses, arising from Licensee's use of the Software
 10. **Licensee's Representations.** Licensee represents and warrants that (i) Licensee has fully read and understands the terms and conditions of this Agreement and intends to be legally bound thereby; and (ii) Licensee has had the opportunity to seek the advice of legal counsel with regard thereto.
 11. **Ownership & Copyright.** Licensee, on behalf of itself, its owners, shareholders, directors, officers, employees, agents and assigns, acknowledges that the Software and all copyrights thereto are the sole and exclusive property of 3M, and that none of the aforementioned parties has any right, title or interest in the Software except as expressly provided in this Agreement.
 12. **Publicity.** Licensee shall not make any public statements regarding the Software or this Agreement, or make any use of 3M's logos, trademarks, trade names, trade dress or other identifying marks without obtaining 3M's prior written consent in each instance.
 13. **Governing Law and Attorneys' Fees.** This Agreement is governed by the laws of the State of Minnesota, excluding its conflict of laws rules. The parties consent to exclusive jurisdiction and venue in the state and federal courts located in Ramsey County, Minnesota. In any action or suit to enforce any right or remedy under this Agreement or to interpret any provision of this Agreement, the prevailing party will be entitled to recover its costs, including reasonable attorneys' fees. The Parties Further Agree That Regardless Of Any Statute Or Law To The Contrary, Any Claim Or Cause Of Action Arising Out Of Or Related To This Agreement Must Be Brought Within One (1) Year After Such Claim Or Cause Of Action Arose Or Be Forever Barred.
 14. **General.** This Agreement constitutes the entire agreement between Licensee and 3M with respect to the subject matter hereof. In the event of conflict between the terms and conditions of this Agreement and any other agreements or representations by or between the parties hereto, whether oral or written, this Agreement shall govern. The terms of this Agreement cannot be modified by any terms in any printed forms, including but not limited to purchase orders, and can only be modified or amended by express written consent of both parties. If any part of this Agreement is held to be unenforceable as written, it will be enforced to the maximum extent allowed by applicable law, and will not affect the enforceability of any other part. Licensee shall not transfer or assign this Agreement or any of its rights or obligations hereunder, without 3M's express written consent.

ACCEPTED AND AGREED:

3M COMPANY

LICENSEE

By:

By:

(print name)

(print name)

Title:

Title:

Date:

Date:



F. KEY PERSONNEL CERTIFICATION

There are no certifications necessary for this project. All our key personnel are experts in their fields and have extensive experience and education required for their position and responsibilities.

G. EEO PRACTICES – SIGNED AGREEMENT



Affirmative Action Plan

For
(Invitation or RFP No.)

3M Traffic Safety and Security Division

(Name of Contractor)

The above named Contractor is an equal opportunity employer and during the performance of this contract, the Contractor agrees to abide by the Affirmative Action Plan of the City of Chattanooga as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay, or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin, or handicap.
3. The Contractor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. During the term of this contract the following non-discriminatory hiring practices shall be employed to provide employment opportunities for minorities and women:
 - a. All help wanted ads placed in newspapers or other publications shall contain the phrase "Equal Employment Opportunity Employer".
 - b. Seek and maintain contracts with minority groups and human relations organizations as available.
 - c. Encourage present employees to refer qualified minority group and female applicants for employment opportunities.
 - d. Use only recruitment sources which state in writing that they practice equal opportunity. Advise all recruitment sources that qualified minority group

members and women will be sought for consideration for all positions when vacancies occur.

5. Minority statistics are subject to audit by City of Chattanooga staff or other governmental agency.
6. The Contractor agrees to notify the City of Chattanooga of any claim or investigation by State or Federal agencies as to discrimination.

(Signature of Contractor)

3M Traffic Safety and Security Division

(Title and Name of Construction Company)

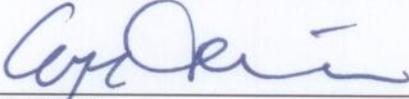
April 2, 2013

(Date)



Equal Employment Opportunity (EEO) and Affirmative Action (AA)

Applicability	All regular full-time and regular part-time U.S. employees.
Introduction	3M believes that successfully managing diversity in the work force is essential to the future competitive position of the company. To help us achieve this objective, we have implemented and now reaffirm our commitment to the company's equal employment opportunity (EEO) and affirmative action policies and programs.
Policy Statement	<p>Our EEO policies prohibit all forms of discrimination or harassment against applicants, employees, vendors, contractors, or customers on the basis of race, color, creed, religion, sex, national origin, age, disability, veteran's status, pregnancy, genetic information, sexual orientation, marital status, citizenship status, status with regards to public assistance, gender identity/expression, or any other reason prohibited by law. Our affirmative action policies and programs are designed to ensure equal opportunities for qualified minorities, women, covered veterans, and individuals with disabilities, and also to provide reasonable accommodation to individuals with disabilities.</p> <p>Our commitment to EEO and affirmative action extends to all terms and conditions of employment, including, but not limited to, recruitment, selection, compensation, training, promotion, and benefits. And with respect to discrimination and harassment, all 3M employees must know and understand that consistent with our policies, 3M will not tolerate this behavior, meaning that any violation will be met with the appropriate company response, up to and including termination of employment.</p> <p>These policies and programs also prohibit all forms of retaliation – including harassment, intimidation, threats, coercion, or discrimination – against any individual because such individual has (1) filed a complaint; (2) assisted or participated in an investigation, compliance evaluation, hearing, or other activity related to the administration of federal EEO and affirmative action requirements; (3) opposed any act or practice made unlawful by these requirements; or (4) exercised any other right protected by these requirements.</p>
Related Information	<ul style="list-style-type: none"> • Harassment Policy • Invitation to Self-Identify Form
Additional Elements	If you feel as though you are being harassed or discriminated against, please contact your supervisor, manager, or 3M Human Resources Representative. Complaints can also be made by contacting the 3M Business Conduct Helpline at 1-800-243-0857 (operated by EthicsPoint), or by visiting the Business Conduct & Policy Center website on 3M Source.
For Further Information	Administration of this policy is the responsibility of all supervisors and managers. To view the affirmative action program for covered veterans and individuals with disabilities or the non-confidential elements of the affirmative action program for women and minorities, please contact Office of Diversity and Inclusion at 651-737-9139 to make viewing arrangements.
Approved By	3M Human Resources Talent Management and Employee Relations
Original Issue Date	February 24, 2012



 Inge G. Thulin
 Chairman of the Board, President and Chief Executive Officer



EQUAL EMPLOYMENT OPPORTUNITY POLICY

Introduction

3M is an equal opportunity employer and will not discriminate against its employees or applicants because of race, color, creed, religion, ethnic origin, age or sex. This philosophy is based on the premise that discrimination of any form will restrict, limit and inhibit the selection and placement of the best-qualified person for the job. This is especially so in a highly competitive global environment where only organizations with the best people have a competitive edge over others. In being a choice employer, the company firmly believes that the appointment, promotion and transfer of an employee shall be based on his abilities, achievements and contributions

102.1 Affirmative Action

Affirmative action shall be taken to ensure strict compliance of this policy in relation to recruitment, promotion, retrenchment (layoff), compensation, benefits, termination, dismissal, training & development and welfare activities. In demonstrating its commitment to equal opportunity, the company shall ensure that no job applicant or employee will receive less favorable treatment than another or be disadvantaged by requirements or conditions which have a disproportionately adverse effect on a particular group.

Every employee, regardless of the level he is in, is responsible for providing equal opportunity to his fellow employees by -

- Not discriminating against his fellow employees or job applicants;
- Not inducing or attempt to induce others to practise discrimination;
- Not victimizing individuals because of discriminatory reasons

102.2 Monitoring

Where employees and job applicants are asked to furnish information relating to their sex, race, ethnic origin, religion and age, this is only an administrative requirement to ensure that equal opportunity practice prevails in the organization. It will not be used to discriminate any individual or group of individuals.

H. COMPLIANCE FORM OF INSURANCE COVERAGE

I. PROFESSIONAL PRACTICES ANSWERS:

3m Company's Qualifications And Explanations

1. PROFESSIONAL PRACTICE

1. 3M Company, founded in 1902, is a publicly traded, Fortune 500 Company with over 88,000 employees worldwide, global presence in over 200 countries, approximately \$30 billion in sales in 2012 and over 40 business units. The foundation of 3M's business conduct program is this: we will do business legally and ethically in all aspects of our global operations. 3M is committed to being a responsible company with uncompromising integrity in all its dealings with local, state/provincial and national governments, and their prime contractors and subcontractors around the world.
 - a. Although an undefined term, 3M is unaware of any allegations of "unscrupulous practice" by any authority or customer. That said, 3M Company provides an overview of legal proceedings by federal, state and local government agencies that are deemed material, and any subsequent action resulting therefrom, in its annual report and Form 10-K. At 3M Company, given our size and diversity, government oversight is a routine occurrence. The Company regularly has OSHA inspections; minor fines or penalties may occasionally be assessed. 3M Company also may be assessed minor fines or penalties in other regulated areas, such as health care. However, minor fines are not considered material and, therefore, not disclosed in our annual report.
 - b. 3M Company has occasionally been investigated by government agencies as part of its ongoing business operations. In some instances, the company has been assessed penalties or has agreed to stipulated penalties with federal and state environmental and occupational health agencies.
 - c. The 3M Company's Form 10-K for the fiscal year ended December 31, 2012, provides an overview of ongoing legal proceedings, claims, lawsuits, regulatory proceedings and other matters that could be considered to be under investigation. This and more information, including a copy of 3M's 2011 annual report, can be found on 3M's Internet site at www.3m.com. 3M Company's Form 10-K is available on the 3M Company website by searching as following: Investor Relations -> SEC Filings -> then in the "Groupings Filter" search box, choose "Annual Reports" -> then select Form 10-K filed 2/14/13. Because of 3M's size, and the broad nature of the request, 3M limits this response to the 3M Company and its officers and directors and to the past 5 years.
2. Please see 3M's comments to Number 1 above.
3. No. Please see 3M's comments to Number 1 above. Because of 3M's size, and the broad nature of the request, 3M limits this response to the 3M Company and its officers and directors and to the past 5 years. 3M (through the office of the Corporate Secretary) surveys its officers and directors annually to comply with a requirement of the Securities Exchange Commission. The survey was last done in January 2013. The survey asks both groups to certify with respect to

involvement in certain legal proceedings, criminal indictments or convictions and other Government investigations. All officers and directors answered in the negative in January 2013.

4. None. Because of 3M's size, 3M limits this response to the 3M's Traffic Safety and Security Division and the Roadway Maintenance Services businesses, the businesses responsible for the preparation of this RFQ response and for any resulting contract, if awarded.
5. Please see 3M's responses above. As to investigations, 3M asserts that the information in the following paragraphs as marked by FOIL Exemption Claimed should be protected from disclosure under the TN Freedom of Information Act because the information disclosed has been derived from information obtained from 3M Company, a commercial enterprise, which, if disclosed, could cause substantial injury to the competitive position of 3M Company.
 - a. In November 2009, the Company contacted the Department of Justice (DOJ) and Securities and Exchange Commission (SEC) to voluntarily disclose that the Company was conducting an internal investigation as a result of reports it received about its subsidiary in Turkey, alleging bid rigging and bribery and other inappropriate conduct in connection with the supply of certain reflective and other materials and related services to Turkish government entities. The Company also contacted certain affected government agencies in Turkey. In September 2012, the Turkish Competition Authority issued its decision finding that there was insufficient evidence obtained in the investigation to find that 3M Turkey or the other companies investigated violated the Turkish competition law.
 - b. The Company retained outside counsel to conduct an assessment of its policies, practices, and controls and to evaluate its overall compliance with the Foreign Corrupt Practices Act (FCPA), including a review of its practices in certain other countries and acquired entities. As part of its review, the Company has also reported to the DOJ and SEC issues arising from transactions in other countries. In January 2013, the DOJ and SEC each notified the Company that they are terminating their investigations into possible violations of the FCPA without taking any action or imposing any fines against the Company. Among the reasons cited by the DOJ for closing its investigation included the Company's voluntary disclosure and cooperation, the Company's thorough investigation, and the steps the Company has taken to enhance its anti-corruption compliance program.
 - c. [FOIL Exemption Claimed] The United States Federal Trade Commission's Bureau of Competition is conducting a nonpublic investigation to determine whether 3M or any other unnamed persons, partnerships, or corporations, acting alone or in concert, have engaged, or are engaging in conduct in violation of the Federal Trade Commission Act, 15 USC Section 45, as amended, to restrain competition in markets for retroreflective sheeting or related technologies, including Type XI retroreflective sheeting, by among other ways, (1) subverting the standard-setting process of ASTM International ("ASTM") or other entities contemplating retroreflective sheeting standards, or (2) attempting to deter entry or exclude rivals through use of exclusive contracts for

retroreflective sheeting or other exclusionary practices. 3M is cooperating with this investigation.

- d. [FOIL Exemption Claimed] The United States Federal Trade Commission's Bureau of Competition is conducting a nonpublic investigation into whether 3M Health Information Systems has engaged in unfair methods of competition in violation of Section 5 of the Federal Trade Commission Act, 15 USC Section 45, as amended, with respect to health information technology, including medical coding, billing, and reimbursement software. 3M is cooperating with this investigation.
 - e. [FOIL Exemption Claimed] The State of Oregon Attorney General is conducting an investigation into possible contracts, combinations or conspiracies in restraint of trade in the road striping and marker industry. 3M has received Civil Investigative Demands and is in the process of responding to these demands and otherwise cooperating with the agency.
6. Please see 3M's 2012 10K report as described in 3M's responses above. 3M again limits this certification to 3M Company and its officers and directors.
 7. As stated above, with over 88,000 employees worldwide, 3M is unable to state with certainty whether any conflict of interest or appearance of a conflict of interest may exist as to any family relationship that any 3M employee may have with any City official or the existence of a conflict of interest or the appearance of a conflict between a 3M employee and the City; or whether any other matter exists that may create a conflict of interest or the appearance of a conflict of interest. That said, 3M is unaware of any such conflict of interest and with a market capitalization in excess of \$70B and in excess of 100,000 shareholders, no individual has a significant financial interest in 3M Company.
 8. No. 3M limits this response to the past 5 years. 3M will not utilize subcontractors in the performance of this Contract and does not certify or represent any factual assertion as to any entity other than the 3M Company.

2. OTHER

1. (3) 3M attaches an evidence of insurance certificate to document the existence of 3M's insurance coverage for purposes of this RFQ. Requisite coverage as finally negotiated between the parties, if a contract is awarded, will be documented at the time the contract is finalized.
2. (4). Please see 3M's comments to Number 3 above.

3. OTHER INFORMATION

1. (8) Conflict of Interest
 - a. See 3M's responses above. As a publicly traded company, 3M is unable to state for certain whether any City of Chattanooga employee or official is a shareholder in 3M Company. That said, 3M is unaware of any conflicts of interest related to this contract, if awarded, and with a market capitalization in excess of \$70B, no shareholder has a significant interest in 3M Company.
2. Requirements for Insurance Coverage

- a. As available part of its response to this Request for Qualifications, 3M submits an Evidence of Coverage Acord form to document 3M's insurance coverage.
 - b. 3M will provide notice of cancellation of coverage as provided under policy provisions.
 - c. 3M will agree to indemnify the City consistent with the terms and conditions finally negotiated between the City and 3M.
3. Affirmative Action Plan
- a. 3M will agree to notify the City of a claim or investigation by any state or federal agency, subject to 3M policy and/or that agency's statutory and or confidentiality requirements.

Exhibit B
3M™ Sign Management System
Contract Pricing

Item	Description	Unit	Pricing
1	<p>3M™ Sign Management System which includes all the following:</p> <p>Data Capture and Post-Processing of data, Initial Daytime and Nighttime Assessment, Five (5) FAST tools, Development of a Web-based Sign Inventory Database, Uploading of all Data to the Web-based Database, Initial Training on the Web-based Database and FAST tools, One (1) year of Web-based Database hosting and FAST Tools support, and periodic one-way data conversion of sign inventory database to a format that is compatible with the City's existing CityWorks Asset Management System.</p>	<p>Installment Payments</p> <p>Dec 15, 2013</p> <p>July 1, 2014</p>	<p>\$150,000.00</p> <p>\$149,545.00</p>
2	<p>Annual Hosting and Maintenance Fees (after Year 1, as the first year is included in the price of Item 1 above. Price will change if additional FAST tools are purchased. Price increases of up to 15% to be applied annually beginning in August 2016)</p>	<p>July 1, 2015- June 30, 2016</p>	<p>\$ 7,590.00</p>
3	<p>Additional FAST Tools (above the five (5) provided in Item 1 above. Subject to price increases of up to 10% annually after November 1, 2014)</p>	<p>Per Unit</p>	<p>\$ 4,450.00</p>
4	<p>Technical Service (above the eight (8) hours included in Item 1 and then subsequent years. Subject to price increases of up to 10% annually after November 1, 2014)</p>	<p>Per Hour</p>	<p>\$ 95.00</p>
5	<p>On-Site Support after initial training (minimum charge \$3,250, plus cost of airfare, meals, hotel and rental car)</p>	<p>Per Hour</p>	<p>\$ 120.00 plus travel expenses</p>

Exhibit B
3M™ Sign Management System
Contract Pricing

Pricing Notes

1. Price is for a maximum not to exceed quantities given below in the scope of work.
 - a. Roadway centerline miles of 1200 miles within the City boundaries
2. If the scope of work exceeds these quantities, additional payment on a pro rata basis will be required
3. Using past experience and GIS techniques 3M estimates approximately 45,000 signs within the City's jurisdiction and was used in our pricing.
4. Payments to 3M shall be made in two (2) Installments; the first to be billed by December 15, 2013 and the second on July 1, 2014 for the amounts stated in Item 1 of the table on the previous page.
5. Price includes 1 year subscription to the 3M hosted web-based management application and inventory database, along with 1 year of telephone and e-mail based technical support.
6. Subscription period begins the day that the Certificate of Acceptance is signed by the City at the conclusion of project.
7. Subscriptions are available in 1 year increments for periods extending beyond the initial 1 year period. Pricing for additional years is outlined in Item 2 in the table on the previous page.
8. Price includes providing, upon request, the complete ArcGIS geodatabase to the City and converting the schema, if necessary, to be compatible with the City's GIS infrastructure.
9. The pricing provided is valid for ninety (90) calendar days from October 1, 2013.
10. 3M FAST tool price shown in Item 3 is per each unit and includes both hardware and software
 - a. There is no limit to the number that can be purchased at this price
 - b. Additional FAST tools, beyond the five (5) units which are supported incidentally by the web subscription, can be licensed and supported for time periods beyond the first year at a cost of \$600 per each, per year.
 - c. The FAST tool pricing shown in Item 3 and the support costs shown in Bullet 10-b above are valid for 1-year from date of Executed Contract and subject to price increases as stated in Item 3 of the table on the previous page.

Exhibit C
3M Traffic Safety & Security Division
Software License Agreement

This Software License Agreement ("Agreement") by and between 3M Company ("3M") and *City of Chattanooga, TN* ("Licensee") is effective upon Licensee's receipt of the Software ("Effective Date").

In consideration of the exchange of promises herein, and other good and valuable consideration, the sufficiency of which is hereby acknowledged, and intending to be legally bound, the parties agree as follows:

1. **License.** 3M grants Licensee a non-exclusive, non-transferable, limited license to use the 3M Sign Data Management Tools software ("Software") on a single PC for the limited purposes set forth herein. Upon the expiration of the warranty period, 3M will provide Licensee with a maintenance agreement which will provide revisions and updates to the Software. Such revisions and updates shall be deemed Software for the purposes of this Agreement and shall be subject to the terms and conditions herein. This license pertains to the Software in object code form only. Licensee has no right or license to the Software in source code form, and Licensee shall not reverse engineer, decompile, disassemble or otherwise attempt to gain access to the Software. All rights to the Software not expressly granted to Licensee in this Agreement are reserved to 3M.
2. **Use Restrictions.** Licensee shall use the Software for its internal business purposes only, and shall not sell, rent, lend, lease, sublicense, or distribute the Software, or modify or create derivative works thereof. Licensee may make a single copy of the Software for archival purposes only.
3. **Term.** This Agreement is effective upon the Effective Date and expires upon the expiration or termination of the Contract for *Traffic Sign Retroreflectivity Study* between Licensee and 3M.
4. **Termination.** 3M may terminate this Agreement if Licensee fails to cure a material breach thereof within ten (10) days of receipt of written notice of such breach. In addition, 3M may terminate this Agreement, with or without cause, upon thirty (30) days written notice to Licensee.
5. **Effect of Termination.** Upon expiration or termination of this Agreement, all right and license of Licensee to use or possess the Software shall terminate immediately and Licensee shall promptly delete or destroy all copies of the Software stored in any medium. Upon request, Licensee will provide 3M with written certification of the foregoing.
6. **Warranty.** The Software shall perform the functions described in 3M's Software documentation for a period of 90 days. 3M's sole liability and Licensee's exclusive remedy for deficiencies in the Software that cause failures of the described functions will be to correct the deficiencies with revised software to be provided free of charge.
7. **DISCLAIMER OF WARRANTIES.** 3M disclaims all other warranties, express or implied, regarding the software including but not limited to the warranties of merchantability and fitness for a particular purpose. The software is not warranted to be error-free or to run uninterrupted. Licensee assumes any and all risk regarding its use of the software.

Exhibit C
3M Traffic Safety & Security Division
Software License Agreement

8. **LIMITATION OF LIABILITY.** 3M will not be liable for any special, incidental, indirect, or consequential damages (including, without limitation, damages for personal injury, loss of business profits, business interruption, loss of data or any other pecuniary loss) arising out of the use of or inability to use the software, even if 3M has been advised of the possibility of such damages. In any case, the entire liability of 3M under this agreement, or otherwise arising from the software and licensee's use thereof, shall be limited to the amount actually paid by licensee for the software.
9. **Indemnification.** Licensee agrees to indemnify and hold harmless 3M, its directors, officers, shareholders, employees, agents and assigns, from all claims, actions, suits, damages, liabilities, losses, judgments, penalties, liens and costs, including reasonable attorney's fees and litigation expenses, arising from Licensee's use of the Software
10. **Licensee's Representations.** Licensee represents and warrants that (i) Licensee has fully read and understands the terms and conditions of this Agreement and intends to be legally bound thereby; and (ii) Licensee has had the opportunity to seek the advice of legal counsel with regard thereto.
11. **Ownership & Copyright.** Licensee, on behalf of itself, its owners, shareholders, directors, officers, employees, agents and assigns, acknowledges that the Software and all copyrights thereto are the sole and exclusive property of 3M, and that none of the aforementioned parties has any right, title or interest in the Software except as expressly provided in this Agreement.
12. **Publicity.** Licensee shall not make any public statements regarding the Software or this Agreement, or make any use of 3M's logos, trademarks, trade names, trade dress or other identifying marks without obtaining 3M's prior written consent in each instance.
13. **Governing Law and Attorneys' Fees.** This Agreement is governed by the laws of the State of Minnesota, excluding its conflict of laws rules. The parties consent to exclusive jurisdiction and venue in the state and federal courts located in Ramsey County, Minnesota. In any action or suit to enforce any right or remedy under this Agreement or to interpret any provision of this Agreement, the prevailing party will be entitled to recover its costs, including reasonable attorneys' fees. The Parties Further Agree That Regardless Of Any Statute Or Law To The Contrary, Any Claim Or Cause Of Action Arising Out Of Or Related To This Agreement Must Be Brought Within One (1) Year After Such Claim Or Cause Of Action Arose Or Be Forever Barred.
14. **General.** This Agreement constitutes the entire agreement between Licensee and 3M with respect to the subject matter hereof. In the event of conflict between the terms and conditions of this Agreement and any other agreements or representations by or between the parties hereto, whether oral or written, this Agreement shall govern. The terms of this Agreement cannot be modified by any terms in any printed forms, including but not limited to purchase orders, and can only be modified or amended by express written consent of both parties. If any part of this Agreement is held to be unenforceable as written, it will be enforced to the maximum extent allowed by applicable law, and will not

Exhibit C
3M Traffic Safety & Security Division
Software License Agreement

affect the enforceability of any other part. Licensee shall not transfer or assign this Agreement or any of its rights or obligations hereunder, without 3M's express written consent.

ACCEPTED AND AGREED:

3M COMPANY

LICENSEE

By:

By:

(print name)

(print name)

Title:

Title:

Date:

Date:

TRAFFIC SIGNS INVENTORY AND MANAGEMENT SYSTEM AGREEMENT

This Professional Services Agreement ("Agreement") dated and effective October _____, 2013 is made by and between 3M Company through its Traffic Safety and Security Division with a principal place of business at 3M Center, St. Paul, MN 55144 ("3M") and the City of Chattanooga, Tennessee, located at 101 East 11th Street, Suite G13 Chattanooga, Tennessee 37402 ("City"). 3M and the City may be individually referred to as a "Party" or collectively as the "Parties."

1. Scope of Agreement. The City is seeking to hire a consultant to conduct a Retroreflectivity Sign Inventory for all City maintained streets within City limits. The project includes the provision of an Internet based database containing sign inventory data. These services are more fully described in the Scope of Services document which is attached to this Agreement as Exhibit A (attach 3M Technical Proposal).

2. Price and Payment Terms. The City agrees to pay 3M for all services and deliverables hereunder in accordance with the Scope of Services. The value for the services and deliverables in this Agreement is \$299,545.00 and will be paid in installments as identified in Exhibit B. The City's liability to 3M for Services pursuant to this Agreement shall not exceed \$299,545.00 without prior approval of appropriate City officials.

2.1 The lump sum price set forth therein includes all applicable Federal, State and local taxes and duties including, but not limited to, sales, use and value-added taxes, arising out of or relating to 3M's delivery of goods or services to the City, or 3M's performance of this Agreement.

2.2 All invoices shall clearly reference this Agreement and contain a unique invoice number. All invoices shall include the "Amount Previously Billed," the "Amount of this Invoice," and the "Total Amount Billed to Date" where applicable.

2.3 3M may select Automated Clearing House Credits ("ACH funds transfer"), as the means of settlement. With regard to such ACH funds transfer, a payment from The City to 3M shall be considered timely with respect to any payment due date contained herein if the ACH funds transfer is initiated on or before the due date and completed no later than four (4) business days after such payment due date. The City shall not be in breach of these terms and conditions, or suffer any loss of discount or other penalty, with respect to an ACH funds transfer that was initiated properly and timely by the City to the extent its completion is delayed because of failure or delay by the ACH funds transfer system, the operation of an ACH funds transfer system rule which could not be anticipated by The City, or rejection by 3M's bank.

3. Key Personnel. For purposes of this Section, "Key Personnel" are defined as those individuals who are mutually recognized by The City and 3M as essential to the successful completion and execution of the Agreement.

3.1 During the Term of the Agreement, 3M shall not, without consultation with the City, remove any key personnel from the Project or reassign such individual except (i) for a bona fide promotion or resignation, or, (ii) if 3M reasonably determines that the individual has failed to adequately perform his or her duties; or, (iii) incapacitation; or (iv) if the function or position is no longer required under the provisions of this Agreement.

3.2 If any one of 3M's Key Personnel identified in Section 3.3 below is reassigned, becomes incapacitated, or ceases to be employed by 3M and therefore becomes unable to perform the assigned functions or responsibilities, 3M shall promptly replace such person with another qualified person after consultation with the City, which shall not be unreasonably withheld. In any such event, 3M shall provide reasonable notice to the City, taking into account the status of the Project and the schedule pertaining thereto. At the beginning of each new phase, if any, or at the milestone for a deliverable, if any, the parties shall agree on any modifications to 3M's key personnel as set forth in this Agreement, taking into account career development, the best interests of the Project and other similar issues.

3.3 3M's Key Personnel are listed in Exhibit A, Section - Qualifications on pages 21-28.

4. 3M Asset Management System. The 3M Asset Management System (the "AMS Service") is a web browser-based service accessed via the Internet enabling the uploading, mapping, viewing, storage and downloading of GIS data and related sign and signal inventory information. During the term of this Agreement, the City may access and use the AMS Service for the City's own internal business use for the sole purpose of creating, managing and maintaining sign and signal inventories in the City's jurisdiction.

4.1 The City is solely responsible for obtaining and maintaining, at its own cost and expense, an Internet connection suitable for the purpose of accessing and using the AMS Service.

4.2 3M will provide the City with usernames and passwords for use by the City's employees in accessing the AMS Service. The City shall be responsible for maintaining the confidentiality of such usernames and passwords, and shall be responsible for all access to the AMS Service all use of the AMS Service thereby.

4.3 A 3M Software Licensing Agreement is included as part of this contract. It is shown in Exhibit C and must be signed by the City of Chattanooga and 3M. The Licensing Agreement will be in effect as long as the City continues to renew its contract by paying the annual support and maintenance fee for the 3M Sign Management System.

5. Delivery. Deliverables shall be provided in accordance with Scope of Services as described in Exhibit A.

6. Audit. 3M will permit the City's Representative, or a duly authorized representative, to inspect and audit all services, material and other data and records directly connected with this Agreement. The City will provide advance written notice of intent to audit and access will be granted at mutually convenient times. Any audit or inspection will be subject to 3M's facility safety and security requirements. The representative shall be required to sign a 3M confidential nondisclosure agreement as will be mutually negotiated between the Parties.

6.1 3M shall maintain project records and other evidence pertaining to the costs incurred pursuant to this Agreement for five (5) years in accordance with all City document retention regulations. The records and documents subject to audit do not include the disclosure of 3M's costs, processes or any other proprietary information. These records and any and all copies remain the property of 3M. Subject to the confidentiality requirements of Section 14 of this Agreement, 3M shall make the records available to the City at 3M's office, at reasonable times, for the Term of this Agreement and for a relevant period of time after the expiration or termination of the Prime Contract. All such records shall be maintained in accordance with generally accepted accounting principles.

6.2 Costs of any audits conducted under the authority of this section and not addressed elsewhere will be borne by the City unless the audit identifies significant findings that would benefit the City. 3M shall reimburse the City for the total costs of an audit that identifies significant findings that would benefit the City.

6.3 This Section shall not be construed to limit, revoke, or abridge any other rights, powers, or obligations relating to audit which the City may have by Federal, State, or Municipal law, whether those rights, powers, or obligations are express or implied.

7. Changes and Change Order Process. Contacts between the City and 3M regarding the Agreement price, schedule, Scope of Services or the Terms and Conditions shall be made only with the party's authorized contractual representative.

7.1 Either Party may issue a written request (a "Change Request") to the other setting out any addition, removal, amendment or variation to the description, scope or delivery of 3M Software or 3M services to be provided under this Agreement, including but not limited to changes to requirements or specifications regarding the functionality or performance of the 3M Software or changes specifically required by new or amended State laws or regulations (a "Change").

7.2 Until such time as a Change Request is executed by the parties, the City and 3M shall continue to perform their respective pre-existing obligations as set forth under this Agreement as if no Change Request had been made, but neither party shall be required to perform any work related to a Change Request, or incur any additional costs, or be obliged to pay any additional charges related to a Change Request.

8. Standard of Care. 3M shall use reasonable care to reflect requirements of all applicable laws, rules or regulations of which 3M has knowledge or about which The City specifically advises in writing, which are in effect on the date of the Prime Agreement. 3M intends to render the services under this agreement in accordance with generally accepted professional standards but makes no other warranty either express or implied.

9. Termination for Convenience. The City shall have the right to terminate this Agreement, in whole or in part, at any time, without cause for the City's convenience. In the event of such termination, the City shall provide immediate written notice to 3M of the termination. Upon receiving notice of such termination, 3M shall:

- (i) stop all services and suspend delivery of 3M deliverables on the date and to the extent specified;
- (ii) place no further contracts hereunder except as may be necessary for completing such portions of the Agreement as have not been terminated;
- (iii) terminate all contracts to the extent that they may relate to portions of the Agreement that have been terminated; and
- (iv) protect all property in which the City has or may acquire an interest and deliver such property to the City.

10. Termination for Default. Either the City or 3M may terminate this Agreement if the other party materially breaches this Agreement by giving thirty (30) days prior written notice and an opportunity to cure. If the breaching party fails to cure the breach to the non-breaching party's objective satisfaction or commence and diligently pursue efforts to cure the breach if the breach cannot be cured in thirty (30) days during the notice period, then the Agreement will terminate on the last day of the notice period.

11. Indemnification.

11.1 General Indemnity. 3M shall indemnify and hold harmless the City and its respective officers, directors, and employees from and against and all liability for third party losses, claims, causes of action, suits, demands, injuries and damages (including, but not limited to, reasonable attorney's fees and costs) (collectively, "Third Party Claims") to the extent such Third Party Claims are for (i) personal injury damages, including death; or (ii) damages to real property or tangible personal property (excluding data), and further provided the foregoing Claims are caused by the negligent or willful or malicious acts or omissions of 3M, its employees, or its lower-tier Subcontractors acting under 3M's reasonable control in performance of their respective obligations under this Agreement.

11.2 Intellectual Property Infringement Indemnity. 3M shall indemnify the City and, at 3M's own expense, 3M shall defend any suit brought against the City for infringement of United States intellectual property rights to include patents, trademark,

trade secret, or copyrights, protected by state or federal law to the extent that the claim of infringement is alleged to relate to or arise from 3M's, the City's use of any 3M Software provided by 3M under this Agreement (an "Infringement Claim").

11.2.1 Exclusions from 3M's Obligations. 3M's obligations under Section 11.2 shall not apply to the extent a claim arises from (i) the City's unlicensed or unauthorized modification of the 3M Software; (ii) the City's failure to use corrections or enhancements delivered by 3M that are designed to avoid the infringement; (iii) the City's use of the 3M Software in combination with any product or information not owned, developed, delivered or recommended by 3M; or, (iv) any modification of the Source Code that is not expressly authorized by 3M.

11.3 Indemnification Process. In the event that a Third Party Claim or Infringement Claim is brought against the City entitled to indemnification under Sections 11.1 or 11.2 above, the City shall give written notice promptly after the City has knowledge of the claim. The City's failure to give notice as required by the previous sentence will not relieve 3M of its indemnification obligations except to the extent that 3M can demonstrate prejudice or other injury as a result of such failure. 3M shall control the defense of any indemnified claim. The City shall cooperate in the defense of indemnified claims. The City may participate in such defense through its own legal counsel at its own cost and expense. 3M shall not settle any indemnified claim without the prior written consent of the City, to the extent that the City has responsibility or liability for any portion of such settlement. Consent shall not be unreasonably withheld, denied, or delayed.

11.4 LIMITATION OF LIABILITY. EXCEPT FOR A VIOLATION OF SECTIONS 13 OR 14, NEITHER PARTY WILL, UNDER ANY CIRCUMSTANCES, BE LIABLE TO THE OTHER PARTY FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO THE SERVICES, THIS AGREEMENT OR THE TERMINATION OF THIS AGREEMENT. THIS LIMITATION OF LIABILITY APPLIES REGARDLESS OF THE LEGAL THEORY UNDER WHICH SUCH DAMAGES ARE SOUGHT.

12. Insurance. 3M will obtain the following minimum insurance coverage, and maintain it at all times throughout the life of this subcontract.

12.1. Comprehensive General Liability Insurance or Commercial General Liability Insurance ("CGL") including:

The CGL insurance must be written on an occurrence basis and must have limits of at least One Million Dollars (\$1,000,000) for any one person in a single accident and totaling not less than One Million Dollars (\$1,000,000) per occurrence for bodily injury; One Million Dollars (\$1,000,000) per occurrence for property damage and Five Million Dollars (\$5,000,000)

annual aggregate limit and for products/completed operations.

12.1.1 Business Auto Insurance, applying to owned, non-owned and hired vehicles, with a limit of at least One Million Dollars (\$1,000,000).

12.1.2 Workers' Compensation and Employer's Liability Insurance, with the Workers' Compensation insurance as required by law. The Employer's Liability insurance must have a minimum limit of One Million Dollars (\$1,000,000) per accident.

12.2 The terms used in Paragraph 12.1 to specify the required insurance are to be interpreted according to the ordinary usage of the insurance industry. The policies obtained and maintained to provide the specified insurance must provide that the required coverages and limits cannot be canceled or changed without at least the notice as provided in accordance with policy provisions. Before beginning any Work under this Contract, 3M will provide an insurance certificate showing compliance with the insurance specifications.

13. Intellectual Property Rights. Except as expressly provided herein, nothing in this Agreement will be construed as to transfer any right, title, or interest in the intellectual property of one party to any other party. Any intellectual property created in the performance of this Agreement solely by the personnel of one party shall be or remain the sole and exclusive property of that party, regardless of whether it is completed or reduced to practice thereafter. Except with regard to 3M Software and all modifications, enhancements, alterations or derivative works thereof, regardless of authorship shall remain the sole property of 3M.

14. Confidentiality. 3M Confidential Information means information or tangible materials, whether or not designated by 3M as confidential, pertaining to: (i) general business information regarding the Project, technical information regarding 3M Traffic Safety Systems ("TSS") products (ii) any other aspects of 3M's business relating to products, including without limitation marketing, sales, customers and non-public financial data; (iii) 3M Systems, Access Codes, and Passwords.

The City will: (a) keep all 3M Confidential Information confidential; (b) use 3M Confidential Information only as necessary to perform the City's obligations under this Agreement; and (c) assure that its employees, agents abide by these confidentiality obligations. If the City receives any tangible materials constituting 3M Confidential Information, then The City will not analyze those materials without 3M's prior written consent in each instance and the City will return those to 3M, on 3M's request or at the Term's end. 3M Confidential Information does not include information that is: (x) available to the public without fault of the City; (y) known to the City prior to its receipt from 3M as evidenced by the City's written records; or (z) available to the City from another source without breach of any agreement or violation of law. If required by judicial or administrative process to disclose 3M Confidential Information, the City

agrees to promptly give 3M notice, allow 3M reasonable time to oppose such process, and seek to have the third party treat the information confidentially to the extent legally permissible.

15. Governing Law; Disputes. This Agreement will be governed by the laws the State of Tennessee without regard to its conflict of law rules. The 1980 United Nations Convention on Contracts for the International Sales of Goods will not govern this Agreement. Any and all disputes arising under this Agreement between the parties must be resolved in the following order: (a) by good faith negotiations conducted within ten (10) days of a request for such negotiations; (b) if those negotiations are unsuccessful, by non-binding mediation within thirty (30) days of a request for mediation at a location acceptable to both parties using a neutral mediator having experience with the industry in accordance with the rules of the Center for Public Resources (with costs shared equally); or (c) as a last resort if mediation is unsuccessful, by litigation. This Section 15.0 will not preclude either party from taking other action if it is necessary to prevent immediate, irreparable harm to that party's interests. Pending final resolution of a dispute pursuant to this Section 15.0, the City shall continue to make timely payments of undisputed amounts owed to 3M in accordance with Section 2 and 3M will continue to perform its undisputed obligations under this Agreement.

16. Force Majeure. A party shall not be in breach/default of this Agreement and shall not be liable to the other party or to the State if its failure to perform was due to causes beyond its reasonable control of, and occurred without any fault or negligence on its part. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the State in its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, court actions, governmental regulatory or administrative actions, temporary or permanent injunctions, or other judicial orders or actions, whether the case, suit or proceeding is initiated by a party or by a third party. In each such event set out in this Section, the non-performing party shall be excused from any further performance or observance of the obligation(s) so affected for as long as such circumstances prevail and such party continues to use its commercially reasonable efforts to recommence performance or observance whenever and to whatever extent possible without delay, provided such party promptly notifies the other party in writing of the inception of the excusable failure occurrence, and also of its abatement or cessation.

Each party shall use its reasonable efforts to minimize the duration and consequences of any failure of or delay in performance resulting from a Force Majeure event and to promptly notify the other party of any actual or potential Force Majeure event.

17. Relationship of Parties. The parties are independent contractors and nothing contained in this Agreement shall be deemed or construed to create a partnership, joint venture, agency or other relationship other than that of supplier and customer. Each

party shall be solely responsible for payment of all compensation owed to its respective employees, as well as for its respective employment related taxes.

18. Agreements and Assignments. 3M agrees to obtain the City's written approval before assigning any portion of the Services covered under this Agreement; provided, however, that this limitation shall not apply to 3M's purchase of standard commercial supplies, raw materials, or individual contract workers. This Agreement shall not be assigned or delegated by 3M without the prior written consent of the City, whose written approval or consent under this Section 18.0 shall not be unreasonably withheld, delayed, or denied.

19. Compliance with Laws. 3M shall comply with the applicable provisions of any applicable federal, state or local law or ordinance, or order, rule or regulation issued thereunder with regard to their respective performance under this Agreement and their respective contractual obligations under the Prime Contract.

20. Non-Discrimination. 3M, in performing under this contract, shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, creed, color, age or national origin, or handicap, or sex, nor otherwise commit an unfair employment practice. 3M further agrees that this article will be incorporated by 3M in all contracts entered into with sub-contractors or any labor organizations, furnishing skilled, unskilled and craft union skilled labor, or who may perform any such labor or services in connection with this contract.

21. Publicity and Disclosure. The parties shall coordinate with and obtain prior written approval from one another for any news release, public announcement, advertisement or other form of publicity regarding this Agreement. In no event shall either party use a proprietary mark belonging to the other party without having first received the prior written approval of the other party.

ACCEPTED AND AGREED:

3M COMPANY

THE CITY OF CHATTANOOGA

By: _____

By: _____

Title: _____

Title _____

Date: _____

Date: _____

EXHIBIT A

SCOPE OF SERVICES

Exhibit B
3M™ Sign Management System
Contract Pricing

Item	Description	Unit	Pricing
1	<p>3M™ Sign Management System which includes all the following:</p> <p>Data Capture and Post-Processing of data, Initial Daytime and Nighttime Assessment, Five (5) FAST tools, Development of a Web-based Sign Inventory Database, Uploading of all Data to the Web-based Database, Initial Training on the Web-based Database and FAST tools, One (1) year of Web-based Database hosting and FAST Tools support, and periodic one-way data conversion of sign inventory database to a format that is compatible with the City's existing CityWorks Asset Management System.</p>	<p>Installment Payments</p> <p>Dec 15, 2013</p> <p>July 1, 2014</p>	<p>\$150,000.00</p> <p>\$149,545.00</p>
2	<p>Annual Hosting and Maintenance Fees <i>(after Year 1, as the first year is included in the price of Item 1 above. Price will change if additional FAST tools are purchased. Price increases of up to 15% to be applied annually beginning in August 2016)</i></p>	<p>July 1, 2015- June 30, 2016</p>	<p>\$ 7,590.00</p>
3	<p>Additional FAST Tools <i>(above the four (4) provided in Item 1 above. Subject to price increases of up to 10% annually after November 1, 2014)</i></p>	<p>Per Unit</p>	<p>\$ 4,450.00</p>
4	<p>Technical Service <i>(above the eight (8) hours included in Item 1 and then subsequent years. Subject to price increases of up to 10% annually after November 1, 2014)</i></p>	<p>Per Hour</p>	<p>\$ 95.00</p>
5	<p>On-Site Support after initial training (minimum charge \$3,250, plus cost of airfare, meals, hotel and rental car)</p>	<p>Per Hour</p>	<p>\$ 120.00 plus travel expenses</p>

Exhibit B

3M™ Sign Management System Contract Pricing

Pricing Notes

1. Price is for a maximum not to exceed quantities given below in the scope of work.
 - a. Roadway centerline miles of 1200 miles within the City boundaries
2. If the scope of work exceeds these quantities, additional payment on a pro rata basis will be required
3. Using past experience and GIS techniques 3M estimates approximately 45,000 signs within the City's jurisdiction and was used in our pricing.
4. Payments to 3M shall be made in two (2) Installments; the first to be billed by December 15, 2013 and the second on July 1, 2014 for the amounts stated in Item 1 of the table on the previous page.
5. Price includes 1 year subscription to the 3M hosted web-based management application and inventory database, along with 1 year of telephone and e-mail based technical support.
6. Subscription period begins the day that the Certificate of Acceptance is signed by the City at the conclusion of project.
7. Subscriptions are available in 1 year increments for periods extending beyond the initial 1 year period. Pricing for additional years is outlined in Item 2 in the table on the previous page.
8. Price includes providing, upon request, the complete ArcGIS geodatabase to the City and converting the schema, if necessary, to be compatible with the City's GIS infrastructure.
9. The pricing provided is valid for ninety (90) calendar days from October 1, 2013.
10. 3M FAST tool price shown in Item 3 is per each unit and includes both hardware and software
 - a. There is no limit to the number that can be purchased at this price
 - b. Additional FAST tools, beyond the five (5) units which are supported incidentally by the web subscription, can be licensed and supported for time periods beyond the first year at a cost of \$600 per each, per year.
 - c. The FAST tool pricing shown in Item 3 and the support costs shown in Bullet 10-b above are valid for 1-year from date of Executed Contract and subject to price increases as stated in Item 3 of the table on the previous page.

Exhibit C

3M Traffic Safety & Security Division Software License Agreement

This Software License Agreement ("Agreement") by and between 3M Company ("3M") and *City of Chattanooga, TN* ("Licensee") is effective upon Licensee's receipt of the Software ("Effective Date").

In consideration of the exchange of promises herein, and other good and valuable consideration, the sufficiency of which is hereby acknowledged, and intending to be legally bound, the parties agree as follows:

1. License. 3M grants Licensee a non-exclusive, non-transferable, limited license to use the 3M Sign Data Management Tools software ("Software") on a single PC for the limited purposes set forth herein. Upon the expiration of the warranty period, 3M will provide Licensee with a maintenance agreement which will provide revisions and updates to the Software. Such revisions and updates shall be deemed Software for the purposes of this Agreement and shall be subject to the terms and conditions herein. This license pertains to the Software in object code form only. Licensee has no right or license to the Software in source code form, and Licensee shall not reverse engineer, decompile, disassemble or otherwise attempt to gain access to the Software. All rights to the Software not expressly granted to Licensee in this Agreement are reserved to 3M.
2. Use Restrictions. Licensee shall use the Software for its internal business purposes only, and shall not sell, rent, lend, lease, sublicense, or distribute the Software, or modify or create derivative works thereof. Licensee may make a single copy of the Software for archival purposes only.
3. Term. This Agreement is effective upon the Effective Date and expires upon the expiration or termination of the Contract for *Traffic Sign Retroreflectivity Study* between Licensee and 3M.
4. Termination. 3M may terminate this Agreement if Licensee fails to cure a material breach thereof within ten (10) days of receipt of written notice of such breach. In addition, 3M may terminate this Agreement, with or without cause, upon thirty (30) days written notice to Licensee.
5. Effect of Termination. Upon expiration or termination of this Agreement, all right and license of Licensee to use or possess the Software shall terminate immediately and Licensee shall promptly delete or destroy all copies of the Software stored in any medium. Upon request, Licensee will provide 3M with written certification of the foregoing.
6. Warranty. The Software shall perform the functions described in 3M's Software documentation for a period of 90 days. 3M's sole liability and Licensee's exclusive remedy for deficiencies in the Software that cause failures of the described functions will be to correct the deficiencies with revised software to be provided free of charge.
7. DISCLAIMER OF WARRANTIES. 3M disclaims all other warranties, express or implied, regarding the software including but not limited to the warranties of merchantability and fitness for a particular purpose. The software is not warranted to be error-free or to run uninterrupted. Licensee assumes any and all risk regarding its use of the software.

Exhibit C
3M Traffic Safety & Security Division
Software License Agreement

8. **LIMITATION OF LIABILITY.** 3M will not be liable for any special, incidental, indirect, or consequential damages (including, without limitation, damages for personal injury, loss of business profits, business interruption, loss of data or any other pecuniary loss) arising out of the use of or inability to use the software, even if 3M has been advised of the possibility of such damages. In any case, the entire liability of 3M under this agreement, or otherwise arising from the software and licensee's use thereof, shall be limited to the amount actually paid by licensee for the software.
9. **Indemnification.** Licensee agrees to indemnify and hold harmless 3M, its directors, officers, shareholders, employees, agents and assigns, from all claims, actions, suits, damages, liabilities, losses, judgments, penalties, liens and costs, including reasonable attorney's fees and litigation expenses, arising from Licensee's use of the Software
10. **Licensee's Representations.** Licensee represents and warrants that (i) Licensee has fully read and understands the terms and conditions of this Agreement and intends to be legally bound thereby; and (ii) Licensee has had the opportunity to seek the advice of legal counsel with regard thereto.
11. **Ownership & Copyright.** Licensee, on behalf of itself, its owners, shareholders, directors, officers, employees, agents and assigns, acknowledges that the Software and all copyrights thereto are the sole and exclusive property of 3M, and that none of the aforementioned parties has any right, title or interest in the Software except as expressly provided in this Agreement.
12. **Publicity.** Licensee shall not make any public statements regarding the Software or this Agreement, or make any use of 3M's logos, trademarks, trade names, trade dress or other identifying marks without obtaining 3M's prior written consent in each instance.
13. **Governing Law and Attorneys' Fees.** This Agreement is governed by the laws of the State of Minnesota, excluding its conflict of laws rules. The parties consent to exclusive jurisdiction and venue in the state and federal courts located in Ramsey County, Minnesota. In any action or suit to enforce any right or remedy under this Agreement or to interpret any provision of this Agreement, the prevailing party will be entitled to recover its costs, including reasonable attorneys' fees. The Parties Further Agree That Regardless Of Any Statute Or Law To The Contrary, Any Claim Or Cause Of Action Arising Out Of Or Related To This Agreement Must Be Brought Within One (1) Year After Such Claim Or Cause Of Action Arose Or Be Forever Barred.
14. **General.** This Agreement constitutes the entire agreement between Licensee and 3M with respect to the subject matter hereof. In the event of conflict between the terms and conditions of this Agreement and any other agreements or representations by or between the parties hereto, whether oral or written, this Agreement shall govern. The terms of this Agreement cannot be modified by any terms in any printed forms, including but not limited to purchase orders, and can only be modified or amended by express written consent of both parties. If any part of this Agreement is held to be unenforceable as written, it will be enforced to the maximum extent allowed by applicable law, and will not

Exhibit C
3M Traffic Safety & Security Division
Software License Agreement

affect the enforceability of any other part. Licensee shall not transfer or assign this Agreement or any of its rights or obligations hereunder, without 3M's express written consent.

ACCEPTED AND AGREED:

3M COMPANY

LICENSEE

By:

By:

(print name)

(print name)

Title:

Title:

Date:

Date:
