GENESEE TRANSPORTATION COUNCIL

RESOLUTION

Resolution 22-2   **Accepting the *Regional Traffic Operations Center Performance Monitoring and Evaluation System* as evidence of completion of UPWP Task 7620**

WHEREAS,

1.   The *FY 2022-2023 Unified Planning Work Program* includes Task 7620, Genesee-Finger Lakes Regional Performance Measurement Monitoring and Evaluation System, for the purpose of establishing a program for evaluating regional transportation system performance data and reporting performance measures based on that data;

2.   Said Task evaluated best practices for monitoring and measuring transportation system performance; inventoried operations data and analysis tools currently available at the James R. Pond Regional Traffic Operations Center (RTOC); identified gaps and associated needs in data collection, management, and reporting; determined the functional requirements of a ticketing and dispatch system for managing transportation service delivery and extracting performance data; and developed a web-based system for tracking service calls, monitoring response activities, and extracting operations data to use in monitoring and evaluating RTOC service delivery;

3.   Said Task has been completed and has resulted in the *Regional Traffic Operations Center Performance Monitoring and Evaluation System,* which enables more efficient transportation system performance data collection and analysis; and

4.   Said System has been reviewed by GTC staff and member agencies through the GTC committee process and has been found to be consistent with the goals, objectives, and recommendations of the Long Range Transportation Plan.

NOW, THEREFORE, BE IT RESOLVED

1.   That the Genesee Transportation Council hereby accepts the *Regional Traffic Operations Center Performance Monitoring and Evaluation System* as evidence of completion of UPWP Task 7620; and

2.   That this resolution takes effect immediately.

CERTIFICATION

The undersigned duly qualified Secretary of the Genesee Transportation Council certifies that the foregoing is a true and correct copy of a resolution adopted at a legally convened meeting of the Genesee Transportation Council held on February 23, 2023.

Date   _____

                              CHRISTOPHER REEVE, Secretary
                              Genesee Transportation Council

Genesee-Finger Lakes Regional Performance Measurement Monitoring and Evaluation System: Phase II Executive Summary

UPWP Task Number 7620

Introduction

The Genesee-Finger Lakes Regional Performance Measurement Monitoring and Evaluation System was a collaborative effort between the New York State Department of Transportation-Region 4 (NYSDOT-R4), the Monroe County Department of Transportation (MCDOT), and the Genesee Transportation Council (GTC) to develop a performance measurement system for enhancing internal operations at the James R. Pond Regional Traffic Operations Center (RTOC).

This project addressed two needs at the RTOC. First, by replacing the Access database currently in use for managing service calls, it provides a more efficient ticking/dispatching system for RTOC personnel to use for monitoring and managing regional traffic operations. Second, it provides a more effective platform for extracting performance data generated within the RTOC that can be used by RTOC personnel, NYSDOT, MCDOT, and GTC staff, and other partner agencies to better manage and operate the regional transportation system.

Project Background

Opened in 2002 and located at 1155 Scottsville Road, the RTOC is the hub of regional transportation operations. The facility is jointly operated by NYSDOT and MCDOT, whose operators oversee a regional network of Intelligent Transportation System (ITS) instrumentation, including traffic cameras, dynamic message signs, and synchronized traffic signals. RTOC operators assist with traffic incident detection, verification, and response; coordinate the regional Highway Emergency Local Patrol (HELP) program; and help manage detour routes, work zones, special events, and other activities that impact transportation operations. Currently, the RTOC operates with multiple web-based systems, including an Access database used for tracking dispatching services and a range of specialized systems such as CoVal, TransCore, and FLIR for managing traffic signals and ITS instrumentation.

Given the range of activities that the RTOC handles, efficient service dispatching and effective measurement of service impacts is an essential element of RTOC operations. Service dispatching is the process by which RTOC personnel identify problems on the highway network, alert the appropriate responding agencies, and monitor progress towards resolving the problem. RTOC personnel lack an efficient ticketing system for tracking and resolving issues, or extracting performance data that would help them identify improvements to service delivery.

RTOC staff recognized a need for implementing a standardized dispatching system that would also enable them to better track service calls and extract data more efficiently for performance measurement. This system would maximize the use of data generated by the RTOC during routine operations for performance measurement instead of relying solely on external, vehicle probe-based data.

Project Development

The project development process was organized into two phases. Phase I defined the system's operational requirements, and Phase II developed and implemented the system. The project was advanced in two phases to ensure that the system feasibility and needs were thoroughly documented before beginning development and implementation activities.

Phase I of the project, completed in 2020, consisted of an inventory of data collection and management practices at the RTOC, a needs assessment that identified best practices for monitoring and proactively managing transportation infrastructure, and an alternatives analysis that identified desired performance measures and the system capabilities required to track and report those measures.

Upon completion of Phase I, the project team reevaluated its approach to Phase II of the project. The team determined that developing a system that would combine dispatching services with performance measurement would be the optimal approach for Phase II. Otherwise, any performance measure system would be dependent on outdated systems such as the Access database used to monitor and dispatch service calls. This approach would ensure that the data collected and analyzed for performance measures was derived directly from routine activities at the RTOC, and would complement external sources of operations data.

The Phase II system functions, described in greater detail below, include the Dashboard, Ticketing, Supervisor Notices, Directory, Driver, DigSafe, Reports, Settings, and Logout. These functions collectively provide operators with the tools they need to manage dispatching services at the RTOC, as well as the data sources needed to generate performance metrics from RTOC internal operations.

System Functions

Dashboard

The "landing page" of the system is the Dashboard, which provides users with an overview of current operating conditions on the regional roadway network and ready access, through a menu of options, to subpages within the system. As Figure 1 on the following page shows, the Dashboard includes a list of active incidents by ticket (see below for a more detailed discussion of the ticketing system), a map view of ongoing activities, and a messages section where users can post messages for other users or groups.

The Dashboard can also display, in graphic format, weekly summaries of the total number of tickets issued, as well as details on HELP truck tickets, Work Zone tickets, and DigSafe tickets. This information helps operators monitor and track active tickets and ensure that those tickets are resolved.
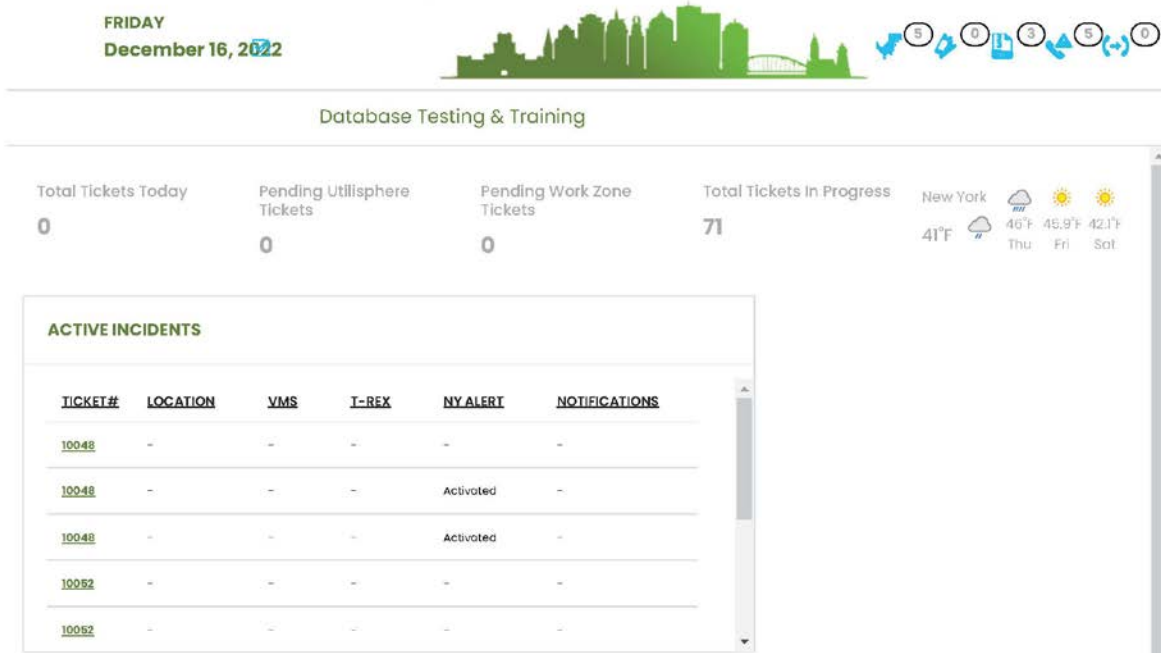
Figure 1.: *The Dashboard serves as a "landing page" for the system. It enables operators to monitor active tickets and maintain general situational awareness of current traffic operating conditions.*

Ticketing

At the heart of the performance measurement system is the ticketing function, which enables RTOC staff to create a ticket for each issue when an issue is reported to them, monitor response activity to the issue, and report on how the issue was resolved.

An operator who receives a call about an issue, whether an operations problem such as a vehicle crash, an infrastructure concern such as a pothole or dark signal, or a public safety issue such as a missing person, can create a ticket for that specific issue. Tickets can be prioritized and additional information that other operators should be aware of as they monitor the issue, such as the location and responding agency, can be entered. One key aspect of this ticketing system is that it enables operators to monitor progress on resolving the issue and ensures that an ongoing problem is monitored from start to finish. It also provides operators with up-to-date information that they can use to respond to requests about the status of an incident from outside agencies.

There are six ticket types:
- Crash – Used to report crashes and monitor incident response activities.
- DigSafe – Used to report and analyze requests for construction work that might impact the regional fiber optic network.
- Roadway/Infrastructure – Used to report problems such as potholes or debris in the road.
- Signals – Used to report malfunctioning traffic signals.
- Signs – Used to report damaged signs.
- Amber Alert – Used when an Amber Alert is issued in response to a missing person.

The ticketing function directly informs performance measurement activities. It is expected to be a crucial source of data for operations planning because it enables data about service calls to be exported in formats that can be easily manipulated for analysis purposes. Operators will be able to review ticketing data to identify trends in service calls, potential improvements to incident responses, or problem areas on a specific stretch of roadway. By providing operators with a mechanism to track the resolution of service calls, this system will help ensure that service calls are resolved in a timely and appropriate manner. This integration of the ticketing and performance measurement functions is one of the key benefits of this system and advancements over the previous Access database.

Figure 2.: *The ticketing function enables operators to create a ticket for each service call received, and track progress on that ticket to resolution. Ticketing data can be used to inform performance metrics.*

Supervisor Notices

The Supervisor Notices function enables shift supervisors to create and post notices about incidents, events, or other activities for other personnel, especially those taking over subsequent shifts, to see and be aware of. This replaces verbal or handwritten notes and enhances communication abilities among RTOC personnel by providing a single location for updates about ongoing incidents and events.

Phone Directory

The Phone Directory lists names and contact information for individuals directly involved in responding to RTOC service tickets. The directory includes NYSDOT Residencies, County DOTs, Police and Fire agencies, and specialized services such as NYSDOT Bridge Maintenance, Fleet Administration, and the Highway Emergency Local Patrol (HELP) program. Additional categories can be added in the future. This directory provides readily accessible and up-to-date contact information for RTOC staff to use when resolving tickets, and ensures that all operators have access to the same information.

Driver

The Driver function allows RTOC staff to monitor HELP truck operations. This function tracks each HELP truck's service trips, including start and end times and mileage. It monitors whether the HELP truck is active and can provide insights into HELP operations for planning and decision-making purposes.

Digsafe

Digsafe is a mapping function that identifies the location of fiber optic lines along the region's roadways. If construction work requires excavation in the vicinity of a roadway, RTOC operators can use this function to determine whether digging can be done safely without potential damage to the fiber optic lines.

Reports

The Reports function tracks the number and type of tickets that are issued each day. This enables operators to better understand the service calls that they receive and identify patterns in ticketing and service dispatching. Data can be exported to PDF or Excel format to allow for more detailed analysis of service trends.
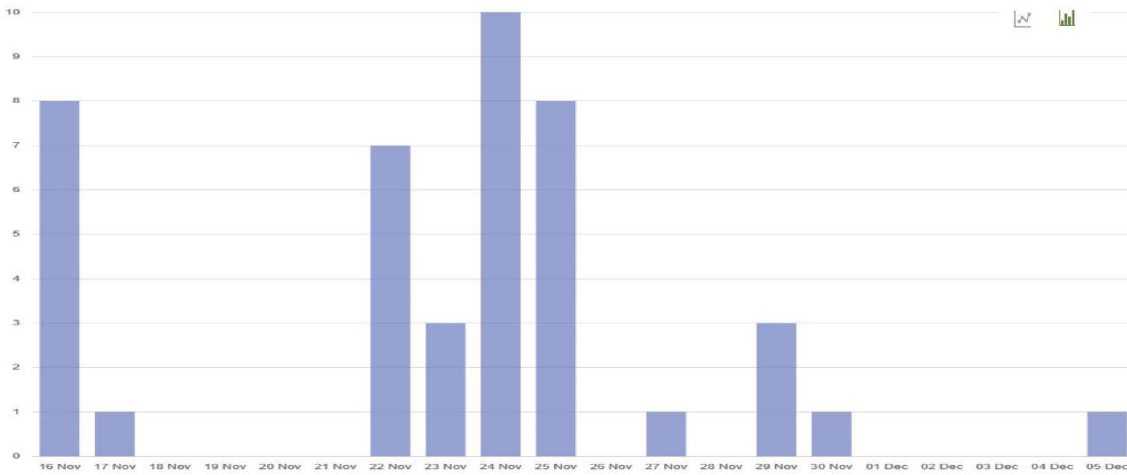
Figure 3.: *The Reports function enables RTOC operators to analyze and better understand service trends.*

Settings

The Settings function identifies each database user by jurisdiction and enables users to manage their access to the database.

Logout

The final element of the Dashboard menu is the user logout function.