



# Office of Information Technology Services

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## Disaster Preparedness Asset Tracker (DPAT) Mobile App, Website Administration Portal, & DPAT Dashboards

Project Initiated: October 2017  
Project Completed: December 2017

Category: Data Management, Analytics, & Visualization

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## **Executive Summary**

In October 2017, New York State embarked upon a project to quickly and accurately inventory New York State agency and authority-owned physical assets (vehicles, boats, trailers, etc.) which would be needed during an emergency. The New York State Office of Information Technology Services (ITS) identified a Mobile, Web, and Cloud Development Project Team to design and deliver a **Disaster Preparedness Asset Tracker (DPAT) Mobile App** which ITS could rapidly deploy across the State.

The Project Team worked around the clock to develop the App for use on iPads (iOS devices), leveraging a SQL server database. Simultaneously, the ITS End User Experience Group purchased iPads and worked quickly to distribute the devices to the participating agencies that would be logging their assets.

ITS released the App on October 10, 2017, and state agencies began uploading inventory information across New York State.

Following the launch of the App, the ITS Chief Technology Office team began an intense round of development, cleansing the collected data and creating **DPAT Dashboards** to visualize the data collected from the asset entries. Their work enabled instant visualizations of tracked asset data, such as asset types, location, deployment status, capacities, and other vital information necessary to New York's emergency responders.

As agencies used the App to track their assets and the Dashboards to analyze data, project stakeholders identified additional requirements. The project team quickly made multiple updates to improve the App to meet these new needs.

Enhancements included the development of the **DPAT Website Administration Portal** and a newly updated App which is available for use on authorized New York State iPhones and iPads. The portal allows authorized users to access and edit agency asset data using a website application as well as continuing to use the enhanced Mobile App.

The DPAT Project has vastly improved the data available to New York State officials for decision making. The up-to-date information, viewable in easy-to-read dashboards, allows quick analysis to identify problems, push for solutions, and mobilize resources in the event of an emergency in New York.

**Disaster Preparedness Asset Tracker Mobile and Web Application**  
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**Concept**

Hurricanes, earthquakes, fires, floods and other disasters are possible, and often inevitable, and can occur in every U.S. state and territory. The ability of New York State to deal effectively and efficiently with a disaster depends on its disaster preparedness. Accurate information regarding available State assets is critical to mounting a quick and effective response.

**Mobile Technology**

When ITS began evaluating New York State asset data collection options, a few things were clear. First, accurate asset location information was crucial. Location information needed to be reliable and easy for agencies to update. Secondly, the data collection process needed to be mobile. Considering these two major requirements, it was evident that a mobile application best suited the project needs.

Currently, the App and Website Administration Portal require agencies to collect the following data about each of their assets at regular intervals:

Asset Type	Asset Sub Type	Asset Capacity
VIN Number	License Plate Number	Serial Number
Registration Number	State Capital Tag Number	Current Mileage
Asset Images (multiple)	Owning Agency	Performance Standard
Confirmation of Performance	Deployment Status	Mode of Deployment

In addition, data is collected to track whether the asset in question fits the following classifications:

Off-Road Capable	GPS-Enabled	Engine Starts
Law Enforcement Equipped	Special Operator License Req.	DMV Registered

To ensure the correct entry of asset information, the ITS team worked to enter all dependent data into value dependent dropdown lists to lead users to enter the correct information for each asset type, subtype, and capacity.

Use of required fields, dynamic field validation, and radio button technology throughout the asset entry form ensures the uniform collection and accuracy of data in each field.

**Website Administration Portal**

The DPAT Project began solely as a mobile App, but soon it became evident that agencies needed a way to verify existing information, update information, and enter new information, without relying only on the mobile App.

After understanding the needs and concerns of stakeholders using the App, the Mobile, Web, and Cloud Development team went to work constructing the Administration Website Portal.

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A complement to the mobile App, the Administration Website Portal contains identical fields to the mobile App for entering assets. The only difference is that the Administration Website Portal is designed for use only by authenticated and approved users to enter and verify information on behalf of their agency.

The Administration Website Portal includes dashboards which are used by agency administrators to identify agency assets that are Out of Date, missing images, or may be duplicate records. The new Administration Website Portal provides an easy-to-use method to certify that information is accurate. The availability of accurate information will help improve New York State's response in the event of a disaster.

### Raw Data into Usable Information

Information collected from the App and the Administration Website Portal also had to be boiled down into easy to understand information for stakeholders.

Using collected data, the ITS Chief Technology Office worked with the data collected to create 20 easy-to-understand dashboards for agencies to help them quickly understand the information and make informed decisions.

### Significance

New York State is leading the way in disaster preparation and disaster response with a reliable mobile method to collect asset information (App), a portal to verify and update asset information (Administration Website Portal), and a method to visualize information to make decisions (**DPAT Dashboards**).

### Data Collection

Collecting information can be a complex process. By standardizing the method of collection and validating fields, information is more reliable. With the creation of the App and Administration Website Portal, fields are validated, required fields are added consistently, mobile technologies are used to collect new information (GPS data), and all information is updated in real-time, despite the large number of contributing individuals.

### Data Visualization and Analysis

The value of compiled data is only realized when it is fully understood; and in a disaster, understanding must come quickly to those whose duty it is to respond.

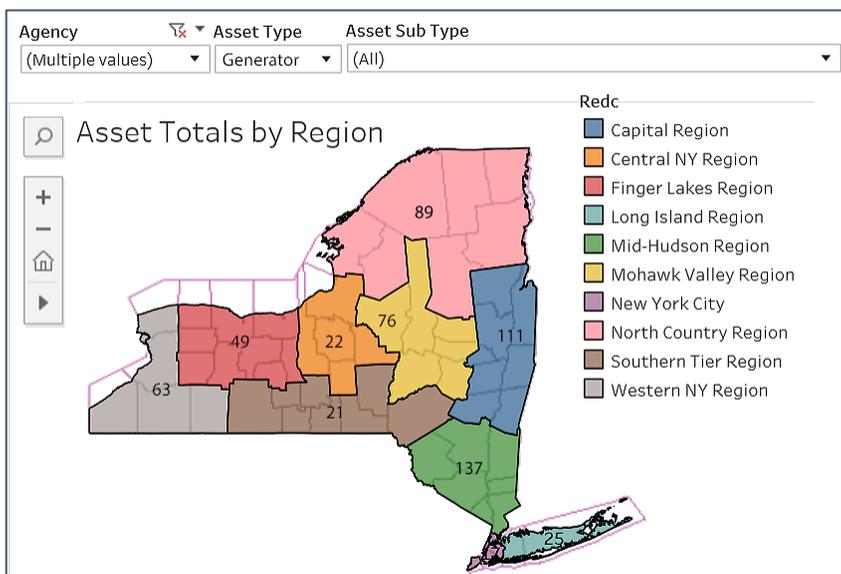
Extracting meaning from data isn't always easy, or pretty. Reading rows and columns of data displayed on a screen or printed on paper can be a daunting way to try to access the information needed from a database. Another problem with raw data is that input errors can cause inaccuracies that must be eliminated to ensure optimum reliability of the data resource.

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To maximize data accuracy, the ITS Chief Technology Office immediately began cleansing operations on data entered into the asset database. Fully aware that visualization is the key to understanding data, the developers designed visualizations of New York's disaster asset data that would best illustrate the pristine asset data now available from the SQL database.

Twenty informational dashboards were created using asset characteristics of interest, including type, subtype, location, mode of deployment, license plate number, agency ownership, mobility, maintenance, location, and more. Agencies can now explore compiled data to deliver vital information needed about State assets that helps responders prepare for a disaster.

The Dashboards allow agencies to drill down for accurate snap shots of individual assets complete with pie charts and detailed tables. Agencies can filter, download, and manipulate a wide range of information as needed.



For example, if sudden storms and flooding are expected in the Finger Lakes region which may cause power outages, officials can use the *Asset Totals by Region* dashboard (left) so that responders can immediately see how many generators are available locally and in surrounding areas.

The *Asset Inventory by Agency* maintenance dashboard provides a pie chart to illustrate the percentage of deployable rolling asset availability, agency ownership, capacity, and

subtype.

Detailed information in sortable columns allow users to search for specific assets. The ITS Chief Technology Office also built an image link in the dashboard, providing visual confirmation that the item is the correct asset.

By using the Dashboards, stakeholders can see all New York State asset information at a glance, in real time. These visualizations demonstrate New York State's disaster preparedness.

### Impact

In summary, the App, the Administration Website Portal, and Dashboards developed and implemented by ITS, have radically changed the way the State of New York collects and interprets information about available State assets and prepares for potential disasters wherever they may occur across the state.

**Disaster Preparedness Asset Tracker Mobile and Web Application**  
**Category: Data Management, Analytics, & Visualization**

Disaster response in New York State is now faster, easier, and more effective because these tools are in use. This innovation, brought to the fore by a dedicated team of ITS employees has brought efficiency, and effectiveness to this necessary and critical process.

The insights provided by the availability and use of these innovative tools are only just beginning. The potential for the further development and updates to these valuable tools are possible, will only serve to enhance service delivery to the citizens and businesses of New York State.