

## 2018 LGFCU Excellence in Innovation Award Project Evaluation

<b>Project ID</b>	GG-6
<b>Title of Program</b>	Program to Reduce Emergency Incident Travel Times
<b>Program Category</b>	
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<b>Implementation Date</b>	1-Aug-17
<b>FLSA Designation</b>	Non-exempt
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### Description of Productivity Improvement

New Hanover County Fire Rescue identified challenges with emergency incident travel times in portions of the county. The department completed an analysis of the area, referred to as the pilot district. Geographic information system (GIS) time travel models were compared to actual response data and after reviewing historical response data back to 2012, it was apparent that travel times within the pilot area were increasing each year.

So New Hanover County initiated a squad pilot program, which ran for 19 weeks beginning on August 1, 2017, with a priority on accurate and consistent data. A quick response vehicle was in service from 7 a.m. to 7 p.m. daily and it was stationed at strategic locations within the pilot district. The unit did not have a specific home base located in the pilot district and responded to all incidents within the designated area while in service.

After 19 weeks, the data proved that placing a unit in the pilot area will significantly help reduce travel times. This reduction provides more effective service for the emergency needs of citizens. With this evidence, the pilot program has led the county to consider a more permanent solution for efficient emergency service delivery.

### **Description of why this project was initiated**

During a review of empirical data as a part of developing a Community Risk Assessment for the county, New Hanover County Fire Rescue (NHCFR) identified an urban area where travel times appeared to be higher than expected. When comparing modeling with historical data, results indicated that emergency units were not able to arrive in a specific northern area in a predictable manner. Travel time is measured from when fire units are responding to the incident to arrival of the first unit.

This specific area of the county is currently served by two remote fire stations. Travel time is impacted by traffic, interconnectivity, and the location of the incident related to the position of the responding equipment. Fire service responses include fire, rescue, and medical incidents. The problem was that fire services could not consistently arrive on scene of an incident inside the established benchmark times within a specific geographic response area. So there was a gap in the availability of service.

### **Quantifiable results (sustainability, cost savings, cost avoidance and/or a higher level of service).**

#### **Indication of what resources were used and what was done with any accrued time savings**

This NHCFR pilot program's intention was to reduce emergency incident travel times, and the department achieved that goal. The program resulted in saving an average of three minutes on the travel time per incident. When comparing the pilot program data to historical data, the pilot program increased the percentage of time that the modeled travel time was met from 49.5% to 64.7%. The measurements for success included a noticeable reduction in incident travel times on average and at the 90th percentile. The data from the pilot program indicates that a more permanent station in the pilot program area would lead to a reduction in travel time and arriving at an incident in a faster timeframe.

The cost for this program to be implemented was minimal, with the exception of staff cost for the employees assigned to the unit. An existing fleet vehicle was modified to accommodate the equipment and supplies needed for the staff to be successful. Staff hours for the program were just under 3,200 man hours, which cost the department approximately \$59,000. Fuel cost was slightly over \$2,500. Equipment and supply costs were \$750 for startup (medical supplies were recovered from existing medical transport units).

### **Other descriptive information**

In 2017, NHC Fire Rescue identified challenges with emergency incident travel times in portions of the county. The department completed an analysis of the area, referred to as the pilot district. Geographic information system (GIS) time travel models were compared to actual response data and after reviewing historical response data back to 2012, it was apparent that travel times within the pilot area were increasing each year.

The department identified 3 potential areas to focus on for improvement of travel times within the specified area.

- 1) Verify that travel times were not affected by emergency units being out of position and that the closest resource was allocated towards the incident. An additional data review confirmed that the primary unit/closest unit was being dispatched to the area.
- 2) In road network. Interconnectivity of the roadways from growth within the community appear to hamper travel times. Subdivisions developed in linear fashion without collector streets add to this challenge. With roadways already in place, addressing access roads would be cost prohibitive.
- 3) Utilizing a quick responding vehicle (QRV) within the target area during peak incident occurrence times. Analyzing call data showed the area's highest incident types (emergency medical) occurred between the hours of 7 a.m. and 7 p.m. every day of the week (each day saw consistently similar incident counts).

So a pilot program was developed with the goal of reducing travel times by placing a QRV within the target area. The idea is that by placing resources closer to those in need of the services, there would be less delay in initial care.

The unit was staffed with two emergency medical credentialed firefighters from 7 a.m. to 7 p.m., seven days a week. The QRV was a small pickup truck with a service body. The unit was given a designation of Squad 16 to represent the geographic district it was serving. A basic assortment of firefighting tools, medical equipment, AED, and personal protective safety equipment was added to the vehicle. A laptop and a tablet with cellular capabilities were also issued as equipment for emergency dispatch information and report data entry while in the field.

Once personnel arrived for duty, they remained within the pilot area unless they were responding to an incident or were instructed to leave by the shift supervisor. The squad was assigned as a roving vehicle that did not have a home station or facility. Predesignated locations were identified for positioning of the squad when not on an assignment, including public areas such as parks and schools.

When the squad was not responding on an incident, they also performed other fire service duties that included pre-incident surveys of local businesses within the target area. Meals and other activities were limited to within the pilot area during the time of on duty service.

After 19 weeks of this pilot program, the data proved that placing a unit in the pilot area will significantly help reduce travel times.