

2020 NACo Achievement Award Application

Yorktown Trolley: Riding with Technology

Old School Charm... with Modern Technology

York County, Virginia

Abstract of the Program:

The Division of Community Services has integrated new technology on its trolleys, which services citizens and visitors to Historic Yorktown, Virginia, and to the Yorktown Waterfront. This ETA Spot system from ETA Transit incorporates multi-layer tracking technology to provide real-time information to passengers via a dedicated mobile app and website; enhanced data collection, compilation, and reporting; as well as an infotainment system that provides riders with the most current information about upcoming events, local attractions, and businesses along the Trolley route.

When we embarked on this endeavor, we had specific objectives in mind. First and foremost was the goal to provide a superior level of customer service by enhancing and streamlining the flow of information to trolley riders. Next, we sought to gather and compile data about the riders, which is not only important to measure the success and efficiency of the program, but is also a requirement of being partially funded from a federal grant. Lastly, we looked to stimulate our local economy by increasing visitation to our town's small businesses and offering a more comprehensive approach to the promotion of events and activities.

Upon the full integration of this system into the trolleys—the program immediately saw fewer rider inquiries in the form of calls and emails; increased accuracy and efficiency in data collection; boosted ridership; and greater community engagement. In essence, the trolley has become an attraction in and of itself. Additional features include an upgraded climate control system which include personalized adjustable air vents; a wheelchair lift; and a stabilized chassis system to provide a smoother ride for all passengers.

The Problem/Need for the Program

As Historic Yorktown and the Yorktown Waterfront continue to see higher attendance at events, year-over-year growth in museum ticket sales, and an overall greater awareness of Yorktown as part of the Greater Williamsburg area—there has been a direct correlation to increased trolley

ridership. The Yorktown Trolley Service was established in 1999, with one trolley, to connect major points of interest in the area as well as address limited parking at the waterfront. In its first year of operation, ridership was roughly 13,000 passengers. Fast forward to 2019, where we ran multiple trolleys each day during peak season, and ridership increased to just shy of 95,000 individuals. With such growth in activity, the number of inquiries increased exponentially: requests for exact pick-up and drop-off locations; wait times at specific areas; and what businesses and amenities were located near each stop. These requests were made through phone calls, emails, and direct messages to our social media channels. In turn, a considerable amount of staff time was dedicated to filtering through and responding to the uptick in requests for information.

Another benefit of the new Trolley and its updated technology has been the increased volume of data collection and reporting—a mandate for York County due to receipt of partial funding for the project through federal grants. We track service/non-service hours and mileage as well as ridership. Up until the purchase of the Trolley, that analysis was done manually—adding another job responsibility to staff members. It was often difficult to achieve complete accuracy due to the high volume of data that needed to be collected and tracked on a regular basis.

Description of the Program

As the Yorktown Trolley service has grown, so has the need to streamline communication with customers and to enhance data collection/compilation. During our preliminary search for a company that could accommodate all of these needs in one package, it was quickly evident that ETA Transit was the right choice. Their multi-layer system provided a solution and deliverable for each of our areas of improvement.

The ETA Spot system allows for communication with customers on a multi-platform level. Through a mobile app and a dedicated website, we are able to provide the customer with a wealth of knowledge on the operation of the trolley as it pertains to the users of the service. The interface features an interactive map which tracks the movement of the Trolley in real time. This feature also provides an estimated time of arrival for each individual stop, allowing the customer to more efficiently access the complimentary transportation, as well as plan their route around Historic Yorktown. This eliminates some of the need for a passenger to ask the most frequent question of when the Trolley will be arriving at the stop in which they are waiting. Through the mobile app and dedicated website, the user can also access information about each stop including which attractions are in close proximity; and which amenities are available, such as restrooms, water fountains, benches, trashcans etc. The app also provides a description of the surrounding area, points of interest at each stop, and photos.

An additional unique capability of ETA Spot is its ability to load multiple routes to the user's map interface to inform the customer which route is active. This is specifically helpful during road closures when the Trolley is forced to run a modified route—whether it's because of a special event, a routine maintenance project, or a public safety issue. This eliminates an issue where a customer may arrive at a stop that is not being serviced at that time. The mobile app and website also feature a scrolling alert box that can be utilized to pass along pertinent information about the service, any special weather alerts, or other public safety announcements.

In keeping with the theme of streamlined communication for the passenger, ETA Spot also includes an infotainment system. LCD monitors located throughout the trolleys display a custom playlist of videos, images, and graphics which highlight area attractions, shopping options, dining opportunities, and upcoming special events. This system is also capable of geo-targeted messaging which would play location-specific content when the Trolley enters a predetermined geo-fence. For example, as the Trolley arrives at one of the area's museums, the system would feature media specific to that location including exhibitions, interactive programming for families, and even special ticket rates. This is an innovative means of promoting economic development in the area and continuing to build and maintain our strong relationships with community partners.

As important as enhanced customer engagement is to the Trolley Service, as briefly outlined, so is the data collection and reporting—in particular mileage, hours, and ridership numbers. Previously, the hours of service and service mileage were recorded manually by the driver through a daily log sheet. With ETA Spot, the driver simply logs in to the system via the Mobile Data Terminal as soon as he or she begins their shift, and all of the information is collected digitally. The system differentiates between service and no service activity by Trolley location. Once the trolley enters the geo-fenced service area, all activity is determined as in-service. Any activity outside of the geo-fenced area is recorded as non-service activity.

To record ridership, drivers would manually click a counter for each rider entering the Trolley, and on busier days, with passengers entering two doors simultaneously, it was often difficult to get a truly accurate count. ETA Spot addresses this issue with automatic passenger counters, which are cameras mounted above each door that link to the vehicle logic unit and run an algorithm that detects both entries and exits of the Trolley. This method is not only far more accurate, but it also allows for a deeper analysis of that ridership data. We can see which individual stops are used more frequently as well as identify peak times for trolley utilization during the tourist season.

Additionally, ETA Spot provides an upgraded announcement system. Instead of the driver announcing the current stop and the next one on the route—the system automatically provides that information to the passenger. These announcements are made both visually and audibly,

meeting ADA requirements for transit. Secondly, we were able to upgrade our video surveillance. The new system features an eight-camera surveillance monitoring system and a DVR recorder which can be accessed remotely via automatic downloads. This ensures the safety of not only the passengers but the drivers as well.

Potentially the most innovative feature of the ETA Spot system is the web-based administrative interface. This interface ties all of the features together and allows us to manipulate multiple features remotely. For example, we used to update our media by producing a new DVD each time there was a change to the content. With the ETA system, these updates can be made through remote log-in, saving valuable time and resources. The ETA Spot system has also provided more advanced analytics than we were previously able to capture. With the automatic data collection and ease of accessing detailed reporting, we are provided insight into the operation, which results in a better product for the citizen/tourist and increased efficiency of the operation as a whole.

We decided to embark on this new program in the fall of 2018, when purchasing our most recent trolley. The trolleys have a minimum useful life of ten years and we wanted to ensure we were incorporating cutting-edge technology, which is easily upgradeable, to carry the operation into the future. The new trolley was delivered in May of 2019 and the County's Vehicle Maintenance division worked with ETA Transit on the final installation of the system as well as testing and commissioning. After a few weeks of ensuring the system was performing properly, the ETA Spot was introduced to the public on July 4, 2019. Based on the success of the program to this point, the County of York is in the process of upgrading the existing trolley in our fleet and we plan to also feature ETA Spot on the new trolley we are purchasing in 2020.

Cost of the Program

The costs incurred to the County of York were partially offset by the replacement of a previous system that only performed a fraction of the functions that ETA Spot currently does. Additionally, some of the capital and annual costs, such as digital modules and licenses, will not be incurred as additional trolleys are introduced into the fleet.

The cost of the program is as follows:

Capital Cost: (hardware, software, installation training, and first year of annual costs)

Fixed Route Base Package = \$19,289

On-Board Announcement Package = \$4,821

Automatic Passenger Counter Package = \$6,061

In-Vehicle Infotainment Package = \$12,779

Mobile Video Surveillance Package = \$5,632

Total Capital Cost = \$48,537

Annual Cost: (incurred each additional year after initial capital cost)

Fixed route base package annual subscription and maintenance = \$3,460

On-board announcements package annual subscription, and maintenance = \$96

Automatic passenger counting package annual subscription and maintenance = \$96

In-vehicle infotainment package annual subscription and maintenance = \$480

Total annual cost = \$4,132

The Result/Success of the Program

Despite the relatively short period of time the program has been active, the success is apparent. When analyzing how the implementation of this particular technology has made this county process/program more efficient, we first look at the streamlined flow of information to our customers and citizens. With ETA Spot, we have seen a sharp decline in calls and emails requesting answers to questions that are now answered through a mobile app and dedicated website. Furthermore, with real-time analytics, we are able to provide more accurate and timely information to our customers. We have also gained a valuable means of informing the public of vital service information such as road closures, unforeseen changes in the route, and public safety alerts.

We are also able to drive economic development with the ability to update featured media – subsequently increasing visitation and demonstrating significant growth for several museums, shops, restaurants, and special events. As mentioned, this information was previously updated through an antiquated DVD system and the strain on staffing resources meant it was done on a less frequent basis.

ETA Spot has also opened the door to advanced data collection and reporting. This technology allowed us to remove the human factor from the collection and reporting of analytics, many of which are required for federal reporting. With passenger counts, we noticed a considerable

increase in accuracy as there would be a 30 to 50 ridership count variance between the manual counting and digital counting. We have also seen a marked increase in efficiency in data compilation and reporting. Previously, drivers would fill out daily log sheets, which then had to be collected to have the data manually compiled into spreadsheets in preparation for required reporting. Now the data is automatically recorded and reported, resulting in a vast savings in staff time and resources. This has also allowed drivers to focus on safety and customer service as they no longer have to be concerned with data collection.

Worthiness of Award

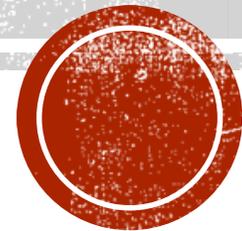
The Yorktown Trolley and its accompanying technology has taken the guest experience provided by the County of York to the next level. The complimentary transportation service is in its 20th year of providing a temperature-controlled, wheelchair accessible way for all visitors to get around town and explore the museums, restaurants, and attractions. And the newest addition to the fleet, along with its creative use of modern technology and the implementation of the ETA Spot app, has not only established cost-saving measures in the form of streamlined resources, data analysis, and staff time for the county—but it has helped the Tourism Development office extend a warm welcome to citizens and tourists.

Through the app and desktop tracking software, visitors to Yorktown can track the Trolley's location in real time; they can learn information about nearby businesses and attractions; and they can plan for return trips to attend concerts, festivals, and seasonal events. It's all right there at their fingertips. They no longer have to guess how long they'll be waiting at a trolley stop—maybe out in the pouring rain or blaring heat of summer. They can learn more about where to spend their money—where to shop, eat, or explore during their stay. Those decisions in turn stimulate the local economy and support community partners. And through the infotainment system, they can be inspired or intrigued about upcoming events and offerings to return to Yorktown in the near future.

ALL ABOARD THE YORKTOWN TROLLEY

Old School Charm... with Modern Convenience

County of York, Virginia





ALL ABOARD THE YORKTOWN TROLLEY

ETA Transit & ETA Spot: Real-time Tracking of Trolley (Mobile and Desktop options available)

Infotainment System: videos, pictures, and infographics about attractions, upcoming events, and other reasons to visit the destination

ADA Accessible: Wheelchair Lift

Temperature-controlled Environment – individual adjustable air vents at each seat.



Reports :

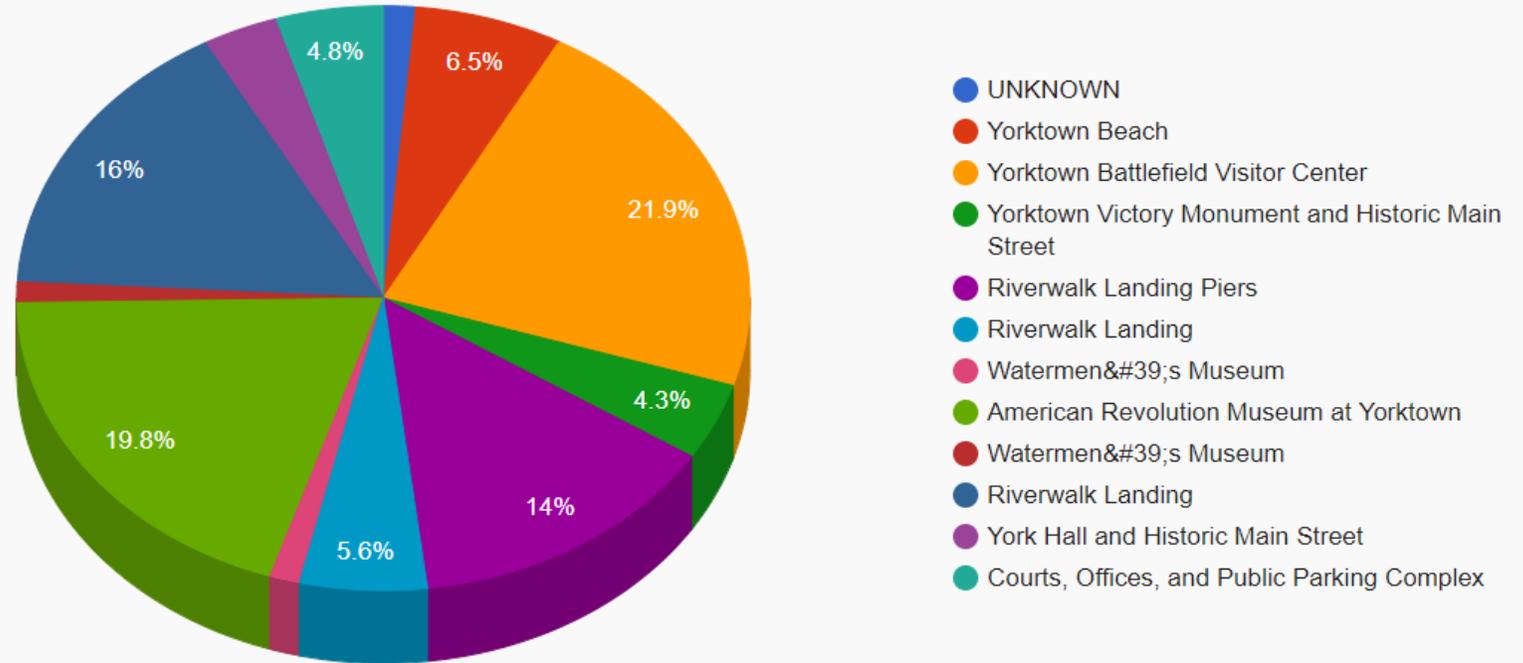
- New Report
- Reload Report
- Re-run Report
- Print
- Get CSV

- Passenger APC Histogram
- APC Pie Chart by Station

Start Date: 08/25/2019, End Date: 08/31/2019

- Map
- Reports
- View Schedules
- Infotainment
- Administration

APC Summary by Station



Automatic Passenger Counter: Which Spots are Most Utilized



Reports :

- New Report
- Reload Report
- Re-run Report
- Print
- Get CSV

- Passenger APC Histogram
- APC Pie Chart by Station
- NTD Summary Report
- Vehicle Set Route
- APC Summary by Station

Stop: All, Start Date: 08/25/2019, End Date: 08/31/2019

Yorktown Victory Monument and Historic Main Street	12A-1:30A	1:30A-3A	3A-4:30A	4:30A-6A	6A-7:30A	7:30A-9A	9A-10:30A	10:30A-12P	12P-1:30P	1:30P-3P	3P-4:30P	4:30P-6P	6P-7:30P	7:30P-9P	9P-10:30P	10:30P-12P	Total
Total Passengers	0	0	0	0	0	0	7	7	16	10	43	5	2	0	0	0	90
%	0%	0%	0%	0%	0%	0%	7.78%	7.78%	17.78%	11.11%	47.78%	5.56%	2.22%	0%	0%	0%	100%
Average/Day	0	0	0	0	0	0	1	1	2	1	6	1	0	0	0	0	12

Yorktown Beach	12A-1:30A	1:30A-3A	3A-4:30A	4:30A-6A	6A-7:30A	7:30A-9A	9A-10:30A	10:30A-12P	12P-1:30P	1:30P-3P	3P-4:30P	4:30P-6P	6P-7:30P	7:30P-9P	9P-10:30P	10:30P-12P	Total
Total Passengers	0	0	0	0	0	0	8	11	25	35	49	10	0	0	0	0	138
%	0%	0%	0%	0%	0%	0%	5.80%	7.97%	18.12%	25.36%	35.51%	7.25%	0%	0%	0%	0%	100%
Average/Day	0	0	0	0	0	0	1	2	4	5	7	1	0	0	0	0	20

Yorktown Battlefield Visitor Center	12A-1:30A	1:30A-3A	3A-4:30A	4:30A-6A	6A-7:30A	7:30A-9A	9A-10:30A	10:30A-12P	12P-1:30P	1:30P-3P	3P-4:30P	4:30P-6P	6P-7:30P	7:30P-9P	9P-10:30P	10:30P-12P	Total
Total Passengers	0	0	0	0	0	0	28	77	115	98	112	32	0	0	0	0	462
%	0%	0%	0%	0%	0%	0%	6.06%	16.67%	24.89%	21.21%	24.24%	6.93%	0%	0%	0%	0%	100%
Average/Day	0	0	0	0	0	0	4	11	16	14	16	5	0	0	0	0	66

York Hall and Historic Main Street	12A-1:30A	1:30A-3A	3A-4:30A	4:30A-6A	6A-7:30A	7:30A-9A	9A-10:30A	10:30A-12P	12P-1:30P	1:30P-3P	3P-4:30P	4:30P-6P	6P-7:30P	7:30P-9P	9P-10:30P	10:30P-12P	Total
Total Passengers	0	0	0	0	0	0	1	5	14	14	16	18	0	2	0	0	70
%	0%	0%	0%	0%	0%	0%	1.43%	7.14%	20%	20%	22.86%	25.71%	0%	2.86%	0%	0%	100%
Average/Day	0	0	0	0	0	0	0	1	2	2	2	3	0	0	0	0	10

Watermen's Museum	12A-1:30A	1:30A-3A	3A-4:30A	4:30A-6A	6A-7:30A	7:30A-9A	9A-10:30A	10:30A-12P	12P-1:30P	1:30P-3P	3P-4:30P	4:30P-6P	6P-7:30P	7:30P-9P	9P-10:30P	10:30P-12P	Total
Total Passengers	0	0	0	0	0	0	0	4	2	2	16	4	0	0	0	0	52
%	0%	0%	0%	0%	0%	0%	0%	7.69%	3.85%	3.85%	30.77%	7.69%	0%	0%	0%	0%	100%



Reports :

- [New Report](#)
- [Reload Report](#)
- [Re-run Report](#)
- [Print](#)
- [Get CSV](#)

- [Passenger APC Histogram](#)
- [APC Pie Chart by Station](#)
- [NTD Summary Report](#)
- [Vehicle Set Route](#)
- [Vehicle Engine Time Summary](#)
- [Arrivals - Departures by Date \(Run-Time\)](#)

Asset: All, Route: All, Start Date: 08/25/2019, Start Time: 7:00 AM, End Date: 08/31/2019, End Time: 11:00 PM

 Show entries

 Search:

Date	Number	Vehicle ID	Route	Station	Arrival	Departure	Dwell (sec)	Comment
	HYTS-0826_1	4	Historic Yorktown Trolley Service	Riverwalk Landing		10:49:08		
	HYTS-0826_5	4	Historic Yorktown Trolley Service	American Revolution Museum at Yorktown		12:53:05		
2019-08-25 09:54:40	HYTS-0825_1	4	Historic Yorktown Trolley Service	Yorktown Battlefield Visitor Center	09:54:40	09:54:40		
2019-08-25 09:57:19	HYTS-0825_1	4	Historic Yorktown Trolley Service	Yorktown Victory Monument and Historic Main Street	09:57:19	09:59:36	137	
2019-08-25 10:00:16	HYTS-0825_1	4	Historic Yorktown Trolley Service	Yorktown Beach	10:00:16	10:01:42	86	
2019-08-25 10:01:52	HYTS-0825_1	4	Historic Yorktown Trolley Service	Riverwalk Landing Piers	10:01:52	10:02:19	27	
2019-08-25 10:02:29	HYTS-0825_1	4	Historic Yorktown Trolley Service	Riverwalk Landing	10:02:29	10:03:09	40	
2019-08-25 10:03:18	HYTS-0825_1	4	Historic Yorktown Trolley Service	Watermen's Museum	10:03:18	10:03:44	26	
2019-08-25 10:04:34	HYTS-0825_1	4	Historic Yorktown Trolley Service	American Revolution Museum at Yorktown	10:04:34	10:06:28	114	
2019-08-25 10:07:09	HYTS-0825_1	4	Historic Yorktown Trolley Service	Watermen's Museum	10:07:09	10:07:37	28	
2019-08-25 10:07:47	HYTS-0825_1	4	Historic Yorktown Trolley Service	Riverwalk Landing	10:07:47	10:08:36	49	
2019-08-25 10:09:06	HYTS-0825_1	4	Historic Yorktown Trolley Service	York Hall and Historic Main Street	10:09:06	10:09:42	36	
2019-08-25 10:10:02	HYTS-0825_1	4	Historic Yorktown Trolley Service	Courts, Offices, and Public Parking Complex	10:10:02	10:10:39	37	
2019-08-25 10:12:35	HYTS-0825_1	4	Historic Yorktown Trolley Service	Yorktown Battlefield Visitor Center	10:12:35			
2019-08-25 10:13:26	HYTS-0825_2	4	Historic Yorktown Trolley Service	Yorktown Battlefield Visitor Center	10:13:26	10:13:26		
2019-08-25 10:15:48	HYTS-0825_2	4	Historic Yorktown Trolley Service	Yorktown Victory Monument and Historic Main Street	10:15:48	10:22:13	385	
2019-08-25 10:22:53	HYTS-0825_2	4	Historic Yorktown Trolley Service	Yorktown Beach	10:22:53	10:24:21	88	

Arrival and Departure Times at Each Stop – Broken Down by Date



SPOT Fri 28th 8:33:26 AM Help Assets Routes

Infotainment : Download bund

Map Reports View Schedules Infotainment Administration

Planning Places Playlists **Simulation**

Simulation⁹

Schemes: Main scheme: Fullscreen

Player controls: 1x 2x 5x

Location controls: 0.5x 1x 3x

Gloucester Point, Yorktown, SR 1020, VA 238, SR 238, SR 1020, VA 238

16:9

VISIT *Yorktown* VIRGINIA www.visityorktown.org

Repeating playlists: **Default**

Playback history: Historic Yorktown _ VacationChannel _ 2019 Update_Reduced

Customizable Infotainment Interface – Where We Can Upload and Geotag Photos, Videos & Infographics



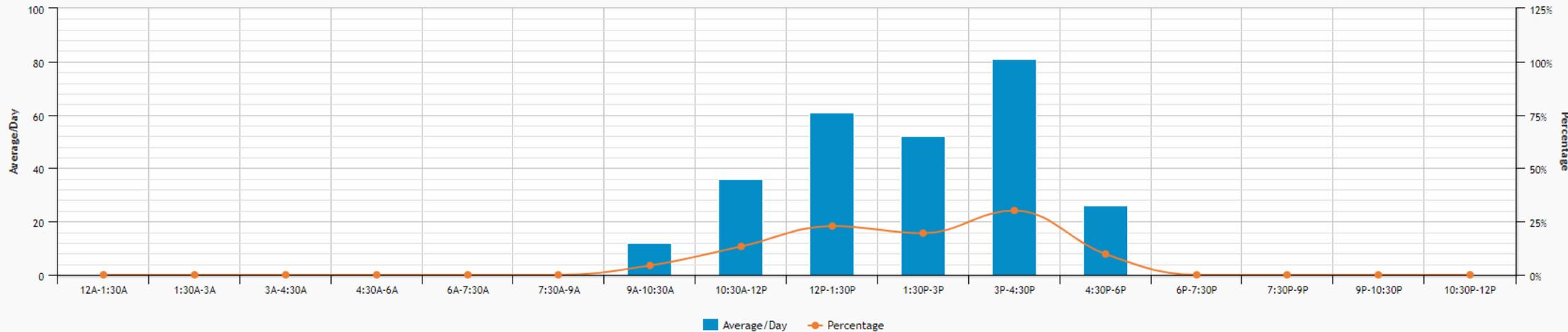
Reports :

- New Report
- Reload Report
- Re-run Report
- Print
- Get CSV

Passenger APC Histogram

Historic Yorktown Trolley Service

Historic Yorktown Trolley Service Passengers



Concert Route

Concert Route Passengers



Trolley Service Broken Down by Reg Route vs Modified Route for Summer Concert

