



FINAL

Rail Transit State Safety Oversight (SSO) Program 2016 Annual Program Status Report



**Office of Transit
1980 West Broad Street
Columbus, Ohio 43223**

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Executive Summary

This 2016 Annual Program Status Report highlights activities and accomplishments from the Ohio Department of Transportation (ODOT) Rail Transit State Safety Oversight (SSO) program, focused on calendar year 2016. This annual report is required by the Federal Transit Administration (FTA) SSO Rule. The Ohio rail transit agencies (RTAs) included as part of this SSO program are the Greater Cleveland Regional Transit Authority (GCRTA) – heavy and light rail systems, and the City of Cincinnati and Southwest Ohio Regional Transit Authority (SORTA) – the Cincinnati Bell Connector streetcar system.

FTA's Transit Safety Program Enhancements

In July 2012, requirements and expectations of the FTA's transit safety program were significantly changed and enhanced as part of the surface transportation legislation, Moving Ahead for Progress in the 21st Century (MAP-21). These changes and enhancements have caused FTA's Office of Safety and Oversight (TSO) to promulgate rulemakings (two remain to be finalized), including the following:

- **Public Transportation Safety Program, effective September 12, 2016** – explains FTA's policy and requirements for a National Safety Plan and its content, implementation of a transit-specific Safety Management System (SMS), and FTA leadership and participation in investigations and safety oversight. This rulemaking is finalized as 49 CFR Part 670.
- **National Safety Plan, January 2017** – introduces the use of the transit-specific SMS framework, safety performance management, and concepts of managing risks and assuring safety performance at transit agencies that are proactive and based on SMS. This plan also addresses requirements for minimum standards for safety at transit agencies.
- **Safety Certification Training Program** – requires safety-related training for specific FTA, SSO, and RTA staff responsible for safety and oversight. Currently, this program is in regulation as an **Interim Final Rule (IFR)** and a notice for proposed rulemaking (NPRM) that is in process for a Final Rule as 49 CFR Part 672, expected later in 2017.
- **Transit Asset Management (TAM), July 2016** – the FTA has completed rulemaking for their Transit Asset Management (TAM) processes that include state of good repair (SGR) and data collection, prioritization, and data delivery to the National Transit Database (NTD). The TAM final rule is 49 CFR Part 625 and changes made for TAM in the NTD requirements are in final rule as part of 49 CFR Part 630.
- **State Safety Oversight (SSO), effective April 15, 2016** – this new regulation for SSO went into effect on April 15, 2016 and state SSO programs have three years to complete development and have approval from FTA through a certification process for their Part 674 compliant SSO program. After this three-year period, the current SSO regulation, 49 CFR Part 659, will be repealed along with its authorization, 49 U.S.C. Section 5330.
- **Agency Safety Plan** – the FTA intends to require the use of the transit-specific SMS framework through the Public Transportation Agency Safety Plan, which has been released in **NPRM** in February 2016. As of the completion of this report, the Final Rule to be 49 CFR Part 673 has not yet been released.

FTA's authorization for the above safety program activities was further modified by new surface transportation legislation, Fixing America's Surface Transportation (FAST) Act. The FAST Act introduced a new activity for FTA to address development of appropriate and required

minimum safety standards for the transit industry, for those areas where other Federal standards do not already apply.

FTA management have been publicly emphasizing and warning that the state SSO programs must be certified to the new SSO Rule (Part 674) by April 15, 2019 or FTA will be forbidden (by Congress) to allocate any new transit grant funding if that state has not been certified within the required timeframe. The status of the ODOT SSO Program certification is discussed next.

SSO Program Certification to Part 674

The ODOT SSO program has responded to all of the transit safety program related rulemakings and requirements made by FTA. Enhancements to the ODOT SSO program have been coordinated with and communicated to the two Ohio RTAs (GCRTA and SORTA/Cincinnati Bell Connector streetcar). In regards to the new SSO Rule (Part 674) and FTA TSO requirement, the state has re-designated ODOT Office of Transit as the SSO agency, via letter from Governor John Kasich on November 12, 2014.

The ODOT SSO program coordinated and completed an approved SSO program standard compliant with new guidance from FTA TSO for a new SSO Rule program standard in December 2016, with approval by all parties – ODOT, GCRTA, SORTA, and the City of Cincinnati – in February 2017. Monthly conference calls have continued with FTA TSO and a few program standard appendix updates and two new procedures were developed to comply with the new SSO Rule (Part 674). The ODOT SSO program standard, including the appendices and procedures, are all on the ODOT Office of Transit website.

On April 25, 2017, the ODOT SSO program submitted the certification application and formally requested certification via letter from Mr. Jerry Wray, Director, ODOT to Mr. Matthew Welbes, Executive Director, FTA. Ongoing conversations with FTA TSO indicate that this submittal appears to be complete; however, a detailed review is underway. Ohio is the first state to request certification to the new SSO Rule (Part 674).

FTA Safety Advisories

FTA TSO has issued several Safety Advisories (SA) starting at the end of 2013. The following Safety Advisories were previously responded to and discussed in the 2015 report.

- FTA SA 14-1. Right-of-Way (ROW) Worker Protection (RWP), December 31, 2013
- FTA SA 14-2. Verification of Safe Rail Vehicle Stopping Distances at Terminal Stations, June 12, 2014
- FTA SA 15-1. Audit All RFGPTS with Subway Tunnel Environments, June 17, 2015

In 2016, FTA released two more Safety Advisories, but only one of them applied to the Ohio RTAs.

- **FTA SA 16-1: Stop Signal Overruns, April 2016** – this safety advisory required that the SSO agency provide each RTA's definition of a stop signal/stop aspect, definition of a stop signal overrun, the total number of stop signal overruns experienced in 2015, and a description of the process used by each RTA to internally detect stop signal overruns. This information was collected from GCRTA, but not from SORTA because they were not yet in revenue service.

The topic of stop signal overruns has continued to be a high priority for FTA TSO. They have released a draft General Directive (GD) 17-1 on January 17, 2017 with additional requirements

for the SSO agencies and RTAs. GD 17-1 was published in the Federal Register for comment and numerous comments were provided, including from ODOT. FTA TSO has indicated that they are working through the comments and attempting to address those comments before finalizing the GD.

GCRTA Rail Safety Program Status

From the ODOT SSO program perspective, the GCRTA rail system safety program is being managed properly and all deadlines for annual certification continue to be completed on time. The working relationship with GCRTA executive management, department management, and staff continues to be excellent. GCRTA's challenges from a safety performance perspective continue to be managing aging infrastructure and rail vehicles, as well as succession planning for turnover of middle management and technical staff. GCRTA has been working to fully complete their transit asset management activities for rail infrastructure and vehicles so that priorities for technical projects and purchasing of materials can be effectively prioritized, including from a safety perspective. GCRTA has also invested significantly into training and capabilities building for the technical staff in rail-related departments. These activities require a tremendous amount of effort and discipline, and significant progress continues to be made.

Cincinnati Streetcar Rail Safety Program Status

From the ODOT SSO program perspective, the Cincinnati Streetcar project team and rail system safety program are being managed properly and all deadlines for developing documentation for the safety program are being met. The working relationship with the City of Cincinnati, SORTA, and Transdev management and staff continues to be excellent. At the end of 2016, SORTA issued a Cure Notice to Transdev for issues with adequate management staffing (turnover) and performance of staff, operations, and maintenance. In early 2017, a full audit of the Transdev contract implementation was completed and later the Cure Notice was rescinded in April 2017, with additional ongoing action items yet to be completed.

Highlights for 2017

The 2017 calendar year is expected to be busy with planned (and already completed) activities for the ODOT SSO program as follows:

- FTA TSO and the ODOT SSO program will continue monthly conference calls until the state has been certified to the new SSO Rule. Once certification has been achieved, the ODOT SSO program will need to revise the program standard to address only the new SSO Rule, working with both of the Ohio RTAs.
- The ODOT SSO program will continue to monitor SORTA's oversight of Transdev's progress towards full operations, maintenance, and safety performance for the Cincinnati Bell Connector streetcar system.
- SORTA has developed their approach to internal audits of the Cincinnati Bell Connector streetcar system, and will complete audits in 2017 of a planned approximate one-third of the activities that make up the safety and security programs.
- The ODOT SSO program plans a Triennial Audit of the Cincinnati Bell Connector streetcar system implementation, operations, maintenance, and internal audits completed to date. This audit is currently planned for the week of October 9-13, 2017 in Cincinnati, and will be focused on the safety and security certification for revenue service and internal audits completed by SORTA, as well as investigations and related corrective actions.
- Required completion of Annual Reports and Certification from GCRTA and SORTA by January 31st and Approval from the ODOT SSO program has been completed. Required

annual data and information submission and annual certification by the ODOT SSO program to FTA has been completed, by April 14th this year.

- FTA has two remaining rulemakings (Agency Safety Plan and Final Rule on Safety Training) that are expected to be completed during 2017 and will require significant work from the ODOT SSO program and Ohio RTAs to implement the final requirements and coordination.
- Quarterly meetings will continue, as scheduled. GCRTA – January, April, July, and October. SORTA/City of Cincinnati – February, May, August, and November
- ODOT SSO program staff will continue to attend required FTA safety certification training classes and to develop and implement the technical training plan with Cincinnati Bell Connector streetcar.
- Both Ohio RTAs (GCRTA and SORTA) staff supporting the safety program continue to work towards completing FTA-required safety certification training.



Introduction

This 2016 Annual Program Status Report highlights activities and accomplishments from the Ohio Department of Transportation (ODOT) Rail Transit State Safety Oversight (SSO) program, focused on calendar year 2016. This annual report is required by the Federal Transit Administration (FTA) SSO Rule, 49 Code of Federal Regulations (CFR) Part 674.13(a)(7):

At least once a year, the SSOA [state safety oversight agency] reports the status of the safety of each rail fixed guideway public transportation system to the Governor, the FTA, and the board of directors, or equivalent entity, of the rail fixed guideway public transportation system.

The Ohio rail transit agencies (RTAs) included as part of this SSO program are the Greater Cleveland Regional Transit Authority (GCRTA) – heavy and light rail systems, and the City of Cincinnati and Southwest Ohio Regional Transit Authority (SORTA) – the Cincinnati Bell Connector streetcar system.

In Ohio, the designated state safety oversight agency (SSOA) has been and continues to be the ODOT Office of Transit. This office provides financial and technical assistance to public transit systems, local governments, and human service agencies throughout the state for the planning, establishment, and operation of those public transit systems. The ODOT SSO program has provided safety oversight for GCRTA since the beginning of the program (1996) and now for the Cincinnati Bell Connector Streetcar since 2012.

FTA's Transit Safety Program Enhancements

In July 2012, requirements and expectations of the FTA's transit safety program were significantly changed and enhanced as part of the surface transportation legislation, Moving Ahead for Progress in the 21st Century (MAP-21). These changes and enhancements have caused FTA's Office of Safety and Oversight (TSO) to promulgate rulemakings (two remain to be finalized), including the following:

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FTA's authorization for the above safety program activities was further modified by new surface transportation legislation, Fixing America's Surface Transportation (FAST) Act. Some clarifications and modifications were made by Congress based on experience from the multiple rulemakings and comments received from the transit industry. In addition, the FAST Act introduced a new activity for FTA to address development of appropriate and required minimum safety standards for the transit industry, for those areas where other Federal standards do not already apply. FTA has started this process by including it in the National Safety Plan and through a Transit Safety Standards Compendium and Final Report (January 2017).

FTA management have been publicly emphasizing and warning that the state SSO programs must be certified to the new SSO Rule (Part 674) by April 15, 2019 or FTA will be forbidden (by Congress) to allocate any new transit grant funding if that state has not been certified within the required timeframe. The status of the ODOT SSO Program certification is discussed next.

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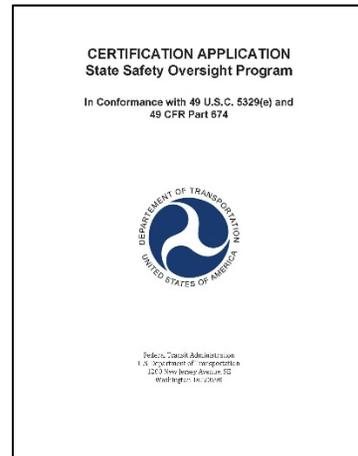
The ODOT SSO program also developed their Certification Work Plan (CWP) for becoming certified as compliant with the new SSO program, via letter on May 1, 2014. FTA notified the ODOT SSO program that their CWP was approved on May 16, 2014. The CWP process included five sections and 18 individual requirements that needed to be met by each SSOA unless not applicable. The ODOT SSO program responses to these CWP requirements included analyses, program standard revisions, and procedure development, all of which were completed in April 2016.

In July 2016, FTA TSO convened a meeting of the SSO managers to go over issues and requirements for certification of the state SSO programs and activities ongoing at FTA, such as the safety oversight activities with the Washington Metropolitan Area Transit Authority (WMATA). As part of this meeting, FTA TSO rolled out two draft guidance documents – one for the requirements of a Part 674 compliant program standard and the other was a draft certification application along with a draft 49 CFR Part 674 Certification Toolkit. The new

certification toolkit and application now required 31 responses from the state SSO program. As part of this meeting, the ODOT SSO program was encouraged to submit the responses to the toolkit and all 31 responses were provided to FTA TSO as of September 7, 2016.

In October 2016, FTA TSO informed the ODOT SSO program that certification consideration required that a Part 674 compliant program standard be developed. We immediately started on the new program standard, which was completed according to FTA's draft guidance document in December 2016 and approved by all parties – ODOT, GCRTA, SORTA, and the City of Cincinnati – in February 2017. Monthly conference calls have continued with FTA TSO and a few program standard appendix updates and two new procedures were developed to comply with the new SSO Rule (Part 674). The ODOT SSO program standard, including the appendices and procedures, are all on the ODOT Office of Transit website. Also in February 2017, FTA TSO finalized their guidance documents for the Program Standard and Certification Toolkit.

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FTA Safety Advisories

FTA's authority to issue safety advisories and/or directives can be found in 49 U.S.C. Section 5329(g) Enforcement Actions. These enforcement actions are in regulation as 49 CFR Part 670:

- §670.25 – General Directives – directive for all grant recipients or a subset
- §670.27 – Special Directives – directive for named/specific grant recipients
- §670.29 – Advisories – an advisory based on hazards or risks to public transportation, which may recommend corrective actions, inspections, conditions, limitations or other actions to avoid or mitigate any hazards or risks.

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FTA Triennial Audit of the ODOT SSO Program

The FTA SSO program is required in 49 U.S.C. Section 5329(e)(10)(B) to complete an audit of each state's SSO program at least once every three years to assure compliance to Part 674 and Section 5329(e). During these triennial audits of the ODOT SSO program, the FTA SSO program staff request a tremendous number of documents and amount of information ahead of the on-site activities, which typically occur at one of the RTAs. The ODOT SSO program staff work directly with the RTAs and the FTA SSO program staff to schedule and coordinate the on-site portion(s) of the FTA audit and the interviews and inspections that might be completed with RTA staff and on RTA property. The ODOT SSO program intends to negotiate on behalf of the state and the RTAs (with consultation) for all findings and recommendations documented in FTA's audit report, and work with the RTAs to develop and approve corrective actions to be tracked to completion, as needed.

The 2016 audit occurred in March 2016 (based on the current SSO Rule, Part 659), with five findings/corrective action plans (CAPs), all of which were completed with the update of GCRTA's rail SSPP for 2017 (delivered to FTA TSO in February 2017). The findings and ODOT SSO program responses to close the five findings/CAPs are the following:

Finding 1: *As specified in 49 CFR Part 659.15(b)(2):* ODOT must ensure the State Safety Oversight Program Standard (SSOPS) review process includes the review frequency of the Program Standard and associated procedures. ODOT must submit to FTA documentation supporting an annual review process for the SSOPS. On 9/13/2016, ODOT provided FTA with the updated Procedure SSO-001, including the annual review requirement.

Finding 2: *As specified in 49 CFR Part 659.19(k):* ODOT must ensure that GCRTA specifies required emergency management activities, including types of exercises, frequency, after action report requirements, and management of findings from exercises. ODOT must submit to FTA an ODOT approved GCRTA SSPP clarifying emergency management drills and after action reports process. The drill type and frequency should also be specified in the SSPP or reference emergency management procedures (such as an annual tabletop and annual full-scale exercise led by GCRTA). On February 15, 2017, ODOT provided FTA with the updated GCRTA RSSPP for 2017 along with the ODOT approval letter. Note that the change was to clarify that an after-action report is only required when GCRTA is the sponsor/host of the drill or exercise.

Finding 3: *As specified in 49 CFR Part 659.19(q):* ODOT must ensure GCRTA sufficiently implements an ongoing configuration management process. ODOT must submit to FTA meeting minutes for three Configuration Management Committee (CMC) meetings. ODOT should also provide FTA with a summary of its CAP verification activities for the ODOT three-year review configuration management findings, such as participation/follow-up audit of the CMC. On

January 6, 2017, ODOT SSO provided the three sets of meeting minutes and closure evidence for the Triennial corrective actions, including evidence of ODOT participation in the GCRTA CMC.

Finding 4: *As specified in 49 CFR Part 659.31(b):* ODOT must ensure sufficient implementation of hazard management program, including frontline GCRTA employee training and compliance for hazard reporting. ODOT to coordinate with GCRTA to further clarify significant hazards for GCRTA's system. ODOT must submit to FTA documentation supporting sufficient implementation of the hazard management program such as a comprehensive hazard log and hazard management procedure to include clarification of reportable hazard thresholds such as:

- Red Signal violations (FTA Safety Advisory 16-1)
- Broken rail/track buckle
- Railcar braking failure
- Near misses with automobiles/pedestrians
- Door faults/doors opening wrong side

On 9/23/2016, ODOT SSO provided FTA with procedure SSO-007 – Hazard Data Reporting. The procedure includes the 5 suggested hazards and additional topics for “risk monitoring”. The procedure includes details for ensuring the hazards are reported to FTA at least annually. ODOT SSO also provided the corresponding 2015 GCRTA hazard data in a spreadsheet.

Finding 5: *As specified in 49 CFR Part 659.35(f):* ODOT must ensure that all required accidents are sufficiently reported, and should reconcile SSO and National Transit Database (NTD) accident data. ODOT must submit to FTA documentation supporting an effective process for reconciliation of SSO and NTD accident data. On 9/13/2016, ODOT SSO provided FTA with quarterly meeting minutes including an SSO/NTD data reconciliation summary. Four incidents were corrected in NTD for 2015 data. Additionally, FTA was provided with a list of all GCRTA incidents occurring in 2015-2016. GCRTA has committed to checking SSO and NTD for reconciliation, as needed, on at least a quarterly basis.

Greater Cleveland Regional Transit Authority (GCRTA)

The ODOT SSO program provides safety oversight for the GCRTA (www.riderta.com) heavy and light rail systems shown in Figure 1, which include 37 miles of double track and catenary power system. Figure 1 also shows GCRTA's two bus rapid transit (BRT) lines, but the bus operations are not a part of the SSO program. Figure 2 shows one of the light rail vehicles in Tower City.



Communications with GCRTA occur daily with email or phone calls, usually with the Safety Department. GCRTA provides monthly status reports for all investigations, internal audits, and corrective actions. In addition, the ODOT SSO program and GCRTA have quarterly meetings at GCRTA with executive and department management staff to go over status of corrective actions and to share presentations about current safety related activities for the ODOT SSO program. Quarterly meetings for 2016 occurred on January 20th, April 27th, August 4th, and October 20th.

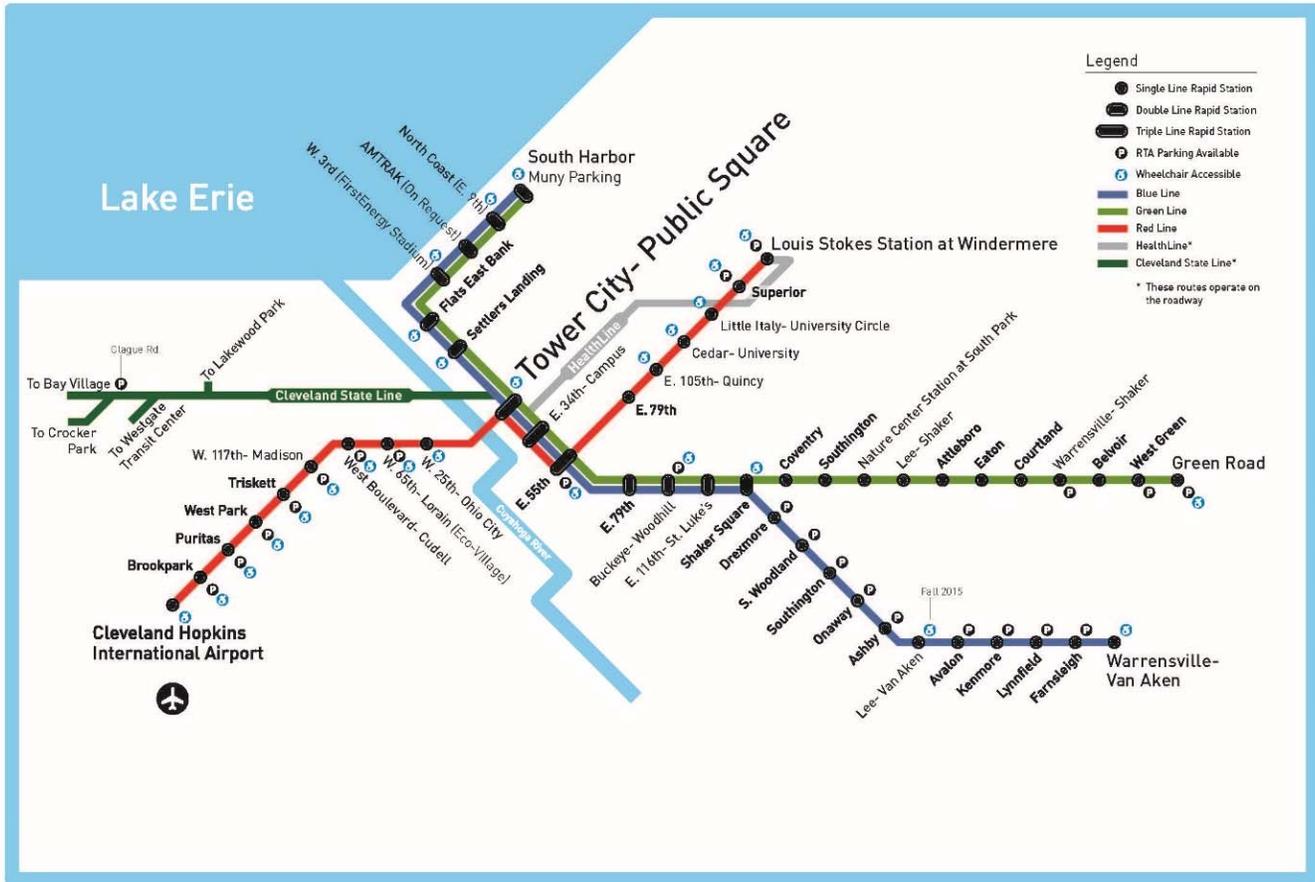


Figure 1. GCRTA Heavy and Light Rail Service Map



Figure 2. GCRTA Light Rail Vehicle

GCRTA and the ODOT SSO program have actively worked together completing investigations and internal audits, using these as an opportunity to enhance safety capabilities related to the rail systems. As shown in Figure 3, the number of reportable event investigations over the last ten years have been steady at an average of 15 per year. The ODOT SSO program has started to require additional, less severe, events that were already being investigated to also be included in the ODOT SSO program. Note the significant increase of ODOT reportable events starting in 2012 is a part of the new requirements for the MAP-21 enhanced SSO program.

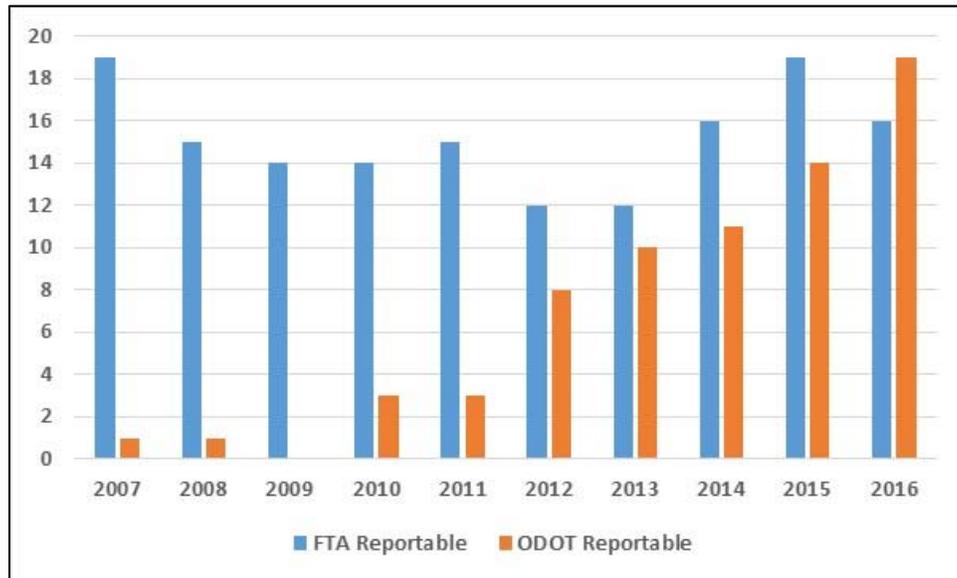


Figure 3. Number of FTA and ODOT Required Investigations by Year

The ODOT SSO program assigns GCRTA to complete these investigations, and the ODOT SSO program adopts and approves all of the investigations and corrective action plans (CAPs). The ODOT SSO program staff carefully and independently review the investigations and CAPs to assess whether or not all of the root causes for the events were fully investigated and appropriately mitigated/controlled. Any changes needed are discussed and negotiated between the ODOT SSO program and GCRTA staff. Figure 4 shows all CAPs from investigations, internal audits, and ODOT SSO program Triennial Reviews at GCRTA during the ten-year period. All of these CAPs have been approved by and included in the ODOT SSO program. The CAPs represent action items to improve safety performance on the rail system including training, additional maintenance, or adding new/improving existing capabilities. Over the ten-year period, the number of total CAPs averages 136 CAPs per year, including investigation and audit CAPs.

GCRTA's internal audits are coordinated with the ODOT SSO program and GCRTA's Safety and Internal Audit Departments. Each year, approximately one-third of the system safety program plan (SSPP) elements and system security plan (SSP) sections are audited in order to cover the entire safety program over a three-year period. For each internal audit, the ODOT SSO program is included for review of the planned procedures and checklists both for information and in case the ODOT SSO program staff decide to participate in those internal audits. Several meetings during the year are completed with Safety and the Internal Audit Departments to accomplish this coordination and inclusion in the ODOT SSO program.

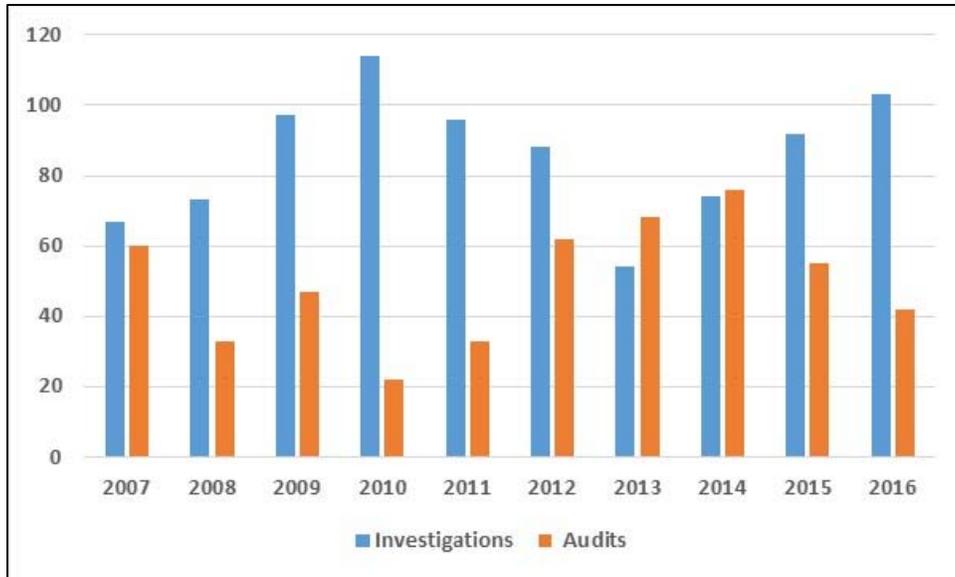


Figure 4. Number of Corrective Actions for Investigations and Audits by Year

The ODOT SSO program and GCRTA have been working together to ensure that safety certification training is being planned and completed for both organizations. The ODOT SSO program developed an FTA-required Safety Certification Training Plan (current version is Rev 6 dated March 2017, included in the program standard as Appendix C) to manage the required safety training activities. In addition, the GCRTA Training Department has developed an awareness training curriculum for the ODOT SSO program Technical Training Plan. This training from GCRTA was completed as two two-day training sessions to cover all of the technical aspects of operating and maintaining the rail systems at GCRTA. This training was developed in 2016, and then the training with the ODOT SSO program staff was completed in August 2016 and January 2017. In addition, the GCRTA Safety Department staff have also been active in completing their required FTA Safety Certification Training.

Highlights from GCRTA Rail in 2016. Calendar year 2016 was extremely busy for GCRTA. A few highlights are mentioned here, including for all of GCRTA and some for just the Rail related departments.

- The Cavaliers won the National Basketball Association (NBA) championship with a parade (June 22, 2016) that essentially overwhelmed the downtown Cleveland area. GCRTA provided significant support and transit services into and out of downtown for this event.
- The Republican National Convention (July 18-21, 2016) was held at multiple venues in downtown Cleveland. A significant amount of planning for security, activities, and ongoing provision of transit services was provided.
- The GCRTA Board of Trustees approved the 2017 Rail System Safety Program Plan (RSSPP) as the interim Agency Safety Plan (March 21, 2017) in support of ODOT SSO becoming certified to the new SSO Rule (Part 674).
- Significant effort to complete a major refresh of the Rail Operators Rule Book (RORB), Train Control standard operating procedures (SOPs), and related documents, procedures and training were all completed. Multiple departments at GCRTA assured this activity was successfully completed – Rail, Service Quality, Engineering, Safety, Training, and Internal Audit (completed September-October 2016).

- Significant capital projects for the rail systems and infrastructure continued including Tower City, multiple stations, and track and power system projects.
- Significant technical projects to replace the microprocessor for heavy rail vehicles and the pre-exciter for the light rail vehicles were significantly advanced. These were critical projects that allowed the older rail vehicles to be maintainable and available for full service.
- Safety led a full scale exercise in the Airport Tunnel to review emergency operations of the ventilation system during a smoke/fire event. This exercise was in response to the FTA's Safety Advisory 15-1.

GCRTA Rail Safety Program Status. From the ODOT SSO program perspective, the GCRTA rail system safety program is being managed properly and all deadlines for annual certification continue to be completed on time. The working relationship with GCRTA executive management, department management, and staff continues to be excellent. GCRTA's challenges from a safety performance perspective continue to be managing aging infrastructure and rail vehicles, as well as succession planning for turnover of middle management and technical staff. GCRTA has been working to fully complete their transit asset management activities for rail infrastructure and vehicles so that priorities for technical projects and purchasing of materials can be effectively prioritized, including from a safety perspective. GCRTA has also invested significantly into training and capabilities for the technical staff in rail-related departments. These activities require a tremendous amount of effort and discipline, and significant progress continues to be made.



Cincinnati Bell Connector Streetcar

The ODOT SSO program also provides safety program oversight for the Cincinnati Bell Connector Streetcar (<http://www.cincinnati-oh.gov/streetcar/>), which includes a route of 3.6 miles of single track and catenary power system. This streetcar system went into service on time September 9, 2016, and has provided more than 410,000 rides as of the end of February 2017, ahead of original projection.

One of the modern streetcar vehicles is shown in Figure 5 and the route map is shown in Figure 6. The route runs between the Banks through downtown up to the Over the Rhine neighborhood. This is a joint operation between the City of Cincinnati and the Southwest Ohio Regional Transit Authority (SORTA). Transdev started in August 2015 as the operations and maintenance contractor to SORTA for the Cincinnati Streetcar, including management and staff to operate and maintain the streetcar services. Figure 7 shows one of the streetcar vehicles at the maintenance and operating facility (MOF).



Figure 5. Cincinnati Bell Connector Streetcar

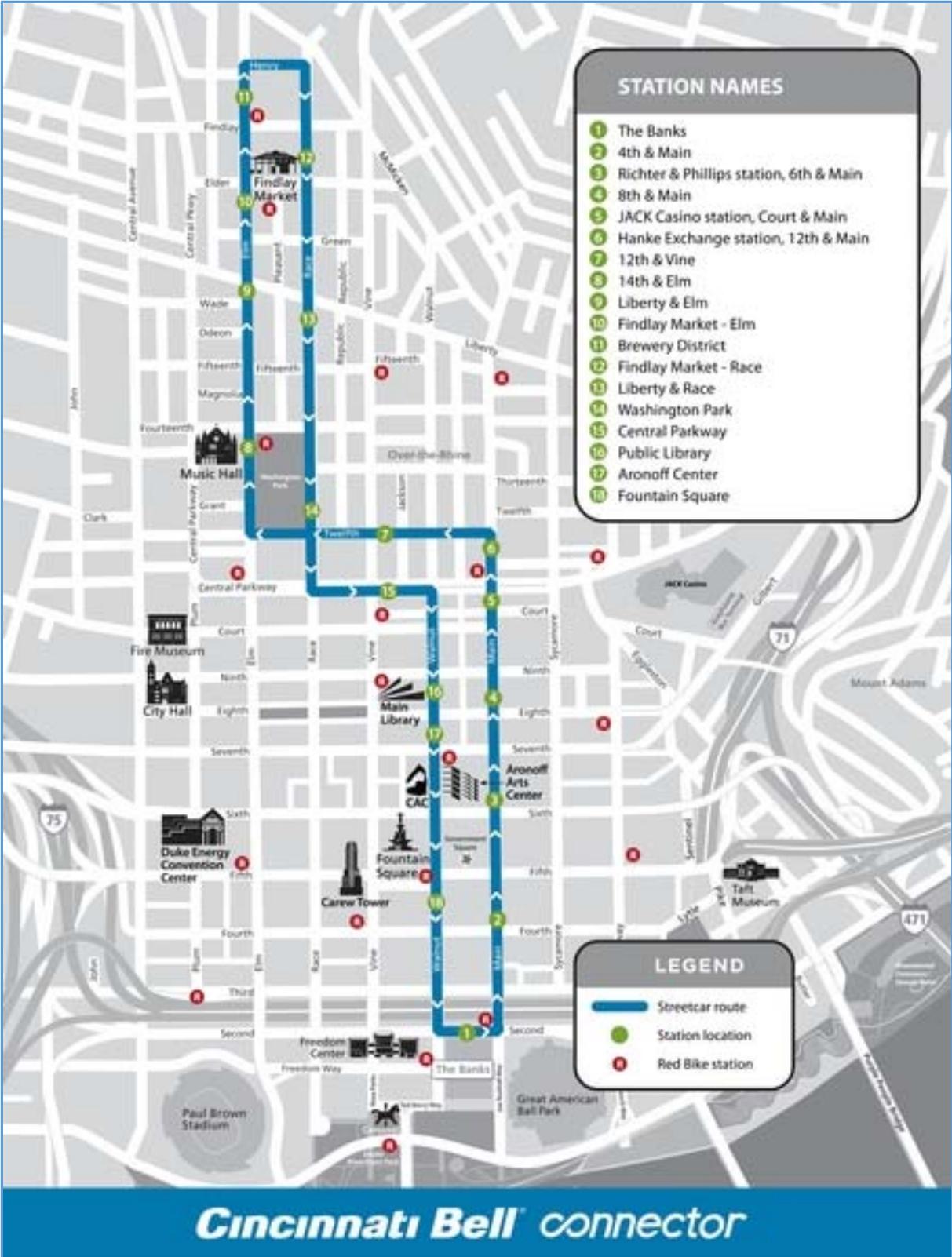


Figure 6. Cincinnati Streetcar Route Map



Figure 7. Cincinnati Streetcar Maintenance and Operating Facility (MOF)

Revenue service in 2016 included nearly four months of operation. In that timeframe, the Cincinnati Bell Connector streetcar system had four events that were reportable to FTA and four additional events that were reportable only to the state. These eight investigations resulted in 17 corrective actions.

Communications with the project team occurs daily with email or phone calls. SORTA provides monthly status reports, including logs for daily incidents, blocking vehicles (or construction equipment), and CAPs. The ODOT SSO program participates in the Safety and Security Review Committee (SSRC) meetings, which also includes configuration management committee duties. The ODOT SSO program and SORTA/City of Cincinnati have completed 2016 quarterly meetings (February 19th, May 20th, August 19th and November 16th) in Cincinnati to go over status of the operations, maintenance, development of procedures, and development of related safety and security program processes and documents, as well as investigations and CAPs.

In 2017, the ODOT SSO program will participate in Cincinnati Streetcar training activities and work together to set up awareness training to address the technical training program for the streetcar operation. A training session for reviewing investigation processes has been completed as part of one of the tabletop drills for the project testing and start-up phase. In addition, SORTA safety and security staff and Transdev staff have worked towards completing their FTA Safety Certification Training Program requirements.

Support for Start of Revenue Service. In preparation for revenue service in September 2016, FTA TSO scheduled their Safety and Security Readiness Review (SSRR) during January 12-14, 2016. The ODOT SSO program supported SORTA and the City of Cincinnati by providing documentation, coordinating the on-site interviews/meetings, and participating in all of the meetings with the project team. The final audit report was delivered on July 12, 2016, with only minor documentation-related findings. SORTA and the Cincinnati Streetcar project team

responded to all of the findings quickly and made sure this audit did not affect the project schedule. FTA TSO accepted all responses to the SSRR findings matrix with all actions closed on August 12, 2016, ahead of start of revenue service on September 9, 2016.

FTA Region V and their Project Management Oversight Contractor (PMOC) worked with the project team to review documentation, grant activities, and audited for readiness for revenue service. The ODOT SSO program supported these activities as needed by the project team, FTA and the PMOC.

The ODOT SSO program provided a review and concurrence of the safety and security certification verification report on August 25, 2016. ODOT provided its concurrence of readiness for revenue service during the August 19, 2016 quarterly meeting, ahead of start of revenue service on September 9, 2016. This concurrence activity focused on the six topics of the safety and security certification verification. ODOT provided a letter of concurrence on August 29, 2016 and a short report was completed that described ODOT's concurrence activities completed.

Cincinnati Streetcar Rail Safety Program Status. From the ODOT SSO program perspective, the Cincinnati Streetcar project team and rail system safety program are being managed properly and all deadlines for developing documentation for the safety program are being met. The working relationship with the City of Cincinnati, SORTA, and Transdev management and staff continues to be excellent. At the end of 2016, SORTA issued a Cure Notice to Transdev for issues with adequate management staffing (turnover) and performance of staff, operations, and maintenance. In early 2017, a full audit of the Transdev contract implementation was completed and later the Cure Notice was rescinded in April 2017, with additional ongoing action items yet to be completed.



ODOT SSO Program Plans for 2017

The 2017 calendar year is expected to be busy with planned (and already completed) activities for the ODOT SSO program as follows:

- FTA TSO and the ODOT SSO program will continue monthly conference calls until the state has been certified to the new SSO Rule. Once certification has been achieved, the ODOT SSO program will need to revise the program standard to address only the new SSO Rule, working with both of the Ohio RTAs.
- The ODOT SSO program will continue to monitor SORTA's oversight of Transdev's progress towards full operations, maintenance, and safety performance for the Cincinnati Bell Connector streetcar system.
- SORTA has developed their approach to internal audits of the Cincinnati Bell Connector streetcar system, and will complete audits in 2017 of a planned approximate one-third of the activities that make up the safety and security programs.
- The ODOT SSO program plans a Triennial Audit of the Cincinnati Bell Connector streetcar system implementation, operations, maintenance, and internal audits completed to date. This audit is currently planned for the week of October 9-13, 2017 in Cincinnati, and will be focused on the safety and security certification for revenue service and internal audits completed by SORTA, as well as investigations and related CAPs.
- Required completion of Annual Reports and Certification from GCRTA and SORTA by January 31st and Approval from the ODOT SSO program has been completed. Required annual data and information submission and annual certification by the ODOT SSO program to FTA was completed, by April 14th this year.
- FTA has two remaining rulemakings (Agency Safety Plan and Final Rule on Safety Training) that are expected to be completed during 2017 and will require significant work from the ODOT SSO program and Ohio RTAs to implement the final requirements and coordination.
- Quarterly meetings will continue, as scheduled.
 - GCRTA – January, April, July, and October
 - SORTA/City of Cincinnati – February, May, August, and November
- ODOT SSO program staff will continue to attend required FTA safety certification training classes and to develop and implement the technical training plan with Cincinnati Bell Connector streetcar.
- Both Ohio RTAs (GCRTA and SORTA) staff supporting the safety program continue to work towards completing FTA-required safety certification training.