Systems Engineering Review Form (SERF)

This SERF is to be used to determine if an ITS Project can be considered Low-Risk and therefore be covered under the Programmatic Agreement for ITS Systems Engineering Analysis between FHWA and ODOT dated February 25, 2014. The completed SERF, along with the Functional Requirements document for the associated Project Category, will satisfy the Systems Engineering Analysis requirements of 23 CFR 940.11. This document is to be completed during the Planning phase of the ODOT Project Development Process (PDP).

Please provide the following project information. In most cases, 1 to 3 sentences will be sufficient for each item, but you may include as much information as necessary:

1. PID – 119069

2. Project Sponsor Contact – Name, position, phone and email.

BJ Jetter, City Manager (Deer Park)
513-794-8860
wjetter@deerpark-oh.gov

3. Project Location – County-Route-Section, Logical Termini **and** which ITS Architecture.

HAM CR 251 0.11 (Blue Ash Road), Project Includes the traffic signal and railroad crossing at Webster Avenue and Blue Ash Road, OKI Regional Architecture

4. Project Category – Check the appropriate category.

	A. Closed Loop Arterial Traffic Signal System
	B. Centrally Controlled Arterial Traffic Signal System
X	C. Highway Rail/Traffic Signal Pre-emption
	D. Traffic Signal System with Emergency Vehicle Pre-emption
	E. Traffic Signal System with Transit Priority
	F. Ramp Meter System
	G. Adaptive Traffic Signal Control System

If the project is not one of the above categories, a project-specific Systems Engineering Analysis will need to be completed per Traffic Engineering Manual (TEM) Part 13.

5. Project Description – What type of ITS work is being performed?

Improvements to the advance railroad preemption equipment at the crossing as part of the traffic signal rebuild at the intersection of Webster Avenue and Blue Ash Road.

6. Project Objective(s) – What needs are being addressed by the ITS work?

Improvements to advance preemption equipment will provide additional warning time for vehicles.

Systems Engineering Review Form (SERF)

7. Which ITS Architecture Market Package is being used on this project?

	Surface Street Control - ATMS03
	Freeway Control - ATMS04
X	Standard Railroad Grade Crossing – ATMS13
	Advanced Railroad Grade Crossing – ATMS14
	Transit Signal Priority – APTS09

8. List the project Stakeholders and their roles and responsibilities.

City of Deer Park (Sponsor)
ODOT and ORDC (Project Funding Source, Project Administration)
The Kleingers Group (Consultant Roadway and Signal Engineer)
Genesee & Wyoming Railroad (Indiana and Ohio Railway Line Owner)
Benesch (Genesee & Wyoming Railroad Consultant Engineer)
Woolpert (ODOT Railroad Preemption Consultant Engineer)

9. Provide a description of the alternatives considered and why the proposed was selected?

Traffic signal warrants determine a signal is warranted in lieu of unsignalized operation. Existing circuitry evaluated for current MUTCD compliance, but was determined to provide inadequate warning time. These two conditions led to the decision to proceed with providing additional advance warning time concurrently with the traffic signal rebuild.

10. Risk Assessment Guidance – Please answer the following questions:

Question:	YES	NO
a. Are all of the project stakeholders included in the ITS Architecture?	X	
b. Will the project data flows conform to the Market Package data flows?	X	
c. Will the project use only interfaces as defined in the ITS Architecture?	X	
d. Will this project provide functionality in conformance with the Functional Requirements document approved for this project category?	X	
e. Will the project be procured using the low-bid contractor with consultant design approach?	X	
f. Will the project use only products from ODOT's Traffic Approved Products (TAP) , which meet the applicable ITS standards and testing procedures?	X	
g. Will the project use only operations & management procedures that are defined in the Regional ITS Architecture for this project category type?	X	
h. Has a plan been developed for the operations & management of the project, including staffing, power outages, failures, etc.?	X	

If all of the above questions are answered "YES", then the project can be considered Low-Risk. The completed SERF and the Functional Requirements document for the selected Project Category in Number 4 above will then serve as the Systems Engineering Analysis for the project.

If any of the above questions are answered "NO", then the project is considered High-Risk and a project-specific Systems Engineering Analysis shall be performed per TEM Part 13.

The completed SERF shall be retained as part of the project files.

SERF Completed By: Travis Hunt Date: 4/15/2026

Figure 5-1 OKI Regional System Interconnect Diagram

Fleet and Freight Management Center
*Fleet and Freight Management Systems
*Private Fleet and Freight Operators
Private Rail Operations Center

Emergency Management Center
BCRTA Transit System Dispatch
City and County Law Enforcement
Coast Guard Operations Center
CVG Operations Center
Emergency Alert System
Indiana State Police Communications Center
Indiana State Police Posts
Indiana Statewide Emergency Operations Center
Kentucky Emergency Alert System
Kentucky Statewide Emergency Operations Center
KSP Communications Center
KSP Troop Posts
Ohio State Highway Patrol State Communications Center
Ohio Statewide EOC/JDF
*Private Ambulance Provider Dispatch
Private Tow/Wreckers Dispatch
Regional 911 Call Centers
Regional Operations Center
Regional Public Safety Dispatch Centers
*School District Dispatch
SORTA Transit Dispatch Center
SOSINK Communications Network
TANK Transit System Dispatch
University of Cincinnati Department of Public Safety

Maint and Constr Management Center
BCRTA Equipment and Fleet Service Facilities
Cincinnati Maintenance Garage
Cincinnati Public Services Department
City and County Maintenance Operations
City and County Maintenance Operations
Hamilton County Maintenance Division
INDOT Seymour District Maintenance Garages
KYTC District 6 Maintenance Garages
KYTC District 6 Maintenance Operations
Local Transit Equipment and Fleet Service Facilities
Municipal/County Equipment Repair Facility
ODOT District 8 Maintenance Garages
ODOT Storage Facilities
Other City and County Maintenance Dispatch Facilities
SORTA Equipment and Fleet Service Facilities
TANK Equipment and Fleet Service Facilities

Commercial Vehicle Administration Center
Indiana Motor Carrier Services
*Kenton County CVO Administration
KPSC Commercial Vehicle Registration System
PUCO Commercial Vehicle Registration System

Transportation Information Center
BCRTA Traveler Information System
Cincinnati Public Information Office
*City and County Public Information Systems
CVG Operations Center
GoKY
INDOT CARS 511 System
*INDOT Rest Area Tourist Information Centers
INDOT Traveler Information System
KYTC Central Office
KYTC Office of Public Affairs
*KYTC Rest Area Tourist Information Centers
Media Outlets
National Weather Service
ODOT / KYTC Traveler Information System
ODOT 511 Telephone Information Service
ODOT OHGO Traveler Information System
ODOT Public Information Office
*ODOT Rest Area Tourist Information Centers
*Ohio Mobility Apps
Private Weather Service Systems
Private Traveler Information Systems
SORTA Traveler Information System
TANK Traveler Information System
*Truck Parking Website
TV and Radio Stations

Traffic Management Center
KYTC Frankfort TOC
ODOT ATMS
ODOT Statewide TMC
TRIMARC (KYTC)
Cincinnati Traffic Control Center
*City and County Traffic Control Center
Hamilton County Signal Operations
INDOT Traffic Operations Center
INDOT Traffic Signal Control System
KYTC District 6 Planning
KYTC District 6 Traffic Operations Center
KYTC Frankfort TOC
KYTC Traffic Signal Control System
ODOT Central Office
ODOT District 8 Signal Operations
ODOT Traffic Signal Control System
Other City and County Traffic Control Centers
Other ODOT Traffic Operations Center

Archived Data Management Subsystem
*City and County Traffic Data Archives
*INDOT Traffic Data Archive
KSP CRASH Database
KYTC Division of Planning
ODOT / KYTC Archive
ODOT District 8 Traffic Data Archive
ODOT Office of Technical Services
ODPS Crash Database
OKI Transportation Planning Database
OSU Center of Automotive Research
*SORTA Data Warehouse
*TANK Data Archive
Transportation Research Centers

Service Monitor System
*City and County CV Service Monitoring Systems
*CVG Airport CV Service Monitoring Systems
*INDOT CV Service Monitor System
*KYTC CV Service Monitor System
*ODOT CV Service Monitor System

Map Update System
Private Map Update Systems

Authorizing Center
*City and County CV Authorizing Center
*CVG Airport CV Authorizing Center
*INDOT CV Authorizing Center
*KYTC CV Authorizing Center
*ODOT CV Authorizing Center

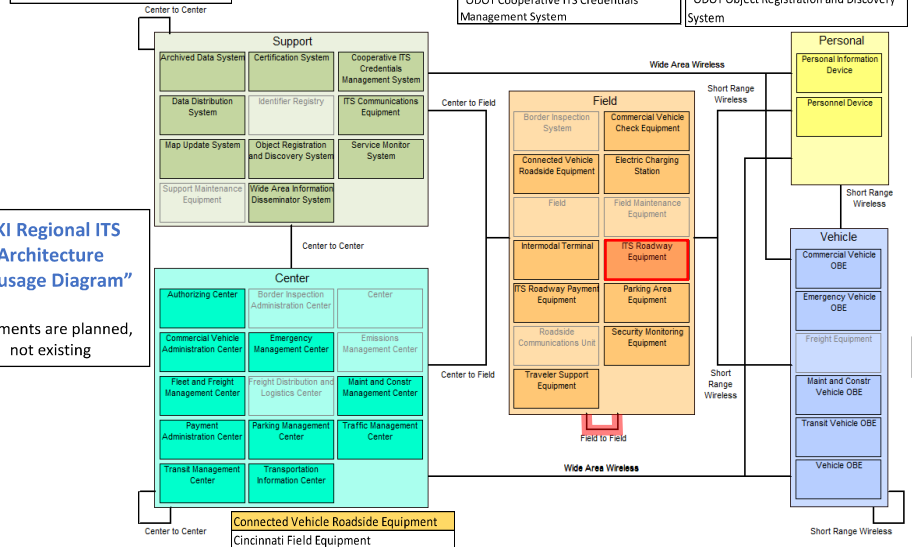
Payment Administration Center
Financial Institutions
ODOT / KYTC Electronic Toll Administration

Transit Management Center
*SORTA Riverfront Transit Center
SORTA Transit Dispatch Center
TANK Transit System Dispatch
BCRTA Transit System Dispatch
*School District Dispatch
CTC Transit Dispatch
Local Transit Systems
University of Cincinnati Shuttle Dispatch

Parking Management Center
Cincinnati Parking Management
CVG Airport Parking Management Systems
*INDOT Rest Area Truck Parking Availability System
*KYTC Rest Area Truck Parking Availability System
*ODOT Rest Area Truck Parking Availability System
*Parking Management Centers
Parking Management Systems and Sensors (Private)
*TMC Operators
The Banks Intermodal Center

OKI Regional ITS Architecture "Sausage Diagram"

*Elements are planned, not existing



Data Distribution System
*INDOT DDS
*KYTC DDS
*KYTC/INDOT/ODOT DDS
*ODOT Event Streaming Platform
Smart911

Wide Area Information Disseminator System
*KYTC/INDOT/ODOT Wide Area Information Disseminator System
*ODOT Wide Area Information Disseminator System

Cooperative ITS Credentials Management System
*INDOT Cooperative ITS Credentials Management System
*KYTC Cooperative ITS Credentials Management System
*ODOT Cooperative ITS Credentials Management System

Object Registration and Discovery System
*INDOT Object Registration and Discovery System
*KYTC Object Registration and Discovery System
*ODOT Object Registration and Discovery System

Certification System
*INDOT Certification System
*KYTC Certification System
*ODOT Certification System

ITS Communications Equipment
*ITS Communications Equipment

Personal Information Device
BCRTA BGo Mobile App
Cincy EZPark Mobile Payment
Mobile Ticketing (Transit App)
Regional Smart Card
SORTA ACCESS Smart Card
Traveler Information Devices

Personnel Device
Traveler Information Devices

Maintenance and Constr Vehicle OBE
*Cincinnati Maintenance Vehicles
*Hamilton County Maintenance Vehicle
INDOT Maintenance Vehicles
KYTC District 6 Maintenance Vehicles
ODOT Maintenance Vehicles
*Other City and County Maintenance Vehicles

Commercial Vehicle OBE
Commercial Vehicles and Barges

Vehicle OBE
*Connected/Automated Vehicles
*On-Board Truck Systems
Private Vehicles

Transit Vehicle OBE
BCRTA Transit Vehicles
Cincinnati Streetcar Rail Vehicles
*CTC Transit Vehicles
*Local Transit Vehicles
RAMP Transit Vehicles
School Buses
SORTA ACCESS Vehicles
SORTA Fixed Route Vehicles
TANK Transit Vehicles
*University of Cincinnati Shuttle Vehicles

Emergency Vehicle OBE
Cincinnati Fire/EMS Vehicles
Cincinnati Police Vehicles
*City and County Fire/EMS Vehicles
*City and County Police/Sheriffs Vehicles
CVG Emergency Response Vehicles
Hamilton County Fire/EMS Vehicles
Hamilton County Sheriffs Vehicles
Hoosier Helper Safety Service Patrol
Indiana State Police Vehicles
KSP Troop Vehicles
KYTC SAFE Patrol
ODOT Freeway Safety Patrol
Ohio State Highway Patrol Vehicles
*Other Public Safety Vehicles
*Private Ambulance Provider Vehicles
*Private Tow/Wrecker Vehicles
TRIMARC Freeway Service Patrol (KYTC)

Security Monitoring Equipment
Cincinnati Police Cameras
*INDOT Infrastructure Monitoring Sensors
*ODOT / KYTC Infrastructure Monitoring Sensors
SORTA Security Cameras
Cincinnati Bridge Monitoring Cameras

Parking Area Equipment
Cincinnati Parking Management
CVG Airport Parking Management Systems
*INDOT Rest Area Truck Parking Availability System
*KYTC Rest Area Truck Parking Availability System
*ODOT Rest Area Truck Parking Availability System
Parking Management Systems and Sensors (Private)
The Banks Intermodal Center

Connected Vehicle Roadside Equipment
Cincinnati Field Equipment
*City and County Connected Vehicle Roadside Equipment
*CVG Airport Connected Vehicle Roadside Equipment
*INDOT Connected Vehicle RSE
INDOT Field Equipment
KYTC District 6 Field Equipment
*ODOT / KYTC Connected Vehicle Roadside Equipment
ODOT District 8 Field Equipment
*ODOT Workzone Safety Devices
*Parking Management Centers

Traveler Support Equipment Subsystem
BCRTA Transit Information Systems
Cincinnati Streetcar Transit Information Systems
*Local Transit Agency Transit Information Systems
*SORTA Regional Transit Hubs
SORTA Transit Information Systems
*TANK Regional Transit Hubs
TANK Transit Information Systems

ITS Roadway Equipment	
Cincinnati Dynamic Message Signs	KYTC Dynamic Message Signs
City and County Cameras	KYTC Lane Control Devices
City and County Field Equipment	*KYTC Ramp Meters
Hamilton County Field Equipment	KYTC RWIS Stations
INDOT Automated Gate Closure Systems	KYTC Traffic Signal Roadway Equipment
INDOT Cameras	KYTC Variable Speed Limit Signs
INDOT Speed Monitoring Roadside Equipment	KYTC Speed Monitoring Roadside Equipment
INDOT Dynamic Message Signs	ODOT / KYTC Cameras
*INDOT Lane Control Devices	ODOT / KYTC HAR
*INDOT Ramp Meters	ODOT / KYTC Traffic Counters
INDOT RWIS Stations	ODOT Lane Control Devices
INDOT Traffic Signal Roadway Equipment	ODOT Ramp Meters
INDOT Variable Speed Limit Signs	ODOT RWIS Stations
KYTC Automated Gate Closure Systems	ODOT Traffic Signal Roadway Equipment
ODOT / KYTC Traffic Sensors	ODOT Variable Speed Limit Signs
ODOT Automated Gate Closure Systems	Rail Wayside Equipment
ODOT Dynamic Message Signs	Truck Parking Hybrid Signs
ODOT Speed Monitoring Roadside Equipment	

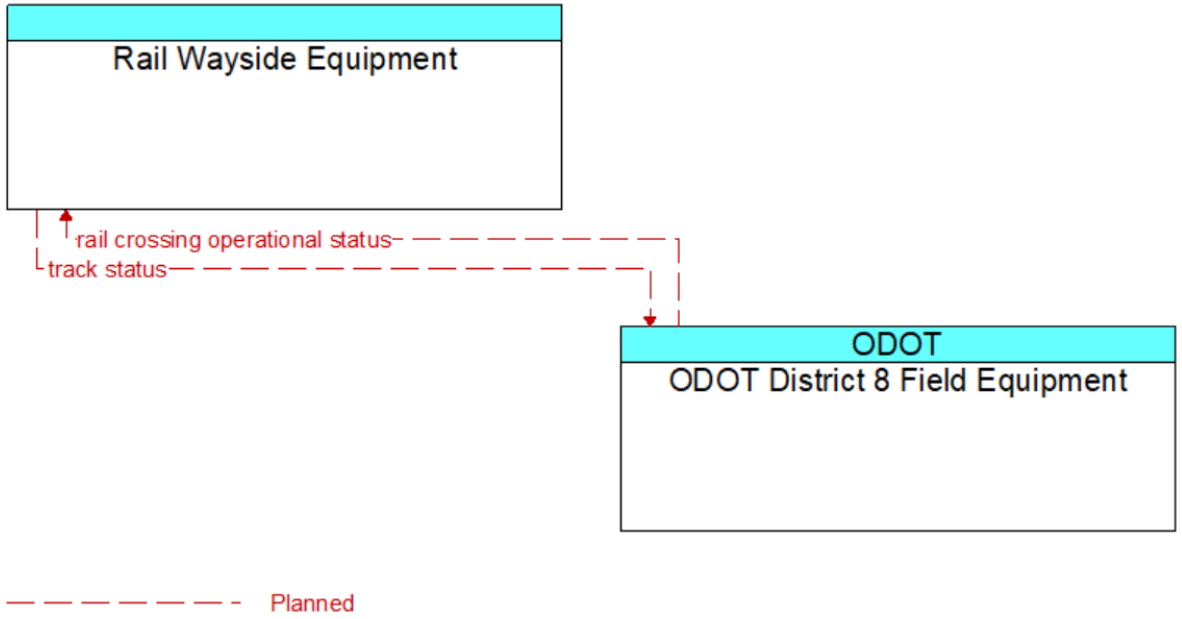
Intermodal Terminal
*Riverfront Terminals and Operations Centers

Electric Charging Station
Private EV Charging Stations
Public Agency EV Charging Stations

ITS Roadway Payment Equipment
*ODOT / KYTC Electronic Toll System

Home
Scope
Stakeholders
Inventory
By Physical Object
By Stakeholder
Services
Roles and Resp
Needs
Functions
Interfaces
Communications
Agreements
Projects

Interface: Rail Wayside Equipment - ODOT District 8 Field Equipment



Information Flow Definitions

rail crossing operational status (Planned) Selected Comm Solution

Status of the highway–rail grade crossing equipment including both the current state or mode of operation and the current equipment condition.

track status (Planned) Selected Comm Solution

Current status of the wayside equipment and notification of an arriving train.