



APPLICATION FOR: FFY 2018-2023 SKATS TIP - 2018 UPDATE

(Transportation Improvement Program)

- **STBGP-U FUNDS** (Surface Transportation Block Grant Program-Urban)

Section 1: Applicant Information			
Date:	September 25, 2017		
Sponsoring Organization:	Salem Area Mass Transit District (SAMTD)		
Organization Address:	555 Court Street NE, Suite 5230, Salem, OR 97301		
Contact Person & Title:	Stephen Dickey, Director of Transportation Development		
Contact e-mail:	Steve.dickey@cherrriots.org	Phone:	(503) 588-2424
Section 2: Project Information (Enter all applicable information.)			
Project Title:	Transit ITS Replacement and Upgrade (Phase 4)		
Location (Street, highway, other identifier):	555 Court Street NE, Salem / 220 High Street NE, Salem / 3140 – 3170 Del Webb Ave NE, Salem / 5860 Keizer Station Blvd., Keizer / and on all vehicles in the fleet.		
Cross street(s) or other reference point:	n/a		
Length in feet:	n/a		
RTSP Functional Class:	n/a		
Current Traffic Volume:	n/a		
Existing Level of Service:	n/a		
Freight Volume:	n/a		
Current Transit Ridership:	3.3 Million annual		
Bike/Pedestrian Volumes:	n/a		
5-year Crash History:	n/a		
State Senate District:	5, 9, 10, 11, 12, 13	State Representative District:	10, 17, 18, 19, 20, 21, 22, 23, 25
Project Purpose:	<i>(In MS Word, right click box, pick properties, pick "checked.")</i>		
Check all that apply (See Objectives in RTSP p. 2-8. Check all that apply.)	<input checked="" type="checkbox"/> Safety	<input checked="" type="checkbox"/> Relieves Traffic Congestion	<input type="checkbox"/> Preservation
	<input checked="" type="checkbox"/> Multi-modal	<input checked="" type="checkbox"/> Efficiency	<input type="checkbox"/> Other
a. Project Description:	<p>The award will fund the replacement of bus security camera systems, the addition of traffic signal green extension / signal preemption, real-time passenger information, real-time vehicle system performance monitoring, open payment fare options, and emergency notification systems. The project includes project management, acquisition, installation, and integration with SAMTD's systems.</p> <p>This overall project is broken down into four phases:</p> <ul style="list-style-type: none"> • Phase one is the development of an ITS Master Plan. This project is funded through FTA Section 5307 under STIP Key #19215. • Phase two is the procurement and implementation of Computer Aided Dispatch / Automated Vehicle Location (CAD/AVL) / Communication systems. This project is happening concurrently with Phase one. This project is funded through STBG under STIP Key #19741. • Phase three is the procurement and implementation of automated passenger counters (APC), Automatic Stop Announcement and Overhead Stop Display systems. This project is funded through STBG under STIP Key#20756. 		

- Phase four is the procurement and implementation of the replacement of bus security camera systems, the addition of traffic signal green extension / traffic signal preemption, real-time passenger information, real-time vehicle system performance monitoring, open payment fare options, and emergency notification systems.

The multiple phases of this project are designed to accomplish two primary goals. The first is to address the need to update obsolete current transit Intelligent Transportation System (ITS) components currently being used to support the district’s daily operations. These include the APC, automated stop announcement systems / overhead stop displays, radio systems, and the security camera systems.

The second is to upgrade the overall system by adding additional ITS components that will facilitate efficiencies in operating the system. These include the CAD/AVL, traffic signal green extension / signal preemption for up to 51 intersections, real-time passenger information, real-time vehicle system performance monitoring, open payment fare options, and emergency notification systems. This project will be phased in over several fiscal cycles, and may require partnerships with local jurisdictions to ensure full implementation of the project.

b. Briefly describe the problem and the proposed solution:

The problem is in two areas. The security camera systems are in the final stages of their useful life and are showing signs of potential failure. These cameras not only provide important video and audio recordings for the district when investigating an incident, but the external cameras regularly provide critical video recordings of non-transit related incidents that occur near the bus when it is in service. These recordings have assisted law enforcement numerous times in resolving an investigation of an incident on the road.

The addition of new ITS components will allow for much more efficient operation of the service and greater customer convenience when accessing transit. Traffic signal green time and traffic signal priority can be coordinated to assist with keeping the bus on schedule when there are high levels of traffic congestion. Real-time passenger information has been shown in multiple studies to be one of the best ways to assist passengers with being confident in using the bus for their daily transportation, and in many studies has been a significant factor in helping grow ridership. Finally, real-time vehicle systems monitoring can prevent catastrophic vehicle failure that is a significant inconvenience for the customer, and can be very costly to the district if the issue is caught too late to prevent irreversible damage to a major vehicle component. Emergency notification systems are becoming more and more a critical investment to protect the operator and passengers on the bus. These systems function in a discreet way as a “panic button” to alert dispatch of a critical situation that could place the operator, passengers, or the general public at risk. These systems not only alert dispatch to a potentially threatening situation, but also is interconnected to the various ITS components to allow first responders to see and hear inside the bus, as well as tracking its location and speed.

c. Is this a continuation of a project currently in the TIP or STIP? Enter yes or no --> Yes

If yes, describe the status of the project: As stated above, the CAD / AVL, Radio [STIP Key#19741], APC, and Automatic Stop Announcement / Overhead Stop Display [STIP Key#20756] portions of the overall ITS project have already been funded. The CAD / AVL project RFP will be released mid-fall 2017.

Section 3: Eligibility (Check "yes," "no," or "not applicable" for each.)	Yes	No	N/A
RTSP: Is the project listed in, consistent with, or able to be added to the financially constrained RTSP during project time frame? (See p. 2-7 of RTSP about consistency.)	x		
Project number in RTSP, if applicable: <u>B012, B013, B014, B016</u>			

State/Local Plans: Is the project in (or consistent with) a local adopted plan?	x		
Identify plan: <u>The district has an old, very outdated plan that is no longer up to date. A new plan is being developed and will be adopted by early spring 2018.</u> (See Maps and Plans section below, and attach information from plan.)			
Federal Eligibility: Is project eligible for STBGP-U or TA-U funding under Federal guidelines? (See application instructions.)	x		
Local Match: Can agency provide minimum required matching funds to the requested federal funds? (This should be indicated in Section 7.)	x		
Sufficient Funding: Is the total of requested STBGP-U/TA-U funds plus local match and other committed funds sufficient to complete the project or a phase of the project?	x		
Readiness: Does the agency have the ability to utilize the requested federal funds in the Fiscal Years requested in Section 7?	x		
CMP: Is the project consistent with the regional Congestion Management Process? (See RTSP, Appendix E for information.)	x		
Provide information if the answer is "no" or "n/a" for any of the above eligibility questions:			

Section 4: Description of Project Benefits (Relates to the goals of the RTSP: p. 2-8.) For each section, describe the benefits of the project, as applicable (or enter "n/a" for not applicable).	
a. Accessibility and Connectivity	Describe how the completed project fills in key gaps in the transportation system; completes system components; or provides better pedestrian, bicycle, or roadway accessibility for users in the region. Does it connect to schools, parks, community centers, or other public locations? Who benefits from the project?
While this project does not create new roads, sidewalks, or bicycle facilities that allow for improved infrastructure accessibility and connectivity, the improvements to system efficiency will benefit transit passengers, SAMTD, and other users of roadways used by transit routes.	
b. Multiple Modes	Describe how the completed project benefits more than one transportation mode or purpose (e.g., roadway and transit, bicycle and roadway users, or roadway and identified freight route, etc.).
The ITS components will help the system operate more efficiently, which will help it function as a well-integrated part of the overall transportation system. Reliable transit will reduce congestion, which benefits all other roadway users. When combining modes, public transportation also integrates well with pedestrians and bicycles, providing more options when considering longer trips.	
c. Preservation	Describe how the requested funds will be used to maintain and preserve the regional transportation system in good repair.
Most of the current transit ITS components are obsolete, and the rest soon will be. The investment will not only replace the obsolete components, but with the upgrades will help to operate more efficiently resulting in a longer life of the existing infrastructure.	
d. Freight	Describe how the completed project improves the freight system and freight movement.
The more efficient a public transit system is able to operate, especially in areas impacting freight routes, the fewer cars will be on the road. This reduces congestion along freight routes. In 2014, Salem Area Mass Transit District (SAMTD) provided 19,206,348 passenger miles of service. This is the total miles traveled by individuals using public transit over 12 months in the Salem-Keizer area. These are trips taken on a bus rather than adding more congestion on roadways.	

e. Economic Development	Describe how the completed project promotes or supports economic development.
<p>Public transportation provides a means for people, either by choice or because of necessity, to have access to employment, vocational training, and to purchase goods and services. For public transportation to be viable option for people, it must operate as efficiently as possible and provide easy to use information on how to access the services provided by SAMTD. The ITS components included in this request will facilitate operational efficiency, customer service, ADA compliance, and system security. A community that is not restricted from daily activities due to transportation limitations is more likely to have a strong economy, than communities that do not.</p>	
f. Safety	Describe how the completed project improves safety for all users.
<p>The main safety related components of this project are the security cameras and the radio / communications systems / and emergency notification systems on the buses. These systems both monitor with video, and on the interior, audio recordings. This protects the passengers, employees, and with the external cameras, provides critical video recordings to investigate incidents that are both district and non-district related. The external cameras have provided critical recordings used by law enforcement in the investigation, and in some cases, providing evidence in criminal prosecution cases.</p> <p>As stated in Section 2.b emergency notification systems alert dispatch to a potentially threatening situation, and are interconnected to the various ITS components to allow first responders to see and hear inside the bus, as well as tracking its location and speed.</p> <p>The other safety aspect is the element of providing a transportation option for people who should not be driving. The easier it is for people to use the system, the more efficient the system operates, and the more likely people will choose to use public transportation rather than drive. This is especially true for older adults when they begin to lose their capacity to drive safely, and still want to be independent and active in their community. Having systems in place that ensure the bus is running on-time, with easy to use schedule information that is in real-time can greatly facilitate the transition from driving to riding the bus.</p>	
g. Environmental Justice	At the project and regional levels, describe how the completed project promotes environmental justice (by avoiding, minimizing, or mitigating disproportionately high and adverse human health or environmental effects including social and economic effects on minority and low-income populations).
<p>The tools provided in this ITS project; enable SAMTD to provide efficient, safe, reliable public transportation that is easy to use by our customers. Public transportation in general improves air quality, reduces traffic congestion, provides needed transportation access to jobs, education, goods and services, and provides low cost alternative to owning and operating a car. The ITS components in this request will provide the tools for SAMTD to provide these services in the most efficient, safe, and convenient manner, without creating a disparate impact or disproportionate burden on low income or minority populations.</p>	
h. Efficiency	Describe how the project provides benefits to users of the system in a manner that is cost efficient.
<p>Transit ITS is a combination of several systems that by their very nature are designed to improve efficiency by providing sophisticated technology tools that provide real-time and static information in a variety of areas. When these areas are working efficiently in each of their respective areas, the users of the system benefit from the improved efficiencies.</p> <p>The first components, CAD/AVL, APC, Radio, Automated Stop Announcement / Overhead Stop Display systems have already been funded.</p>	

The CAD/AVL system tracks vehicles in real-time providing data to the dispatch component of the system. This data is utilized by dispatch staff to address on-time performance issues before they become a major factor for the customer. The CAD/AVL also provides the data feed for real-time passenger information, which is then utilized by the district's schedule and passenger information systems, allowing the customer to know when the bus will actually arrive, not just what is in the static printed schedule. Integrated into the CAD / AVL system is the digital communication system (radio). Radio and communication systems are essential for the connection between the vehicle operator, dispatch, and if need be emergency services personnel. The changing technologies in radio communications are a continual challenge, especially when SAMTD's local provider changes their technology, thus eliminating the current technology being used by SAMTD.

The APC system will allow the system to collect stop specific boarding and alighting data. This data is critical for addressing planning decisions regarding the need to adjust service along a particular corridor. The APC system is also used in conjunction with the automated farebox system to validate ridership against fares collected. Real-time APC data can assist dispatch staff with know when and where overload buses need to be deployed, before passengers are bypassed due to the bus being full. The current APC system is so obsolete that the data is no longer reliable. This creates major challenges for data collection by planning staff, and the lack of an operational APC system creates a labor-intensive process to collect data sampling required by the Federal Transit Administration's (FTA) National Transit Database.

Automated stop announcements and overhead display systems are a critical part of the district's ability to provide service to limited sight and hearing impaired individuals, many of whom are dependent on public transportation to get to employment, education, or to access goods and services. These systems provide audible and visible queues for navigating the system. The current system is no longer supported by the vendor, and is very time consuming when new messages need to be added or updated.

The remaining components will make the overall system complete. These are the components still needing funding.

Green extension, and signal priority systems will greatly enhance transit on-time performance in highly congested corridors. This is a system that is not currently in use by SAMTD, but has been included in the Unified Planning Work Program (UPWP) for many years as an ITS priority for SAMTD. As traffic volumes increase, the need for this tool also increases in order to keep the transit system operating efficiently and on time.

Security camera and recording systems are critical to the safety and security of the district's passengers, employees, and equipment. The current system records to a hard-drive that is only accessible once it has been removed from the vehicle. New systems utilize technology that allows for this recording to take place, and at the same time stream live video feed through secure channels. The live feed feature is critical to allow police and other first responders to remotely evaluate situations inside a bus during an incident that could present a hazard to the first responder, if they went in unprepared. Safety and security are of the utmost importance to SAMTD, and having the right tools to improve how the district efficiently manages incidents is a critical need for the district.

Finally, real-time vehicle systems monitoring technology is extremely valuable in taking a proactive approach to addressing potential major equipment failures before they happen. When a vehicle experiences a significant system failure, e.g. brake systems, engine, transmission, cooling, heating, steering, it is not only a major inconvenience to the customer and costly to the district, it can be disastrous with the potential for serious injury or death. While the district practices regularly scheduled preventative maintenance, real-time monitoring can catch major things that occur between service intervals.

i. Environmental Impact	Describe how the completed project minimizes the impact to the natural and built environment.
<p>A public transportation system that operates more efficiently will benefit the environment in two primary ways. The first is through a more efficiently operated system that improves how it can meet the customer’s needs. Whether it is with real-time passenger information, ADA assistance, or improved security systems, the likelihood is that more people will likely use public transportation. This will result in less congestion, less air pollution, and reduced wear and tear on the local infrastructure.</p> <p>The second environmental benefit is the ability of the public transit system to be able to operate more efficiently. This reduces fuel consumption, air pollution, less consumption of fossil fuels and lubricants. Overall, an improved public transportation system always has a positive impact on the environment.</p>	
j. Public Health	Describe how the completed project promotes public health benefits.
<p>In addition to the health benefits associated with the environmental impacts, public transportation results in other benefits as well. Statistics show that people who use public transportation are more physically active due to walking to and from bus stops. Public transportation integrates well with a variety of active transportation options. The ITS component to this portion is tied to the customer focused portion of the ITS system. The easier it is to use public transportation, the more reliable it is, the safer people feel using it, the more likely they will use it. The more people that use public transportation, the more of a public health benefit will be seen.</p>	
k. Other	Describe other benefits of the completed project or use of the requested transportation funds not listed above.
n/a	
<p>Section 5: Importance and Support Describe the importance and support for the project.</p>	
a. Importance and Near-term Need	Describe the project's priority for the agency, community, or region and its relative priority for the regional transportation system and how its importance is documented (e.g., identify adopted plans or policies, as applicable). Describe the need in terms of problems or lost opportunities that arise if the project is not awarded federal transportation funds in the near term.
<p>Many of the ITS components identified in this application have been included as priorities in the UPWP and the RTSP for many years. Additionally, they have been included in SAMTD’s strategic priorities as a critical step toward addressing failing systems, and adding systems that will greatly enhance SAMTD’s ability to serve the community reliably and efficiently.</p>	
b. Public Involvement	Describe any public involvement activities that demonstrated support for the project. List any letters of support attached to the application or submitted separately.
<p>Since ITS projects tend to be supportive of the visible part of the service, and yet are mostly behind the scenes, there has not been a significant amount of public involvement. One exception to this is the informal feedback received from customers on a very regular basis (nearly every day) wanting to know when SAMTD will have real-time information on bus arrivals. Additionally, many of the issues raised by the public such as on-time performance, being passed by due to schedules or overloaded buses, will be addressed by the ITS systems.</p>	
c. Existing Plans	Describe what approved plan this project is in, and what public process was used in developing and approving the plan (TSP, Corridor Study, Transit Plan, ITS Plan, etc.).

SKATS RTSP 2015 – 2035 p. E-15, SKATS FY 2017 – 2018 Unified Planning Work Program pp. 43 & 45, Salem Keizer Area Metropolitan ITS Plan Section 1.5

Section 6: Maps and Plans (Project Site and Vicinity Maps are required for all construction projects. Include other applicable maps or drawings, if available.)

	Description of attachments.
<input type="checkbox"/> Attached	
<input checked="" type="checkbox"/> Not Applicable	

Section 7: Timetable and Readiness Information: REQUIRED

a. Indicate anticipated timing for major activities for the project (preliminary engineering, right-of-way, construction start/completion, purchases, year the activity will be operational, etc.), as applicable. Provide a date, if known, or year.

Anticipated Dates	Activity
Oct - Dec 2018	Procurement process for the first phase of ITS implementation addressed with this application (in addition to APC and stop announcement system)
Feb 2019	Implement first phase of ITS projects
July 2018	Complete installation of CAD/AVL system
Sept – Dec 2018	Procurement process for the first phase of ITS implementation (most likely APC and stop announcement system)
Mar 2019 – Dec 2020	Procurement and implementation of all remaining phases of ITS project (sequence determined by ITS Master Plan priorities)

b. Describe any planning, coordination, or development activities that are planned or have taken place.

The CAD / AVL, APC, Radios, Automatic Stop Announcement / Overhead Stop Display portions of the project are already funded and the procurement process has already started for the CAD/AVL component.

A Transit ITS Master Plan is being developed by SAMTD’s consultant team and will be completed by early spring 2018.

c. Describe any issues or controversy that may delay the project.

The only aspect that may take more time is the component involving traffic signal green extension / signal priority. The delay would be due to the need to coordinate with local jurisdictions.

Section 8: Project Budget and Funding Request Summary: REQUIRED						
Note federal STBGP-U require at least 10.27% of funds from non-federal sources.						
Estimated Total Project Cost	\$1,458,171					
In this section, enter the amount of federal transportation funds requested, local match, and total estimated costs by project phase/use and preferred federal fiscal year	Phase or use of funds	Federal Fiscal Year Obligated	Federal Funds Requested	Required Match 10.27% Minimum	Additional Match	Total Estimated Cost
	<i>Preliminary Engineering</i>		\$	\$	\$	\$
	<i>Right of Way</i>		\$	\$	\$	\$
	<i>Construction</i>		\$	\$	\$	\$
	<i>Utility Relocate</i>		\$	\$	\$	\$
	<i>Other – Detail Below for 6 items</i>		\$1,308,417	\$149,754	\$0	\$1,458,171
Total request of federal funds:			\$1,308,417	\$149,754	\$0	\$1,458,171
Enter amounts and sources of committed funds and match:	\$149,754	Source:	Transit Local General Fund			
	\$	Source:				
	\$	Source:				
	\$	Source:				
	Total Match	\$149,754				
<p>Provide other funding information, as relevant: Project cost based on the following component estimates. These estimates are based on input received from discussions with vendors, input from SAMTD’s ITS Master Plan consultant, and from peer agencies. Actual individual component numbers are likely to vary due to interrelationships between ITS system components and how vendors associate costs in differing configurations. Numbers are expressed in full project cost, not grant amount.</p> <ol style="list-style-type: none"> 1) Transit Signal Priority / Green Extension - \$487,500 2) Security Camera System – \$440,700 3) Real-Time System Monitoring - \$78,000 4) Open Payment System - \$65,000 5) Integrated Software Package - \$344,500 6) Project Management – \$42,471 						
Section 9: Estimated Project Costs: REQUIRED						
A detailed cost estimate <u>must</u> be provided for construction projects.						
a. List estimated costs for the various activities listed below, as applicable to the proposed project.						
Items and activities						Estimated Cost
Project Planning and/or Administration						\$42,471

Preliminary Engineering	(Enter % of Construction cost) -->		\$
Construction Engineering	(Enter % of Construction cost) -->		\$
Environmental Work			\$
Right-of-Way and/or Building purchase			\$
Capital Equipment – Acquisition and Installation			\$1,415,700
Non-Construction Project Cost sub-total			\$1,458,171
Construction Estimate			\$
Construction Contingency	(Enter % of Construction cost) -->		\$0
Construction Project Cost sub-total			\$0
Non-Eligible Costs sub-total (other non-transportation project expenditures, e.g., non-reimbursable utilities)			\$0
Total Project Costs (Add the subtotals from above.)			\$1,458,171
b. Additional project cost information. Indicate below if other project cost information is being submitted such as detailed construction cost estimates or detailed capital equipment list and costs.			
<i>(In MS Word, right click box, pick properties, pick "checked.")</i>	Description of attachments		
<input type="checkbox"/> Attached			
<input checked="" type="checkbox"/> Not Applicable			
c. Project Administration Details. Indicate below how the project will be administered.			
<input type="checkbox"/> Local/Certified Agency <input type="checkbox"/> Local/LAL (Local Agency Liaison) <input type="checkbox"/> ODOT <input checked="" type="checkbox"/> Local/Transit <input type="checkbox"/> Other _____			
Section 10: Submittal Approval			
Project Sponsor Signature Authority Information - REQUIRED			
The Authorizing Authority identified below approved the submittal of this application on behalf of the Project Sponsor. Project sponsors will be required to sign an Intergovernmental Agreement (IGA) with ODOT prior to receiving any project funds. The IGA with the state will detail the requirements for the use and management of requested funds.			
Authorizing Authority Name:	Allan Pollock		

Authorizing Authority Title:		General Manager	
<input checked="" type="checkbox"/> Electronic submittal was approved by the identified authorizing individual. No signature needed if checked.			
Signature:		Date:	10-9-2017
Co-Sponsor Signature Authority Information			
The signature below demonstrates support of this application on behalf of the Co-Sponsor			
Authorizing Authority Name:			
Authorizing Authority Title:			
<input type="checkbox"/> Electronic submittal was approved by the identified authorizing individual. No signature needed if checked.			
Signature:		Date:	
If you have more than one Co-Sponsor, list further Co-Sponsors' submittal authority names and titles in the box below and ask those named to provide their signatures and the date signed by their names.			

Section 11: Project Summary Sheet	
Complete the project summary sheet (available at http://www.mwvcog.org/programs/transportation-planning/skats/planning-programs/transportation-improvement-program-tip/), and attach in word format to the application transmittal.	