



TranSystems

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April 10, 2017

Thoryn Simpson
Senior Procurement Analyst
Office of Management and Budget
City-County Building, Room 502
Pittsburgh, PA 15219

RE: Smart Streetlights RFI No. 2017-0001

Dear Mr. Simpson,

TranSystems is a local engineering firm that is completely independent from any vendor, manufacturer, contractor, or solution. We understand that the City is seeking a partnership with vendors and/or providers matching the RFI, however, based on the City's response to questions submitted, we understand that the City will consider ideas from any group with the proven capacity to execute design and planning solutions. As defined in the included Firm Overview, in greater detail, TranSystems has widespread diversity of experience, knowledge and proven projects. We desire to become the City's trusted advisor as it relates to the exciting technology future infrastructure identified in the RFI.

Our Pittsburgh Office leads our nation-wide Technology Services Group. This group develops Emergency Preparedness Plans for Cities and Transit agencies, Master Plans for multi-year solutions, designs city-wide video surveillance solutions, developed design solutions for city-wide fusion centers, communication way-finding, TVM network and fiber optic backbone for BRT light rail projects, designed access control, video, intercom, and intrusion detection systems for many local business (Including the David L. Lawrence Convention Center). Most of these projects include network solutions with backhaul, point to point or point to multi-point to key locations or communication spines. In addition, our Technology Group has extensive experience with LED lighting designs (road, bridge, and round-about) including tunnel lighting upgrades.

The Technology Services Group supports and is supported by our local road and bridge group whom is currently under contract with the City on several engineering projects. TranSystems is a seasoned, independent, nationally respected, consulting, and engineering firm. We feel strongly that we would bring a level of knowledge that the City would find invaluable when looking at technology, integration of systems, scalability infrastructure, road work, sidewalk / city scape objectives, and transportation growth in general.

We offer the enclosed approach as our response to the RFI. We understand the challenges related to selecting appropriate technologies solution that may stand the test of time. Our suggested partnership and approach allows the City to have an independent view of technology planning, resource for budget planning and scheduling, resource for design, specifications and RFP development along with independent contractor's selection with implementation oversight.

TranSystems understands that all information submitted will be public information in accordance with the Commonwealth of Pennsylvania Right to Know Laws.

If you have any questions regarding this response or our qualifications, please feel free to contact me. We look forward with our continued relationship.

Sincerely,

A handwritten signature in blue ink that reads "Todd G. Libengood".

Todd G. Libengood, PSP
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TranSystems brings innovative consulting, engineering, and architectural solutions to solve transportation infrastructure challenges.



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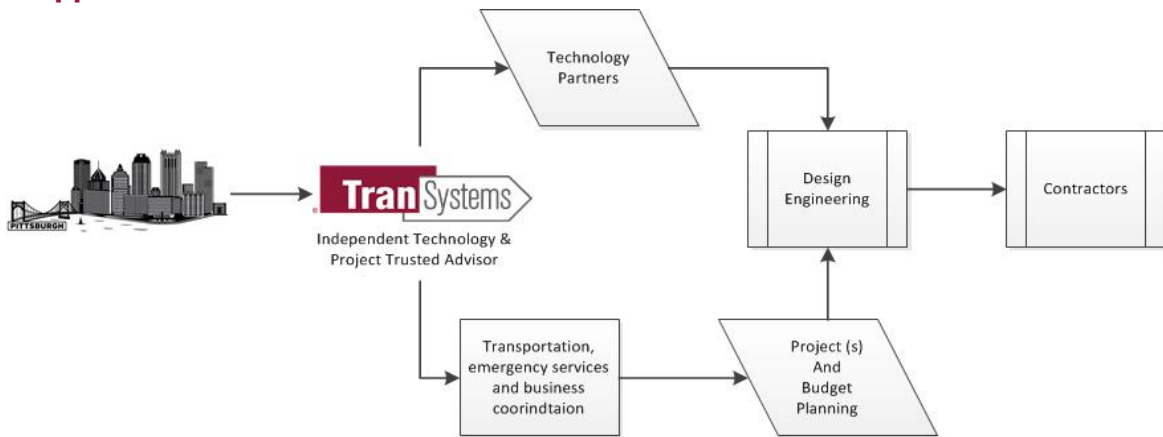



TranSystems brings clients solutions and many different engineering capabilities including logical controls, security, street lighting, and communication networks to provide a fully encompassed smart city platform. We deliver our expertise throughout the asset life cycle, from concept to completion.

Independent Technology Consultant

TranSystems recommends that the City seek independent support from an engineering firm that understands LED technology, communication infrastructure, city-wide emergency and security monitoring/control, road and sidewalk improvement (city scape), all forms of transportation operations, and the local culture. By having this expertise available to the City, TranSystems can be a trusted advisor from a high level to the most fine-tune detail. We feel that the Smart Street-Light project is a milestone in the overall goal and if this task is isolated from the city-wide plan the likelihood of a future disconnect is probable.

Suggested Approach



Based on our experience, an end state objective needs to be set with reachable milestones to allow many different city-wide parties to have a physical and financial part of the “Smart City” goal.

Our latest meeting with Mayor Peduto covered a variety of technology plans along with transportation expansion goals. These exciting advancements in the city should not be viewed as separate projects but milestones within the overall “Smart City” approach. TranSystems has helped many clients with Master planning. We proposed that the City consider the following plan:

Smart City Master Plan Including:

- Five Year Schedule
- Smart Lighting Budget Planning
- Approved Products
- Standard Bid Items



Smart City Master Plan - Coordinate with the city in developing overall objectives with specific milestones. Smart Lighting expansion would be an objective within the plan. The Plan should consider all of the potential technologies, features, attributes and scalability of a Smart City-Wide infrastructure in a holistic view will reduce the possibility of missing the “Big Picture” and/or the need for infrastructure enhancements within a few years after the Smart Streetlights are installed. Further, understanding the current success and challenges with the current City’s Fusion Center monitoring and control along with the current Traffic Monitoring and the City’s Video Surveillance System would avoid communications and integration conflicts such as wireless frequencies and features that do not interconnect.

Five Year Schedule - Coordination with Uber, CMU, Port Authority, Fire, Police, SEA, BRT and other city services regarding planning, wayfinding, sensors, technology needs, communication bandwidth and coordination of deferent project schedules as part of a joint effort to include in the Master Plan would allow a city wide view and assist in a unified collaboration between all parties for funding, grants and general buy-in to the plan. Develop areas with-in the city that will be enhanced with a five (5) year schedule.

Smart lighting Budget Planning – The areas to receive enhanced lighting will require design engineering for foundations and bidding documents. TranSystems is a full engineering firm that can provide a complete engineering solution including the estimated cost savings of changing to LED fixtures and estimated construction costs for each project when a 30% design level is completed.

Approved Products – TranSystems can assist the city with identify approved product/vendor partners and prepare standard installation details and specifications for smart lighting and other smart city future projects. We are experts in lighting solutions, video camera technology, network design solutions (including wireless) traffic signals, wayfinding, digital signage and programmable logical controls. From our experience we will provide our input on vendor solutions specific to open architecture to allow technology changes and other expansion opportunities.

Standard Bid Items – Assist the city in the development of standard details, specifications and cost average as projects are awarded and installed. Early establishment of installation standards and process’s avoids different appearance and quality of service. Further, providing bidders with the unit pricing of agreed vendors/partners the most qualifies contractor can be selected reducing scope and price creep beyond the agreed.

Experience

TranSystems has worked with many different entities within the city such as the SEA Port Authority of Alleghany County, Federated Investors, Alcoa and many others. We proposed on the city-wide video surveillance opportunity many years ago and presented our firm and proposal to the city, it was reported that we came in second during the evaluation. We desire to continue our involvement in the growth of the city and especially the smart city future.

Our Consulting and Engineering team has the experience needed as described in a few of our selected projects assignments as follows:



Pittsburgh Cultural Trust

The Pittsburgh Cultural Trust engaged TranSystems to review the security and life safety of its five cultural theaters and galleries, and direct enhancements in the interest of its patrons and guests, employees, art, and assets.

Subsequently, TranSystems developed an emergency preparedness plan and emergency evacuation plan for all facilities and assisted in emergency preparedness training of the staff.



David Lawrence Convention Center

TranSystems provided performance based specifications for the installation of the security system including Video Cameras, Access Control and a Command Center with suggested system design objectives for the architectural firm preparing the design drawings. Our relationship with the David Lawrence Convention Center has continued over the years with additional services.



In 2010, the David L Lawrence Convention Center contracted TranSystems to design a total Security Upgrade of the Convention Center to include the attached parking garage. The scope included the design and upgrade of the Video Surveillance System (Cameras, recording, and monitoring), Access Control system, and the total redesign of the Security Command Center (SCC). The upgraded SCC included adding a wall and access controlled door to improve protection of the SCC and the addition of large wall mounted flat panel monitors for operating the system. The final design included providing access to selected outdoor cameras to the City of Pittsburgh Police Department.

3D design rendering of the SCC



City of Boca Raton, FL Fusion Center Planning

The City of Boca Raton engaged TranSystems to support the city in the development of a security monitoring platform for a comprehensive video integration/monitoring system. The plan included how it will operate, types of equipment required and storage capabilities for current and future needs as well as recommendations for the size of the operating space, associated back room where equipment will be placed, and environment considerations. To ensure uniformity across the City, TranSystems developed a set of minimum standards/parameters for system equipment and systems to tie into the City system and provided video management policy and procedure templates.



Kansas City Area Transportation Authority (KCATA) Kansas City, MO

The Kansas City Area Transportation Authority (KCATA) provides public mass transportation in Kansas City, MO. KCATA and RideKC partnership covers the Kansas City Area and parts of Kansas.

KCATA selected TranSystems to evaluate the existing emergency preparedness plans and enhance the overall emergency planning program with new and revised plans matching TSA and DHS regulations. The security and emergency management programs were evaluated to determine the ability to meet reasonable threats in respect to homeland security and protection of their employees, contractors and patrons.



The scope included a threat and vulnerability assessment of KCATA/RideKC Park and Ride and Transit Centers with recommendations for mitigation approach to reduce risks. The physical security program including policies and procedures, fencing, gate systems, locking and keys, access control, video surveillance systems, and facility lighting was reviewed for KCATA main campus. It also included evaluation of existing emergency plans; their adequacy to address expected scenarios, adherence to industry best practices, and determination of the organization's ability to comply with the written procedures. Based on the collected data, observations, and interviews, the team developed recommendations for security and emergency program enhancement and antiterrorism infrastructure hardening.

Following the security and emergency program assessment, TranSystems was requested to design new CCTV and access control security systems for the main campus. The work included the design of voice notification, intercom interconnection to the Owner's telephone system, intrusion detection, and video detection systems. The systems were designed to accommodate multiple viewing/monitoring locations with a centralized database for system administration.

Kansas City Port Area Risk Management/Mitigation Plan

TranSystems was the Prime Contractor for a project to provide assistance to the Kansas City Area Maritime Security Committee (KCAMSC) under contract to the Mid America Regional Council (MARC) for the development and implementation of a Port-Wide Risk Management/Mitigation Plan using the *Emergency Preparedness and Continuity of Operations Manual for Best Practices*, sponsored by the American Association of Port Authorities. The Port Area stretches for over 110 miles of the Missouri and Kansas Rivers flowing through two states and five counties. The project included conducting a full assessment of the Port which included Hazard and Threat Identification, Hazard and Threat Analysis, Current State Capabilities, Current State Gap Identification, and recommendations for closing any gaps. As part of the project, TranSystems conducted a full assessment of the Port Area, identified vulnerabilities, and recommend best practice mitigation strategies to address those vulnerabilities for specific sites, including critical Rail Infrastructure such as:



- Argentine Yard Facility
- Murray Yard Facility
- Hannibal Movable Bridge (Pivot)
- Sibley Bridge
- ASB Rail Bridge (lift)
- Harry S Truman Railroad Bridge
- KC Southern rail yard
- The Kansas City Terminal (Expeditor/dispatcher for 300 trains per day for BNSF, UP, KCS, NS and CP)
- Kansas City Terminal Bridge
- Union Pacific Kansas River Bridge
- Union Pacific Rail Yard.

The assessment report identified vulnerabilities and recommend best practice mitigation strategies to address those vulnerabilities.



Pittsburgh Parking Authority

The Pittsburgh Parking Authority operates 10 parking garages and numerous surface lots in downtown Pittsburgh and nearby Oakland Pennsylvania.

In order to ensure compliance with City of Pittsburgh ordinances for safe operation of parking structures, TranSystems was engaged to examine the security program, review the garages' compliance with:

- Presence of security guard or other employee to provide escorts to vehicles if requested
- Compliance with garage security patrol requirements
- Presence and operation of emergency call stations
- Lighting
- Access control to non-patron areas



In addition to ordinance compliance review, the consultants conducted a review for crime prevention and detection using Crime Prevention Through Environmental Design (CPTED) concepts, and incorporated the security philosophy to deter, delay and/or deny, detect and respond. The findings were presented in a comprehensive security assessment report. In a follow-on assignment, TranSystems was engaged to assist in the consolidation of contracts for contracted security officers. The assignment included development of a guard specification and Request for Proposal as well as evaluation of proposals and a recommendation for selection.

Port Authority Allegheny County

TranSystems was retained to assess the physical security measures at administrative offices, cash handling operation and regional collection tills, regional bus maintenance facilities, and the LRT subway system, to determine the opportunity for centralized monitoring and to review operational procedures. TranSystems prepared recommendations and cost estimates to enhance the overall security program.



Headquarters System Design – Phase I

TranSystems developed a security system design and bidding documents for a two-phase, new headquarters security development program. The initial phase included operational management offices in a multi-tenant building. Design considerations included coordinated access with vehicle traffic flow, general building systems, and common access at the client location for building personnel. The system included integrated and interconnected proximity card access control; automated system controls; video monitoring and recording; remote video transmission for off-site monitoring; and duress alarms that communicated over the Authority's Wide Area Network to the Authority's Police Headquarters.



Headquarters System Design – Phase II

TranSystems was retained to expand the first phase security system, including additional pedestrian and vehicle access control and video system integration, operational interfaces to permit high levels of security during public board meetings, vault protection, and duress alarms for the executive floor addition. The design included integration into the existing system, and enhancements to permit multi-site monitoring.

Port Authority of Allegheny County (contd.)

Security Assessment and Design

Subway System Access Control Upgrade

During the course of a subway renovation, the Authority requested TranSystems to review a new access control system to ensure compatibility with the new headquarters access control system. The project included a cost-benefit analysis and analysis of potential return on investment for replacing the field control equipment. The analysis resulted in identifying a potential savings for subsequent work that would provide a return on investment within two months. Project activity included design and interconnection configuration for replacing and making operational the upgraded access control system, as well as audit and installation acceptance testing.

Harmarville Lighting Review

At the request of the Port Authority of Allegheny County (PAT), conducted a lighting review at the Harmar Division bus garage in Harmarville, Pennsylvania during nighttime conditions on March 20 and 22, 2006. The lighting review was performed to determine if any deficiencies existed with regard to safety, security, and optimum operation of the site security cameras. The Harmar bus garage surveys were completed during full nighttime conditions during a one-quarter-moon phase so that natural light would not affect the outcome of the consultant observations and findings. A comprehensive report of the findings and recommendations was prepared and submitted to the client.



Westinghouse Cranberry, PA

TranSystems designed security measures for a new 1,000,000 sq/ft., three building, and Westinghouse campus. The project included campus and site layout, IP Video Systems, Entry revolving doors, optical turnstiles, customized security desks, door hardware coordination, conduit infrastructure and implementation of a dedicated security network, providing construction administration for the implementation, and final acceptance testing.



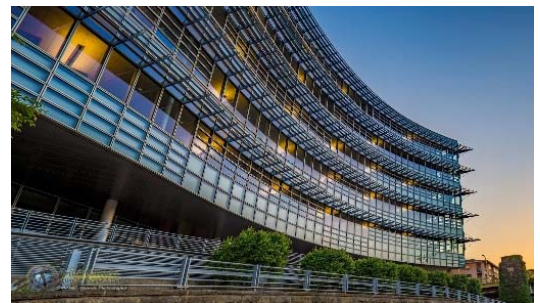
TranSystems provided security design and produced drawings and specifications for the installation of the security system, provided guidance in the bid specification for the security system and selection of a security systems contractor, and provided recommendations for system maintenance, sustainment and testing recommendations. In total TranSystems performed seven separate tasks:

- Task 1 – Review and Provide Input on Conceptual Design
- Task 2 – Advised Design Team of Security System Needs
- Task 3 – Performed Product Recognizance and Provide Recommendations
- Task 4 – Prepared Final Design and Bid Documents
- Task 5 – System Maintenance, Sustainment, and Testing Recommendations
- Task 6 – Provided Construction Installation Support
- Task 7 – Directed Effectiveness Testing

TranSystems also serves as Westinghouse’s preferred security consultant / engineer for all Westinghouse sites. This role includes an expert consultation on security related items from mechanical keying schedules to guidance on new physical security additions or modifications.

Alcoa, Pittsburgh, PA Security Design Services

TranSystems designed and developed a comprehensive security plan for the new world headquarters building. The assignment included: design of all building security systems and monitoring center operations, including complete access control, internal and external video surveillance, door monitoring, and intercom systems; design of security monitoring and Control Room layout and environmental requirements; development of installation specifications for all systems; assistance to the client in bid solicitation and contractor selection; provided system implementation support; and performed an audit of the security system installation and Monitoring Center operations.





**SR-0208 and Springfield Commons Blvd, Grove City, PA
Traffic Signal Project**

TranSystems provided on-call traffic engineering services for Grove City, PA. Throughout the construction phase of this intersection, TranSystems was the engineering firm providing guidance and consultation verifying installed products and that the construction was following the requirements and specifications per the design.



**Chester, CT – CT DOT Project
Street Lighting Project**

TranSystems designed the street lighting layout for the City of Chester, CT utilizing LED luminaires enhancing the overall design of the road and the surrounding buildings of Chester, Connecticut. The overall design recently won the 2017 ACEC (American Council of Engineering Companies) Connecticut's 2017 Engineering Excellence Award.

