



GOVERNMENT OF PUERTO RICO
PUERTO RICO INNOVATION & TECHNOLOGY SERVICE

REQUEST FOR INFORMATION
PRITS-2025-001

FOR DEPLOYMENT OF OPTICAL FIBER AND PROVIDING CONNECTIVITY TO
PUERTO RICO TRAFFIC LIGHTS NETWORK

AMMENDMENT #1
28th February 2025

PRITS reviewed the RFCs and issues this Addendum #1, which includes as follows:

A. Modifications to the RFI document

1. No modifications to the RFI document

B. Respuestas a las Solicitudes de Aclaraciones (RFC, por sus siglas en inglés)

Traffic and Network Requirements

1. Can you provide a detailed description of the type of traffic generated in the traffic light network, including the protocols used, expected volumes, and prioritization requirements to ensure optimal performance?

The traffic will include signaling data, telemetry, and potential video surveillance feeds, with prioritization for real-time monitoring and control of traffic signals.

Control Center Connection Capacity

2. What is the minimum required bandwidth capacity for the Traffic Control Center's connection to the traffic light network? Are there specific scalability requirements?

Assume a 1:1 rate for this exercise. However, more details will be given during the RFP process.

Latency and Jitter Requirements per Traffic Type

3. What are the maximum allowable latency and jitter thresholds for each type of traffic within the network? Are there differentiated metrics for signaling, video surveillance, or telemetry traffic?

The maximum latency for signaling should be below 100 ms, with jitter under 10 ms. For video surveillance, latency up to 250 ms is acceptable, with a higher tolerance for jitter.

Quality of Service (QoS) Requirements

4. What levels of Quality of Service (QoS) must be guaranteed in the network, considering traffic classes such as signaling, real-time monitoring, and management connectivity?

High priority should be given to signaling and real-time traffic, with secondary priority for telemetry and video feeds.

Virtual Segmentation (VLAN) Requirements

5. Is virtual network segmentation via VLANs required? If so, how should VLANs be structured in terms of security and traffic prioritization?

Yes, VLANs are required for network segmentation. Traffic should be prioritized based on its class, with security measures like encryption and access control.

Wireless Connectivity Needs

6. Is there a need to integrate wireless connectivity (WiFi) into the traffic light infrastructure? If so, what are the specific use cases considered for this connectivity?

It is not needed at this time.

7. Is PRITS open to a hybrid fiber-wireless model for difficult-to-reach locations?

Yes, PRITS is open to hybrid models for rural or hard-to-reach locations. However, you should be more specific in which of the locations provided you will need that model.

Consideration of Wireless Connectivity for Redundancy and Emergencies

8. Is the integration of wireless connectivity (LTE/5G) being considered as a redundancy mechanism in case of failures in the primary connectivity?

Our main focus is to deploy fiber optic, however, please provide in which areas you would propose such connectivity.

Type of Connectivity (Private, Public, or Hybrid)

9. Should the traffic light network connectivity be exclusively private, is public connectivity accepted, or is a hybrid model considered?

PRITS prefers a private network, but is open to hybrid models depending on feasibility and the provider's capabilities.

Internet Service Requirements

10. Are there specific requirements in terms of bandwidth, availability, and redundancy for the traffic light network's internet services?

We are not requiring internet services, we are requesting for connectivity to the traffic control center.

Cloud and Datacenter Service Requirements

11. Are there specifications on whether monitoring, control, and data storage services should be hosted in a local datacenter, in the cloud, or in a hybrid infrastructure?

We are requesting information on fiber optics connectivity, not on data storage services.

Cybersecurity Service and Monitoring Requirements

12. What security controls and standards are required for protecting the network infrastructure and transmitted data? Is continuous security monitoring, intrusion detection, or incident response mechanisms required?

Continuous security monitoring, intrusion detection, and encryption for data transmission are required. Access control measures should also be in place.

13. Are there specific encryption or security protocols required for traffic traversing the fiber network?

Yes, encryption protocols such as AES-256 (as a minimum) must be used to secure data traveling over the fiber network.

14. Is PRITS planning to deploy Next-Generation Firewalls (NGFW) or Zero Trust Architecture (ZTA) for security monitoring?

It is not part of the scope requested on this RFI

Request for an Extension to the RFI Submission Deadline

15. Considering the level of detail and specificity required in this RFI, particularly regarding the extensive list of locations, network infrastructure, coverage areas, and technical specifications, would PRITS consider extending the submission deadline? If an extension is feasible, could you indicate the revised deadline and any relevant considerations?

PRITS prefers to maintain the current submission deadline.

Existing Infrastructure and Right-of-Way Access

16. Does PRITS or PRHTA have an inventory of existing underground and aerial infrastructure, such as conduits, ducts, and fiber access points, that can be leveraged for this deployment?

PRHTA has an inventory of infrastructure that can be leveraged for this deployment, and it will be made available to providers when we finally define the RFP process. This RFI is to request such information to the providers.

17. Are there any restrictions or predefined routes for fiber deployment along state highways and municipal roads?

PRHTA will provide guidelines and preferred routes, but there may be restrictions depending on the location and local regulations. Nevertheless, providers must submit their actual fiber network coverage, based on the 1229 traffic lights locations.

Permitting and Regulatory Requirements

18. What specific permitting processes are required for trenching, pole attachments, and aerial fiber deployments along PRHTA-managed roadways?

Permits will be required for trenching and pole attachments, and PRHTA will facilitate the application process. As part of this RFI process we are asking for the potential challenges or permitting requirements you, as a provider, foresees that could impact the implementation. Also we are requesting any dependency on third-party infrastructure, etc. see page 7 of the RFI document.

19. Does PRITS have agreements in place with PREPA (Puerto Rico Electric Power Authority) for pole access, or will providers need to negotiate separate access agreements?

At this stage, PRITS is gathering information on fiber optics connectivity and coverage of the existing traffic lights. Pole attachments and pole access might be evaluated later in the process once the RFP is issued.

Construction Standards and Specifications

20. What are the minimum specifications for fiber optic cable (e.g., single-mode vs. multi-mode, fiber count, jacket type) that PRITS requires for this deployment?

See answer to RFC 52.

21. Are there any specific depth and conduit size requirements for underground fiber installations?

At this stage, PRITS is gathering information on fiber optics connectivity and coverage of the existing traffic lights. Note however that all the federal, national and local Optical Fiber regulations are applicable to this RFI.

22. Should new fiber runs include spare capacity for future expansions? If so, what percentage should be reserved?

Yes, at least 50%

Redundancy and Resiliency Requirements

23. Is the fiber network required to be deployed in a ring topology for redundancy, or will PRITS allow point-to-point architecture?

PRITS allows a point-to-point architecture, although redundancy would be positively evaluated.

24. Are there specific storm resilience or hurricane-proofing requirements for aerial and underground fiber infrastructure?

The federal, national and local Optical Fiber regulations are applicable to this RFI

Power and Infrastructure Availability

25. Do the existing traffic light pedestals have available power capacity to support additional telecom equipment such as network switches, backup power, or fiber termination panels?

The Traffic Lights infrastructure is provided on an “as is basis”, and providers are allowed to connect to the existing power (as long as in compliance with regulations). If additional power is required, the provider is responsible for securing additional power.

26. If additional power is needed, will PRITS facilitate access to power connections, or will the provider be responsible for securing additional power infrastructure?

See Answer to RFC 25.

27. Do the traffic light pedestals have sufficient physical space availability for installing new telecommunications equipment? If so, what is the approximate available space capacity?

The Traffic Lights infrastructure is provided on an “as is basis”, and providers may use the existing infrastructure. If additional space is required, the provider is responsible for providing it.

Interconnection and Backhaul Requirements

28. Will the fiber network be interconnected with PRITS' existing transport network, or must providers deliver traffic directly to the Traffic Control Center?

Providers shall deliver traffic directly to the Traffic Control Center. In addition, PRITS may request connectivity to PRITS transport network.

29. Are there specific locations designated as interconnection points where fiber providers must deliver services?

The main interconnection point is PRHTA Traffic Control Center. Note however that PRITS intends to have several interconnection points for redundancy and resiliency.

30. Does PRITS require multiple carriers to interconnect at designated meet-me points for resiliency?

The main interconnection point is PRHTA Traffic Control Center, where all carriers should interconnect. Note however that PRITS intends to have several interconnection points for redundancy and resiliency.

Timeline and Project Phasing

31. What is the expected timeline for deployment, and is the project expected to be delivered in phases? Are there specific priority areas where PRITS expects fiber connectivity to be established first?

PRITS expects a first phase of Traffic Lights connected within 1 month (all those where close by connectivity already exists). The remained of the sites within 6 months.

32. Would PRITS consider a phased deployment approach, prioritizing certain areas before others?

See answer to RFC 31

Ongoing Maintenance and Service Level Agreements (SLAs)

33. What are the minimum response time and restoration SLAs required for fiber cuts or infrastructure failures?

Each Provider shall outline in their responses their SLAs in terms of response times and uptime guarantees.

34. Will PRITS require a maintenance plan that includes proactive fiber testing, inspections, and repairs?

PRITS requires providers to maintain and repair the fiber. Each provider shall outline in their responses their SLAs in terms of response times and uptime guarantees.

35. Does PRITS have an existing Network Operations Center (NOC) that will monitor the network, or must providers include a monitoring solution as part of their proposal?

PRITS would not monitor the network associated with Traffic Lights. PRHTA however, shall monitor the availability of connectivity on each Traffic Light.

36. ¿La contratación se hará con PRHTA o con PRITS?

Todavía no se ha definido, una vez recopilemos la información del RFI tomaremos la decisión.

37. ¿A qué término se haría esta contratación?

El término del contrato se determinará en función del alcance y los entregables. Este será detallado cuando se finalice el RFP.

38. ¿En qué idioma debe contestarse el RFI?

Puede ser en inglés o español

39. ¿Se puede cotizar parcialmente o se tiene que presentar propuesta para servicio en todos los semáforos?

Eso se determinará en el RFP. Este RFI es para recopilar información y determinar las opciones del RFP. No obstante, todo dependerá de la información que nos sometan los proveedores y del análisis de factibilidad.

40. ¿Las coordinaciones para accesos a los semáforos se harán con PRITS o PRHTA?

Será una coordinación con PRITS, PRHTA y cualquier otra agencia que entendamos pueda facilitarnos. Cuando se realice RFP se definirá la metodología de trabajo con los responsables, incluyendo las coordinaciones.

41. ¿La implementación de conectividad incluye los semáforos y la localidad usada como centro de control?

En principio y según lo detalla el RFI, la conectividad debe incluir la conexión al centro de Control.

42. ¿Cuál es la dirección y coordenadas del Centro de Control?

Actualmente está ubicado en Minillas, pero será relocalizado próximamente. La localización final se notificará en el RFP.

43. ¿Se requiere solo conexión de data o conexión de data con puerto de Internet?

Son conexiones de data.

44. Si fuera solo conexión de data sin puerto de Internet, ¿requieren una conexión hacia la localidad central en L2 o L3?

Al momento lo que solicitamos es conectividad L1/L2. En el RFP se definirá si deseamos incluir el enrutamiento como parte de las propuestas.

45. ¿Cuál es el requerimiento de ancho de banda del centro de mando?

Será determinado por la cantidad de conexiones que se llevarán al Centro de Control. Se definirá más detalles en el RFP. Sin embargo, deben estar preparados para ofrecer circuitos de 1 Gbps hasta 100 Gbps al centro de control de tráfico.

46. Si hubiese que consolidar las conexiones, ¿sería a un solo punto o varios puntos?

Las conexiones se consolidarán en varios puntos para redundancia y optimización

47. ¿Cuál sería el aprovisionamiento requerido? Por ejemplo 1:1, 2:1, 4:1

Para propósitos de este ejercicio lo definiremos de 1:1.

48. ¿La solución requiere IP's fijos en cada semáforo?

Sí, se requerirán IP fijas por cada semáforo. No obstante, pueden presentar sus soluciones y alternativas en este ejercicio.

49. De requerir IP's, ¿cuántos serían por cada localidad?

El número de IP necesarias dependerá de los dispositivos en cada sitio, pero típicamente una IP por localidad será suficiente.

50. ¿Podrían ser IPv6 o tienen que ser v4?

Se requieren direcciones IPv4 para este proyecto, aunque IPv6 podría considerarse para la escalabilidad futura.

51. ¿Cada instalación en semáforo necesita conexión metálica (RJ) o conexión fibra?

Cada instalación de semáforo requerirá conexión de fibra óptica

52. Si es fibra, ¿qué especificación de cableado fibra necesita (asumiendo WorldNet no está poniendo equipos activos en cada semáforo)?

Single mode con un mínimo de 12 fibras y chaquetas resistentes a la intemperie

53. Si la implementación requiere equipos activos en cada semáforo necesitamos definiciones de parámetros de espacio, alimentación eléctrica, medidas de humedad y temperaturas de operación (asumiendo es una caja de control metálica en el suelo encima de base cemento).

Los equipos activos necesitarán espacio dentro de la caja de control, con suficiente alimentación eléctrica y controles ambientales. Los requisitos específicos se proporcionarán durante el proceso de RFP

54. ¿La conexión de fibra física es al ensamblaje metálico del semáforo mismo o a la caja de control en el suelo?

La conexión de fibra óptica se hará a la caja de control en el suelo. No obstante, pudiera haber situaciones que requieran conexiones hasta el semáforo

55. ¿La conexión de fibra física necesita ser soterrada protectora o puede ser aérea?

La fibra óptica debe ser enterrada con una protección adecuada, a menos que se pueda instalar aéreamente en áreas donde se permita.

56. ¿Si el servicio es Internet, cada instalación en semáforo necesita una unidad portal de protección Firewall local?

No se vislumbra conexiones al internet en los semáforos.

57. ¿Estos serían provistos por la Agencia o necesitan ser provistos por proveedor?

Ver respuest anterior

58. ¿Si es provisto por proveedor lo estarían comprando o requieren sean en servicio manejado?

Ver respuesta anterior

59. ¿A cuánto tiempo requieren el licenciamiento?

[Ver respuesta anterior](#)

60. Si requieren tener un Unified Threat Management Device en cada semáforo, ¿deben los dispositivos ser monitoreados proactivamente por el proveedor? ¿Sería SOCaaS+ SIEMaaS?

[Ver respuesta anterior](#)

61. ¿PRHTA proveerá pedestal y área protegida para colocar los equipos necesarios y que sea punto de demarcación o tuviéramos que construir una estructura?

[PRHTA proveerá pedestales “as-is” y áreas protegidas para los equipos necesarios.](#)

62. ¿PRHTA proveerá facilidades eléctricas para energizar los equipos en cada localidad?

[Sí, PRHTA proveerá las instalaciones eléctricas “as-is”.](#)

63. ¿Requieren UPS en cada punto?

[Sí, se requerirá un sistema UPS en cada punto.](#)

64. ¿Cuáles son las especificaciones que requieren para el equipo y cuánto tiempo de resguardo debe proveer?

[El UPS debe proporcionar al menos 4 horas de respaldo, con especificaciones a detallar durante la fase de diseño detallado.](#)

65. ¿El equipo que recibirá la fibra lo proveerá el cliente o WorldNet?

[El equipo de terminación de fibra será proporcionado por el proveedor.](#)

66. ¿Cómo se trabajarán equipos que se dañen en caso de que el cliente no provea las condiciones necesarias para los equipos y estos se dañen?

[El proveedor se encargará de reparar o reemplazar cualquier equipo dañado, con provisiones para asegurar que las condiciones del sitio de instalación sean las adecuadas. Ciertamente, el proveedor debe proporcionar cuáles son las condiciones adecuadas para el equipo. No obstante, deben recordar que estos son conexiones en el exterior y el equipo debe ser "rugged" para trabajar en condiciones típicas de exterior, como lo son las áreas de los semáforos.](#)

67. ¿Qué tipo de redundancia o failover requieren en caso de avería?

Se requiere una conexión secundaria para redundancia.

68. ¿Requieren un circuito secundario para redundancia de conexión en alguna localidad?

Sí, se requerirán en todas las localidades.

69. ¿Sería del mismo ancho de banda del circuito principal de la localidad?

Sí, el circuito secundario coincidirá con el ancho de banda del circuito principal.

70. ¿Qué integración solicitan con el Traffic Management System existente?

La solución debe integrarse perfectamente con el sistema de gestión del tráfico existente. Detalles del mismo se entregarán cuando se realice el proceso de RFP.

General Information

71. What are the specific problems you are trying to solve with this service/product?

The main objective is to establish reliable connectivity on all Traffic Lights.

72. How would you define success for this project? What are the key criteria for measuring success?

All traffic lights reliability connected within 6 months.

73. What is the estimated budget for this project?

PRITS does not intend to provide the estimated budget for this project.

74. Upon contracting, how long will the contract last?

The duration of the Contract shall be contained on the RFP.

Scope and Product or Service Requirements

75. What specific functionality do you require from this product/service?

Connectivity and redundancy

76. Do you have the list of locations for the additional expansion plan?

The list of sites is provided in Annexure A

77. What are the critical intersection locations and high traffic areas?

While there are critical intersections and high traffic areas, the objective of the project is to connect all sites.

78. Are there any technical specifications or detailed requirements we need to know to meet your needs?

All requirements are contained in the RFI documentation. Additional requirements may be included in the RFP.

79. Are there any customization or adaptability requirements?

None at this stage.

80. If you are unable to reach them with fiber, is there another solution that could be presented?

PRITS encourages providers to present their proposed solutions, preferably fiber, but open to other solutions.

81. How do you envision the process of integrating this service/product into your existing infrastructure or systems?

Needs to be integrated and consolidated at PRHTA Control Center.

Timeline and Schedule

82. What is the target date for implementation or delivery of the entire product/service?

6 months

83. Could there be any additional time extensions for delivery of the RFI?

See answer to RFC 15

84. What is the estimated timeline for project implementation, from contracting to final delivery?

See answer to RFC 82

85. Are you open to proposals with different lead times depending on the solutions?

Time is of the essence in this procurement, hence PRITS shall positively evaluate compliance with the 6 months timeframe.

Support and Training

86. What type of after-sales support do you consider necessary (technical support, upgrades, maintenance, etc.)?

Technical support and maintenance are mandatory.

87. Will you require training for your staff in the use of this product/service?

No

Performance and Safety Expectations

88. What are the performance standards or metrics we must meet under (NEC) and (FHWA)?

See answer to RFC 33

89. What is the expectation regarding information security and data protection?

See answer to RFC 5, RFC 12 and RFC 13

90. Are there specific regulations that we must consider when offering this service?

See answer to RFC 21

Terms of Contract

91. Are you willing to negotiate contract terms based on the scope of services?

See answer to RFC 5, RFC 12 and RFC 13

92. What is the process for approval of a formal proposal after receiving this information?

Based on the RFI responses and existing connectivity footprint, PRITS shall evaluate the existing alternatives and issue an RFP.

93. Are there any specific payment terms or commercial terms that we should be aware of?

PRITS standard payment terms and conditions.

94. Will the auction be awarded in its entirety to a single vendor or on a line-item basis?

Multiple vendors based on their footprint and time to deployment.

Integration and Compatibility

95. Does the product/service need to integrate with other systems, platforms or tools already in place in your company?

No

96. What are the main systems with which the product/service should be compatible?

Mainly with the Traffic light controllers, but note that others might be added in the future.

97. Do you have an internal team to assist with integration or are we expected to handle the entire process?

The integration with the Traffic Light Controllers software, signaling and monitoring tools shall be done by PRITS and PRHTA.

98. Can You describe the type of traffic and network requirements?

Mainly signaling and monitoring, but additional services might be added in the future.

99. What bandwidth capacity is required at the control center?

1Gb

100. What are the latency and jitter requirements for each type of traffic?

[See answer to RFC 3](#)

101. Which are the requirements for Quality of Service (QoS)?

[See answer to RFC 33 & RFC 34](#)

102. Can you provide the virtual segmentation (VLAN) requirements?

[See answer to RFC 5](#)

103. Do you need WiFi in any location?

No

104. Is there space and power available at the pedestal? How much?

[See answer to RFC 25 & RFC 27 & RFC 61](#)

105. Do you consider wireless connectivity, especially for redundancy or emergency?

[See answer to RFC 6 & RFC 7 & RFC 8](#)

106. What kind of connectivity is required? Private, public or hybrid?

[See answer to RFC 9](#)

107. Can you share the Internet service requirements?

[See answer to RFC 10](#)

108. What is there any cloud/datacenter requirements?

None

109. What are the cybersecurity service and monitoring requirements?

[See answer to RFC 12 & RFC 13 & RFC 14](#)

Network related questions:

110. Would PRITS be open to or have a preference for deployment options that could provide a significantly shorter timeline for provision of initial connectivity as the high-speed bandwidth network is built/connected?

[See answer to RFC 7](#)

111. What types of devices and data are envisioned to require a combined 1 Gbps? Is there a need for more or less bandwidth depending on the type of applications or locations?

[See answer to RFC 98. Note that additional services may be added.](#)

112. What are some other use cases envisioned by PRITS and PRHTA that can benefit from high speed bandwidth?

There is a potential for Video deployment.

113. What are some differences in use cases envisioned between urban and rural locations?

There is none. PRHTA and PRITS intends to deploy the same services in urban and rural locations

114. What are some differences in deployment challenges between urban and rural locations?

It is really up to the existing footprint of the providers

115. Does every intersection equipped with traffic signals need the same level of bandwidth?

Yes

116. Would PRITS and PRHTA be open to alternatives to physical fiber connections, such as high-speed wireless connectivity?

See answer to RFC 8

117. Are there provisions for providing connectivity redundancy or backup nodes at certain locations to provide network resiliency?

See answer to RFC 23 & RFC 29 & RFC 30 & RFC 46 & RFC 67 & RFC 68

118. What agencies and departments are responsible for connecting installed fiber to traffic control equipment? Do they have full access to hand holes at each intersection in their area to connect the traffic signals and the network?

PRHTA & PRITS

119. What agencies and departments are responsible for operating the traffic signals? Is it always PRITS?

Mainly PRHTA with the support of PRITS

120. What agencies and departments are responsible for maintaining the connections between the communications network and the traffic control equipment?

Mainly PRHTA with the support of PRITS

121. How many different parties will be involved across all the municipalities described in this RFI?

Mainly PRHTA & PRITS, although in the future, additional agencies may use any available bandwidth

122. What is the PRHTA centralized traffic control center intended to be equipped to handle? Will there be one or multiple locations? Will one location be operating all the intersections in the scope of this RFI or will there be a division of intersections among multiple traffic control centers across the island? Will it/they operate 24/7?

[One location on a 24/7 basis, with a DR site as a backup.](#)

123. What is the current system and what is anticipated will be the system deployed in concert with the future initiative contemplated by this RFI?

[The current system is already deployed. Waiting on connectivity to add additional traffic light intersections.](#)

124. Please clarify what "...build capacity for next-generation Smart Transportation." (p. 4) means to PRITS.

[Transportation is constantly evolving and there will be an increasing need to connect vehicles to infrastructure \(V2I\).](#)

125. Is there a requirement for video streaming from intersections? If so, what resolution and frame rate are needed?

[Not at the moment but there is potential for such an initiative.](#)

126. What is the current power infrastructure at intersections? Are there backup power requirements for network equipment?

[See answer to RFC 25](#)

127. Are there specific weather-related requirements for network equipment given Puerto Rico's climate?

[Yes, all the federal, national and local regulations apply.](#)

128. What is the expected timeline for implementing connected vehicle technologies? How should this impact network design?

[There is not timeline yet for V2X technologies although PRITS is constantly monitoring the evolution of Smart Transportation.](#)

129. Are there specific requirements for network monitoring and management systems?

[See answer to RFC 12 & RFC 13 & RFC 14](#)

130. How will maintenance responsibilities be divided between traffic signal technicians and network maintenance personnel?

Network technicians shall be responsible from the POC outbound and traffic signal technicians from the POC inbound.

Traffic infrastructure questions

131. Would PRITS be open to or have a preference for deployment options that could provide a significantly shorter timeline for provision of initial connectivity as the high-speed bandwidth network is built/connected?

[See answer to RFC 110](#)

132. What types of devices and data are envisioned to require a combined 1 Gbps? Is there a need for more or less bandwidth depending on the type of applications or locations?

[See answer to RFC 111](#)

133. What are some other use cases envisioned by PRITS and PRHTA that can benefit from high speed bandwidth?

[See answer to RFC 112](#)

134. What are some differences in use cases envisioned between urban and rural locations?

[See answer to RFC 113](#)

135. What are some differences in deployment challenges between urban and rural locations?

[See answer to RFC 114](#)

136. Does every intersection equipped with traffic signals need the same level of bandwidth?

[See answer to RFC 115](#)

137. Would PRITS and PRHTA be open to alternatives to physical fiber connections, such as high-speed wireless connectivity?

[See answer to RFC 116](#)

138. Are there provisions for providing connectivity redundancy or backup nodes at certain locations to provide network resiliency?

[See answer to RFC 117](#)

139. What agencies and departments are responsible for connecting installed fiber to traffic control equipment? Do they have full access to hand holes at each intersection in their area to connect the traffic signals and the network?

[See answer to RFC 118](#)

140. What agencies and departments are responsible for operating the traffic signals? Is it always PRITS?

[See answer to RFC 119](#)

141. What agencies and departments are responsible for maintaining the connections between the communications network and the traffic control equipment?

[See answer to RFC 120](#)

142. How many different parties will be involved across all the municipalities described in this RFI?

[See answer to RFC 121](#)

143. What is the PRHTA centralized traffic control center intended to be equipped to handle? Will there be one or multiple locations? Will one location be operating all the intersections in the scope of this RFI or will there be a division of intersections among multiple traffic control centers across the island? Will they operate 24/7?

[See answer to RFC 122](#)

144. What is the current system and what is anticipated will be the system deployed in concert with the future initiative contemplated by this RFI?

[See answer to RFC 123](#)

145. Please clarify what "...build capacity for next-generation Smart Transportation." (p. 4) means to PRITS.

[See answer to RFC 124](#)

146. Is there a requirement for video streaming from intersections? If so, what resolution and frame rate are needed?

[See answer to RFC 125](#)

147. What is the current power infrastructure at intersections? Are there backup power requirements for network equipment?

[See answer to RFC 126](#)

148. Are there specific weather-related requirements for network equipment given Puerto Rico's climate?

[See answer to RFC 127](#)

149. What is the expected timeline for implementing connected vehicle technologies? How should this impact network design?

[See answer to RFC 128](#)

150. Are there specific requirements for network monitoring and management systems?

[See answer to RFC 129](#)

151. How will maintenance responsibilities be divided between traffic signal technicians and network maintenance personnel?

[See answer to RFC 130](#)