1. **Identification of portions of the Regional ITS Architecture being implemented:**

   - Charming City Department of Public Works (CCDPW) is represented generically in the Regional ITS Architecture as a “Level 2A” traffic management agency (see Appendix F), and performs *Traffic Management Subsystem* functions, including signal preemption (see Sec. 6.3).

   - Charming City Fire Department (CCFD) vehicles are represented generically in the Regional ITS Architecture as “Emergency Vehicles” (see Appendix A) and performs *Emergency Vehicle Subsystem* functions, including signal preemption (see Sec. 6.2).

2. **Identification of participating agencies roles and responsibilities:**

   CCDPW and the CCFD are the project participating agencies. DPW will be responsible to maintain the traffic signal preemption devices and all association communication to the traffic signal and controller. The Fire Department will be responsible to maintain the strobe lights atop fire trucks and vehicles.

3. **Requirement definitions:**

   The high-level requirements, as defined in Section 6 and Appendix G of the Regional Architecture, are:

   CCDPW field equipment will:
   - Receive preemption requests from emergency vehicle operators (where applicable)
   - Provide preemption response (where appropriate)

   The CCFD vehicles will “preempt signals via short-range communication directly with traffic signal control equipment at the roadside.”

4. **Analysis of alternative system configurations and technology options to meet requirements:**

   3M has been the supplier, manufacturer of the city’s existing preemption devices. We will analyze an alternative system, the Global Positioning System (GPS) preemption priority system. Preliminary investigation of the alternative system indicated the city would need to replace a portion of existing traffic control hardware and communication devices atop fire truck vehicles in order to make the change over to the GPS system.

   The GPS preemption priority system would only require 1 device (radio technology) that receives information from all directions. The system also accommodates hills, curves
and varied distances without the need for advance detectors. The GPS preemption priority system would support emergency and transit services.

5. **Procurement options:**

We will conduct research of other preemption devices on the market to assess the feasibility of conducting a competitive bidding. Devices on the market would need to be compatible with the existing traffic signal infrastructure to induce a competitive pricing.

6. **Identification of applicable ITS standards and testing procedures:**

The only architecture flow involved in this project is “local signal preemption request,” which is addressed in NTCIP 1201 and 1211. However, the new equipment must be compatible with the existing system, which uses proprietary optical transmissions for this purpose. Therefore, the existing transmissions must continue to be used.

7. **Procedures and resources necessary for operations and management of the system:**

To ensure the continuous operation of the system there will be designated staff within Charming City Department of Public Works and the Fire Department and an appropriate budget allotted for management, and maintenance of signal preemption devices and strobe lights atop fire vehicles.