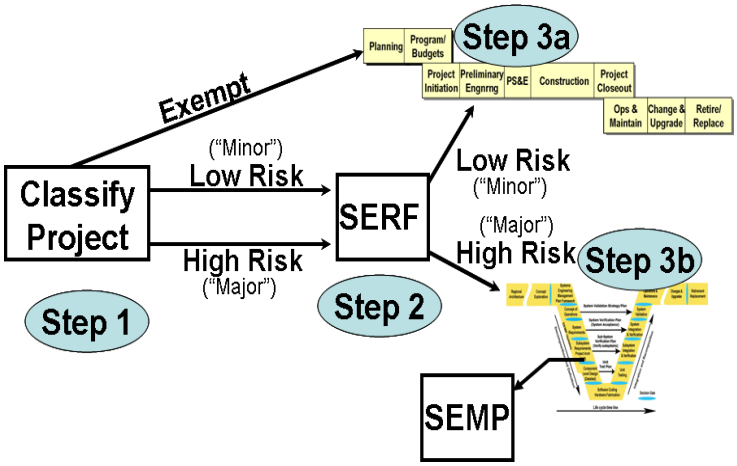
SYSTEMS ENGINEERING REVIEW FORM (SERF)

Part 1. General Project Information

The SERF is normally submitted as part of the E-76 package when initial funding is requested. A full description of funding steps for ITS projects appears in Section 13.1 of the LAPG. The SERF must be filled out for **all** ITS projects unless they are "**Exempt**." For definitions of an Exempt ITS project, see LAPG Section 13.2. A full discussion of how a local agency uses the SERF during the programming and funding steps is in LAPG Section 13.4, in the section titled "Local agency (include consultants in project management role)". That process is summarized in the figure at the right.



Please provide the following background information. In most cases, 1-3 sentences will be sufficient for each item, but you may include as much as you feel needed. If you need more space, the field will expand automatically.

A. Project Contact – Name, position, phone, email.

B. Project Objectives – What is the purpose of the project? What needs (deficiencies) are being addressed?

C. Project Summary – What solutions will address the needs? What major elements will be installed? What major function(s) will be performed?

D. Work to Date – Any preliminary planning, investigation of options, associated internal or external systems examined, etc.?

E. Risk Assessment Guidance – Although this assessment is not a regulatory requirement, the answers to these questions will help you understand the extent of risk involved in this project. A full discussion of risk factors is available in LAPG Section 13.2, with a summary in Table 13-1.
For each question, check Yes or No or Not Sure.

Question:	Yes	No	Not Sure
1. Will the project depend on ***only your agency*** to implement and operate?	☐	☐	☐
2. Will the project use only software proven elsewhere, with ***no*** new software writing?	☐	☐	☐
3. Will the project use only hardware and communications ***proven*** elsewhere?	☐	☐	☐
4. Will the project use only ***existing interfaces*** (no new interfaces to other systems)?	☐	☐	☐
5. Will the project use only ***existing system requirements*** that are defined in writing?	☐	☐	☐
6. Will the project use only ***existing operating procedures*** that are defined in writing?	☐	☐	☐
7. Will the project use only technologies with service life ***longer*** than 2-4 years?	☐	☐	☐

If all of the above are Yes, that is a preliminary indication that your project is **Low-Risk**.

Part 2. Regulatory Compliance Information

Please answer each question briefly (often one paragraph is enough). If the question cannot be fully answered now, but will be answered during the project implementation, please indicate the step at which it will be answered. As you respond to each question on this form, the field will expand as you type. Examples of SERF's can be found at: http://www.fhwa.dot.gov/cadiv/segb/examples/del.htm (then click on "FHWA Rule/FTA Policy Compliance Documents").

1. Identification of portions of the Regional ITS Architecture (RA) being implemented:
Instructions: Contact your MPO to get this information from your Regional ITS Architecture ("RA"). In the RA, the project might be identified specifically by name and agency, or by a more generic description (e.g. "Arterial Traffic Management"). If listed in the RA, document which inventory elements, market packages, subsystems, and/or information flows are being completed in this project. If there is ***no*** *information in your RA, arrange with your MPO to provide them this information when your project is designed; they will use it in the next update of the RA.*
Please enter your response here (the field will expand as you type):

2. Identification of participating agencies roles and responsibilities:
Instructions: Can you identify all stakeholders that must participate in the implementation phase of this project? What are their roles/responsibilities? Have they committed to the responsibilities? Some of this information might appear in your RA (e.g., "Operational Concepts" or other sections). If this will be defined in later phase of the project (e.g., Concept of Operations), the RA may be a good source to start definition.
Please enter your response here (the field will expand as you type):

3. Procedures and resources necessary for operations and management of the system:
Instructions: Can you identify all stakeholders that must participate in operations, management and maintenance of the system throughout its life cycle? What are the roles, responsibilities, and resources required from each stakeholder? Examples include: money, special equipment, staff time, special expertise, provision of data, and many more. You should consider hardware, software, and communications issues.
Please enter your response here (the field will expand as you type):

4. Requirements definitions:
Instructions: Are the system requirements (functional and performance) already well-defined ***in writing****?*
If yes, indicate where they can be found (e.g., Std. Specs). If they will be defined in later phase of the project, the applicable high-level functional requirements in the RA may be a good starting point for writing them. The focus is on ***"what"*** *functions must be performed -* ***not*** *on* ***"how"*** *the technology will be used to perform them.*
Please enter your response here (the field will expand as you type):

5. Identification of applicable ITS standards and testing procedures:
Instructions: Do you know yet if any ITS Communications Standards are applicable to this project? If they are applicable, will you use them? If your RA identifies specific Architecture Flows, you can ask your MPO to produce a "Standards Report" for those Flows; it will identify ITS Standards to consider.
Please enter your response here (the field will expand as you type):

6. Analysis of alternative system configurations and technology options to meet requirements:
Instructions: Have you considered alternative designs yet? This could include system configurations, different organizational roles; alternative hardware, software, or communications technology; If you can not yet make a choice of available alternatives, this analysis will occur in later phase of the project (High-Level Design).
Please enter your response here (the field will expand as you type):

7. Procurement options:
Instructions: Have you considered different procurement options for each of the project phases (design, implementation, operation, and management)? These options could include: off-the-shelf vs. custom, lease vs. buy, fixed-price vs. cost-reimbursable, etc. Procurement options must consider the level of staff technical expertise, existing agency procurement practices, who will be the project manager, and whether you need a systems engineer and/or system integrator.
Please enter your response here (the field will expand as you type):
Comments or Additional Information (if needed):

Note: If you were able to answer all seven questions above completely and with certainty, then please self-certify this project as "Low-Risk" in the E-76. Otherwise, it should be classified as "High-Risk." However, if you feel this is not justified, you may request a review of this SERF by Caltrans and FHWA.

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