NDDOT ITS PROJECT/ARCHITECTURE CHECKLIST
SYSTEMS ENGINEERING COMPLIANCE (Ver. 5.0)
North Dakota Department of Transportation, Maintenance Division
SFN60212 (Rev. 10-2012)

For All ITS Projects, a Systems Engineering Checklist must be submitted for review and approval **prior to approval of Federal funds (23 CFR 940.13).** If the ITS portion of the project is **≥ $5M**, then FHWA must approve the Systems Engineering Checklist; allow an additional two weeks for FHWA approval. Attach or make available any documents referenced in this form when submitting.

Section 1 Project Information

Project Champion			
Contact Address	City	State	ZIP Code
Contact Telephone Number	Contact Email Address		

Brief Description (Purpose of ITS project including list of ITS elements)
☐ See Attachment

New Project or Modification
☐ New Project ☐ Modification to existing project

Total Funds (ITS only)
☐ State $_____ ☐ Fed $_____ ☐ Other $_____

Project Number	PCN	Project Location

Nature of Work
☐ Scoping ☐ Design Software/Integration ☐ Construction
☐ Planning ☐ Maintenance (Equipment Replacement) ☐ Operations
☐ Evaluations ☐ Other - Specify _____

Relationship to Other ITS Projects and Phases
☐ See Attachment

Section 2 Needs Assessment (940 Requirement)

What is / are the current problem(s) with the current situation? ☐ See Attachment

What needs does this project address? ☐ See Attachment

How were these needs identified? (Must describe functional needs to meet portions of architecture identified in Section 3 on next page)**Reference any relevant documentation ☐ See Attachment

Section 3 Regional ITS Architecture (940 Requirement)

Portions of the Regional ITS Architecture being implemented

- ☐ Archived Data Management
- ☐ Traveler Information
- ☐ Commercial Vehicle Operations
- ☐ Traffic Management
- ☐ Public Transportation
- ☐ Emergency Management
- ☐ Maintenance and Construction Management

New ITS project or element described here:

Market Packages Attach all applicable market packages from Turbo or Regional Architecture; attach flow diagrams (940 Requirement)
NDDOT Market Packages Link

Market Package	Market Package Name	Flow Diagram Attached
		☐ No ☐ Yes
		☐ No ☐ Yes
		☐ No ☐ Yes
		☐ No ☐ Yes
		☐ No ☐ Yes

Inventory elements from the Architecture being implemented NDDOT Elements Link

Participating Agency Roles and Responsibilities (940 Requirement) Operational Concept Link

Regional Architectures impacted by the project

☐ ND Statewide ☐ Minnesota ☐ Bismarck/Mandan MPO ☐ Grand Forks/East Grand Forks MPO

☐ South Dakota ☐ Montana ☐ FM COG ☐ Other _____

Changes recommended to NDDOT / Regional Architectures due to the project ☐ No ☐ Yes

If Yes Provide ND Statewide-ITS Architecture Change-Request (SFN60213) ☐ Attached ☐ To Be Completed

National ITS Standards Incorporated (940 Requirement)

☐ Yes (Standards Link)

☐ No (If No MUST Explain)

*Test procedures must be included (see below)

Project Matrix Documentation (Should be completed by someone familiar with the SE. Some projects have multiple ITS elements only some of which will have the required documentation, reference all that apply to the project.

NOTE: Items in **red** are **required**, while those marked with an * are needed based on project complexity and risk	**References:** Include full name of the document; date the document was prepared; and the heading or section number within the document where the information is provided. If not previously documented, this documentation **must** be included with **this** System Engineering Checklist.	**Date Verified**
Concept of Operations	☐ See Attachment	
Requirements	☐ See Attachment	
Alternatives Analysis	☐ See Attachment	
Test Plan	☐ See Attachment	
Detailed Design	☐ See Attachment	
Integration Plan*	☐ See Attachment	
System Acceptance Plan*	☐ See Attachment	

Section 4 Procurement (940 Requirement)

Procurement Methods (Should correspond with project complexity)

☐ **Low Bid with DOT Design** - typical for construction projects DOT design (low bid contractor)

☐ **Low Bid with Consultant Design**- typical for construction projects consultant design (low bid contractor)

☐ **System Manager -** manager responsible for delivering an operational system (quality based selection; RFP)

☐ **Commodity Supplier** - off-the-shelf ITS products (low bid selection of pre-qualified packages)

☐ **Consultant** - supplement in-house capabilities or consultant/manager selection (qualifications based; RFP)

☐ **Outsourcing** - for a capability of function rather than a specific system (best value or low bid; RFP)

☐ **Other**

Comments:

Spare Parts

Additional equipment (spare parts) requested? ☐ Yes ☐ No

If yes, please complete Attachment A: ☐ Attached ☐ To Be Completed

Section 5 Operations and Maintenance (940 Requirement)

Procedures and Resources Needed for Operation

Estimated Annual Operations Maintenance Costs

Stakeholder(s) responsible for maintenance and funding source

Section 6 Agreements

List any Agreements needed or utilized for this project

Section 7 Acceptance

Preliminary

Approved by NDDOT ITS Engineer

Date

FHWA Approval (ITS ≥ $5M)

FHWA Division Administrator

Date

FHWA Division ITS Engineer

☐ Not Approved:

Comments:

Attachment A - ITS Spare Parts Eligibility Assessment

For this project, which products are intended to be purchased beyond the quantities required for initial installation?

a.

b.

c.

Do you certify that the agency responsible for hardware maintenance on this facility has a system for inventory tracking of these products, which includes at least purchase dates, unique part identification, and quantity?

☐ Yes ☐ No

How, or by whom, may this inventory be located?

For the types of spare parts requested, what is the quantity of spare parts currently available by the agency responsible for maintenance?

a.	Newest part purchase date:
b.	Newest part purchase date:
c.	Newest part purchase date:

Do you certify that::

☐ Yes ☐ No The type(s) of spare parts requested are essential for the safe and successful operation of the system (system-critical)?

☐ Yes ☐ No The agency responsible for hardware maintenance on this facility has a system for inventory tracking of these products, which includes at least purchase dates, unique part identification, and quantity?

☐ Yes ☐ No Replacement of these parts is above and beyond what is expected of typical system “routine maintenance” (i.e., paint jobs, de-icing)?

☐ Yes ☐ No The order quantity of the spare parts is consistent with both the expected failure rate for those parts and the expected service life for the associated project function?

☐ Yes ☐ No The estimated purchase costs of the spare parts alone is less than 10% of the estimated total project cost?

☐ Yes ☐ No The time to purchase replacement equipment for these spare parts in the event of a failure would cause an unacceptable disruption to the safety or efficiency of the system?

If the answer to any of the above questions is “no,” the purchase of these spare parts may still be eligible for Federal-aid reimbursement a public interest finding (PIF) approved by FHWA may serve in place of this checklist. Please coordinate with the NDDOT Maintenance Division ITS Engineer for submission of a PIF application in this regard.

☐ Yes ☐ No Is a PIF required for this purchase?

☐ Yes ☐ No If a PIF is required, has it been approved by FHWA?

For more information on Federal-aid eligibility of spare parts, please see the following Memoranda from FHWA:

“INFORMATION: Eligibility of Replacement Parts for Safety-related Hardware,” March 18, 2008

“INFORMATION: Guidance on Federal-aid Eligibility of Operating Costs for Transportation Management Systems,” January 03, 2000