1-30-1 Traffic Role in Improvement Program — November 2022

INTRODUCTION

The following tables summarize the standard role for Traffic Operations in developing and delivering improvement projects in order to promote increased consistency of how traffic-related items are incorporated into projects, and to increase the consistency of work assignments played by Traffic Operations staff in the regional offices.

DEFINITIONS

'Acceptance Review' is defined as a field review of the completed project/item with the PDS Project Engineer for purposes of developing a punch-list of activities to be accomplished within a specific Traffic Engineering function before the contractor moves off the project and/or payment to the contractor is made for the items in each work category. As a general rule, this is accepted as the minimal role regional Traffic Operations would provide for all Traffic Engineering functions on projects.

'Needs identification' includes the project definition and project delivery stages.

ROLES & RESPONSIBILITIES

Signing

Refer to Table 1 for Traffic Operations and PDS roles in the signing function. Traffic Operations is directly responsible for producing signing plans for all improvement projects. Traffic Operations *may* accomplish this in a variety of ways, including in-house design by Operations staff; consultant design under a traffic master contract; or consultant staff under a (PDS managed) design contract. If the latter method is utilized, it is critical that the Traffic Operations staff person in responsible charge of the signing plan remain in the communication chain with PDS staff and the consultant so effective work reviews (preliminary plan, DSR plan, Pre-PS&E) can occur. During construction inspection by PDS, Traffic Operation's role is to provide technical guidance to PDS inspectors and be involved in acceptance review with the project engineer. The acceptance review *should* be completed shortly after signs are installed so the contractor can fix any signing that needs to be addressed before the contractors finish construction operations.

Table 1. Signing Roles

NEEDS IDENTIFICATION		DESIGN		CONSTRUCTION			
Identify need for replacement or new installation	Present need in project scoping or project initiation	Directly manage consultant in design & drafting (Consultant Mgmt for Delivery)	Complete design (In-House Delivery)	Provide technical guidance to PDS staff or PDS consultant in construction inspection	Complete construction inspection	Acceptance Review	Field Review for Compliance WZTC
Operations	Operations	Operations	Operations	Operations	PDS	Operations	PDS

Pavement Marking

Refer to Table 2 for Traffic Operations and PDS roles in the pavement marking function. Pavement marking plan production remains the responsibility of the PDS section. Traffic Operation's role is to provide technical guidance and design review when requested by PDS during design. Traffic Operation's role is to provide technical guidance to PDS inspectors and be involved in acceptance review with the project engineer during construction inspection conducted by PDS. The acceptance review *should* be completed shortly after the pavement marking is placed so the contractor can fix any marking that needs to be addressed before the contractors finish construction operations.

Table 2. Pavement Marking Roles

NEEDS IDENTIFICATION		DESIGN			CONSTRUCTION			
Identify need for replacement or new installation	Present need in project scoping or project initiation	Provide technical guidance to PDS staff or PDS consultant in design	Directly manage consultant in design & drafting (Consultant Mgmt for Delivery)	Complete design (In-House Delivery)	Provide technical guidance to PDS staff or PDS consultant in construction inspection	Complete construction inspection	Acceptance Review	Field Review for Compliance WZTC
Operations	Operations	Operations	PDS	PDS	Operations	PDS	Operations	PDS

Intersection Control

Traffic Operation's role is to identify the need for replacement, upgrade, or new installation of intersection control and present the need within the Project Initiation or Project Definition phases. Regional traffic operations complete the Intersection Control Evaluation (ICE) process to evaluate traffic control change alternatives for

reasonableness. FDM 11-25-3 provides additional details on the ICE process. Refer to Table 3 for Traffic Operations and PDS roles in the various intersection control functions.

Intersection Geometrics

Traffic Operation's role is to provide technical guidance on geometric and operational issues as necessary.

Traffic Signal/Electrical Plans

Traffic Operations staff is directly responsible for producing signal/electrical plans (separate from geometrics). Traffic Operations *may* do this in a variety of ways including via in-house staff; via a traffic master contract; or via the design contract used for the project. If the latter method is used, it is critical that the Traffic Operations staff person in responsible charge of the signal/electrical signing plan remain in the communication chain with PDS staff and the consultant so effective work reviews (preliminary plan, DSR plan, Pre-PS&E) can occur.

Traffic Operations electrical staff are to serve as first-line inspectors on signal installations and are involved in acceptance review with the project engineer during construction inspection. The PDS project engineer is the lead on contract administrative duties. Operations staff and the PDS project staff agree prior to construction on proper level of inspection for electrical installations.

Operations Analysis

Regional Traffic Operations staff *should* provide technical guidance to PDS staff or PDS consultant staff by completing needs analyses for alternative intersection control during the Project Initiation phase, by analyzing intersection crash data, and comparing and evaluating the alternatives relative to intersection control guidelines and warrants. TEOpS 16-15 and TEOpS 16-20 provide details on how to conduct traffic operations analyses following the Highway Capacity Manual (HCM) methodologies and microscopic simulation traffic analysis methodologies, respectively.

Table 3. Intersection Control Roles

	DESIGN			CONSTRUCTION		
	Provide technical guidance to PDS staff or PDS consultant in design	Directly manage consultant in design & drafting (Consultant Mgmt for Delivery)	Complete design (In-House Delivery)	Complete construction inspection	Acceptance Review	Field Review for Compliance WZTC
Intersection Geometrics	Operations	PDS	PDS	PDS	PDS	PDS
Traffic Signal/ Electrical Plans		Operations	Operations	Operations	Operations	PDS
Operations Analysis	Operations	PDS	PDS			

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) includes items such as closed-circuit television (CCTV), cameras, ramp meters, detector stations, count stations, permanent message boards, etc.

Refer to Table 4 for Operations and PDS roles in the ITS functional area. Traffic Operations staff is directly responsible for producing ITS component plans. Traffic Operations *may* do this in a variety of ways including via in-house staff; via a traffic master contract; or via the design contract used for the project. If the latter method is used, it is critical that the Traffic Operations staff person in responsible charge of the ITS component plan remain in the communication chain with PDS staff and the consultant so effective work reviews (preliminary plan, DSR plan, Pre-PS&E) can occur.

Traffic Operations/electrical staff are first-line inspectors on ITS construction installations, plus they are involved in acceptance review with project engineer.

Table 4. ITS Roles

NEEDS IDENTIFICATION		DESIGN		CONSTRUCTION		
Identify need for replacement or new installation	Present need in project scoping or project initiation	Directly manage consultant in design & drafting (Consultant Mgmt for Delivery)	Complete design (In-House Delivery)	Complete construction inspection	Acceptance Review	Field Review for Compliance WZTC
Operations/PDS	Operations/PDS	Operations	Operations	Operations	Operations	PDS

State-owned Highway Lighting

Refer to Table 5 for Operations and PDS roles in the state-owned highway lighting function. Traffic Operations staff is directly responsible for producing state-owned highway lighting plans. Traffic Operations *may* do this in a variety of ways including via in-house staff; via a traffic master contract; or via the design contract used for the project. If the latter method is used, it is critical that the Traffic Operations staff person in responsible charge of

the lighting plan remain in the communication chain with PDS staff and the consultant so effective work reviews (preliminary plan, DSR plan, Pre-PS&E) can occur.

Traffic Operations/Electrical staff are first-line inspectors on state owned lighting installations and involved in acceptance review with the project engineer.

Table 5. Highway Lighting Roles

NEEDS IDENTIFICATION		DESIGN		CONSTRUCTION		
Identify need for replacement or new installation	Present need in project scoping or project initiation	Directly manage consultant in design & drafting (Consultant Mgmt for Delivery)	Complete design (In-House Delivery)	Complete construction inspection	Acceptance Review	Field Review for Compliance WZTC
Operations	Operations	Operations	Operations	Operations	Operations	PDS

Work Zone Transportation Management Plan

Refer to Table 6 for Operations and PDS roles in the work zone transportation management plan (TMP) task. Traffic Operations role during the work zone TMP process is to provide technical guidance to PDS on:

- assessing work zone impacts
- determining mitigation strategies
- developing TMP documents, and
- reviewing work zone traffic operations during construction

Additional details on roles and responsibilities of Traffic Operations and PDS in the TMP process are discussed in TEOpS 6-1-1.

Table 6. Work Zone TMP Roles

NEEDS IDENTIFICATION		DESIGN			CONSTRUCTION			
Identify work zone management needs & issues	Present need in project scoping or project initiation	Provide technical guidance to PDS staff or PDS consultant in design	Directly manage consultant in design & drafting (Consultant Mgmt for Delivery)	Complete design (In-House Delivery)	Provide technical guidance to PDS staff or PDS consultant in construction inspection	Complete construction inspection	Acceptance Review	Field Review for Compliance WZTC
Operations/PDS	Operations	Operations	PDS	PDS	Operations	PDS	PDS	PDS

Safety and Operational Review

The Safety Certification Process (SCP) is defined in FDM 11-38 and is required for state highway projects meeting the improvement concept codes in FDM 11-1-10 Attachment 10.1. Traffic Operations or preliminary design engineers are responsible for completing and documenting this process. The SCP uses network screening tools to identify safety sites of promise which are locations that experience more crashes than similar sites; therefore, having a higher potential for safety improvement. These locations are investigated for reasonable alternatives which help define the purpose and need of a project. Regions are responsible for completion of the SCP, while the Bureau of Traffic Operations (BTO) approves documents in which an economic appraisal is completed.

The Highway Safety Improvement Program (HSIP) process is a separate, independent process from the SCP. This program aims to reduce serious and fatal crashes on all streets and highways. Information on the HSIP process can be found on the WisDOT webpage. A HSIP project *may* occur within an existing state highway improvement project, or as a standalone safety project.

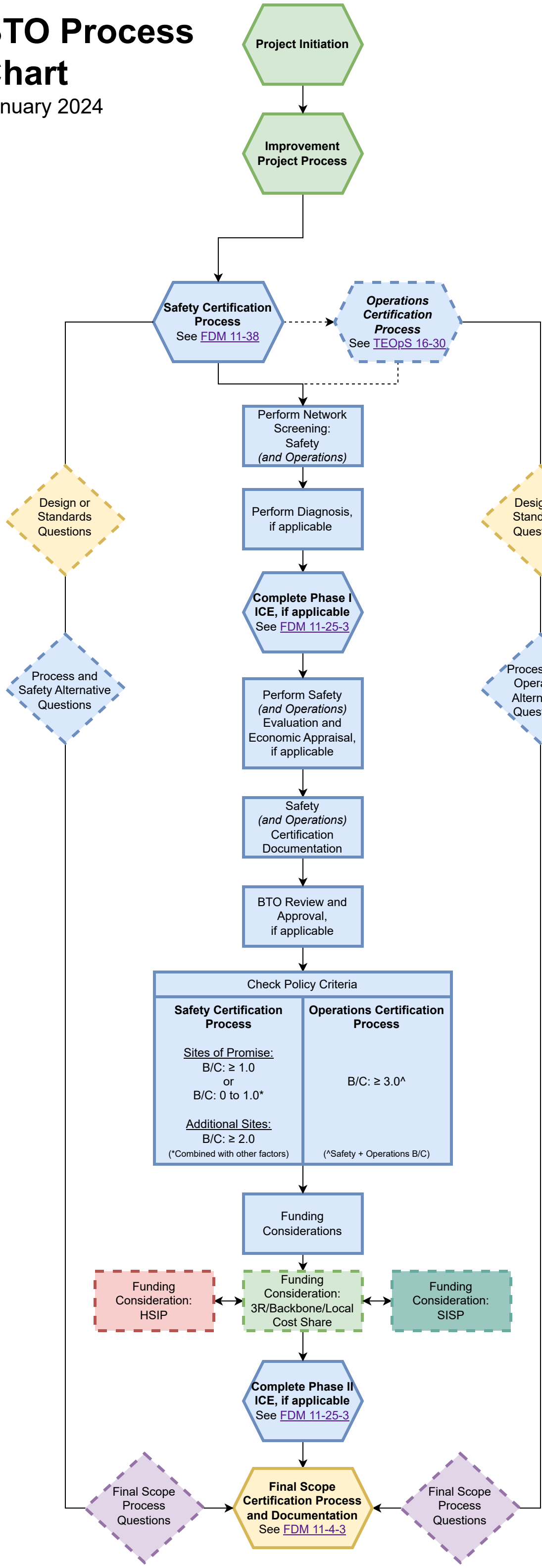
The Operations Certification Process (OCP) for intersections is currently defined in FDM 11-52-15 and TEOpS 16-30. The OCP is an optional process that Traffic Operations or preliminary design engineers *may* consider for operational improvements. The OCP identifies and investigates operational sites of promise to identify reasonable operational improvements which help meet the purpose and need of a project. Regions are responsible for completion of the OCP, while the BTO approves the documentation.

The Intersection Control Evaluation (ICE) process is defined in FDM 11-25-3 and is required for all intersections on the State Trunk Network (STN), including those along connecting highways, regardless of the funding mechanism, where consideration is being given to an alternative form of traffic control or type of intersection/ interchange. Regions are responsible for completion of the ICE, while BTO approves the documentation.

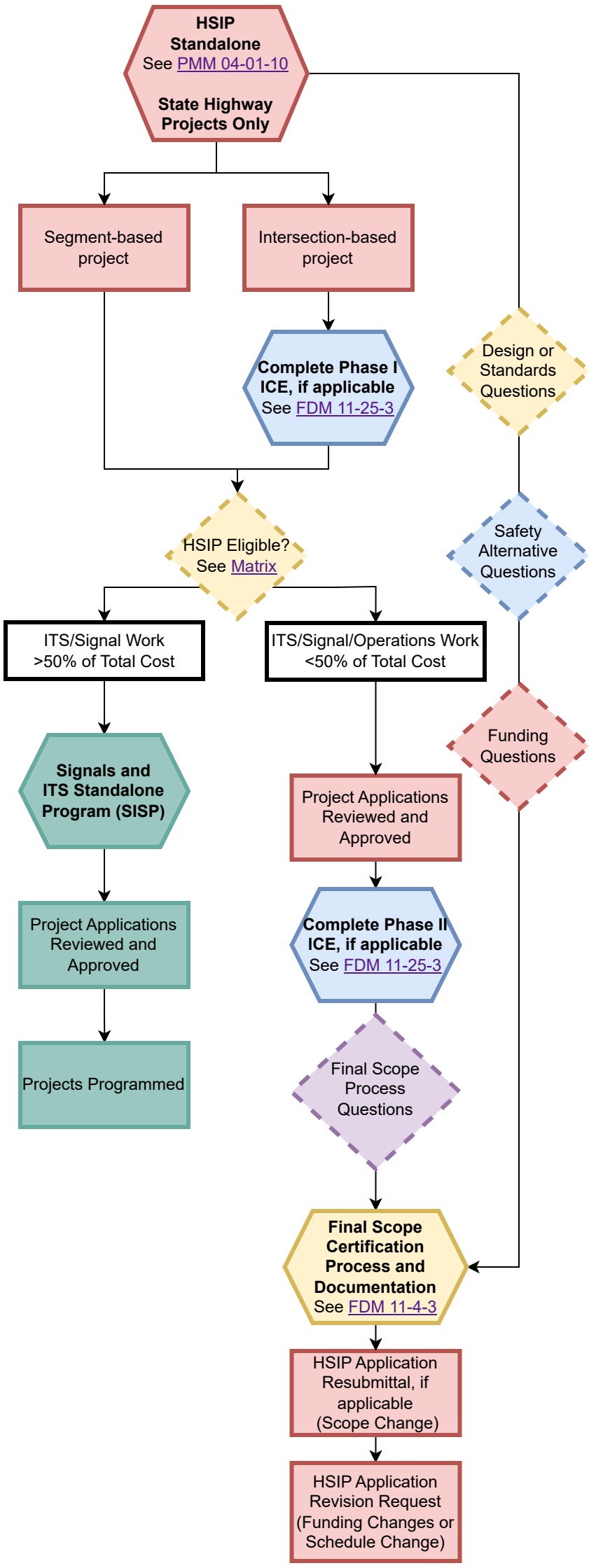
Figure 1 helps illustrate how these processes interact and how they could be completed within the life of an improvement project. For the improvement project process, beginning with Project Initiation phase, this flowchart illustrates an example in which all processes were completed. This example illustrates a linear outline, however, many of these steps can be completed concurrently. Not all projects will complete all the steps. For a full-page flowchart with accessible links, click the image.

BTO Process Chart

January 2024



Note: This process chart provides an example project completing all possible steps of the Safety Certification and Operations Certification Process. Not all projects will complete all steps.



Legend and Contact Information

Process Contacts		Flowchart Legend
Bureau of Project Development: Design Standards and Oversight Section	**Bureau of Traffic Operations:** Traffic Analysis and Safety Unit	Required Process or Step
Bureau of Project Development: Asset Management Unit	**Bureau of Traffic Operations:** Traffic Systems Unit	Optional Process or Step *Italics = Optional Step*
DTIM Office of Asset and Performance Management	**DTIM Program Development and Analysis:** Highway Safety Improvement Program Manager	Questions

BTO Information:

Review Timelines:

Intersection Control Evaluation (ICE) Process - 15 business days
Safety (and Operations) Certification Process - 15 business days

Process Contacts:

Operations Certification - DOTTrafficAnalysisModeling@dot.wi.gov
Safety Certification - DOTBTOSafetyEngineering@dot.wi.gov
Highway Safety Improvement Program (HSIP) - HSIP webpage
Signals and ITS Standalone Program (SISP) - SISP webpage