



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Subject: **INFORMATION: Procurement and
Authorization of Federal-Aid
Operational Improvements (Non-
Construction Projects)**

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In Reply Refer To:
HOP-1

To: Directors of Field Services
Chief Technical Services Officer
Division Administrators

The purpose of this memorandum is to clarify Federal-aid procedures for procurement of operational improvements using Federal-aid Highway Program funds. This memorandum expands upon the reference to procurement of operational improvements included in the general memorandum on Procurement of Federal-aid Construction Projects, provided at: <https://www.fhwa.dot.gov/construction/080625.cfm>. This memorandum does not represent a change in policy. Based on recent questions from some Division Offices and State departments of transportation we felt the need to restate and highlight that many Intelligent Transportation Systems (ITS) and operations projects are not considered construction under 23 U.S.C. 112.¹

Federal-aid statutes, regulations, and policies generally address traditional highway construction projects. The procurement of Federal-aid construction projects is outlined in 23 U.S.C. 112 and construction contracts must follow the regulatory requirements of 23 CFR part 635 (or in the case of design-build, 23 CFR part 636). Procurement of non-construction operational improvements follow State-approved procedures under the Uniform Requirements for Federal Awards. If an eligible ITS project activity is determined to be non-construction, then pursuant to 2 CFR 200.317, and 2 CFR 1201.317 for subrecipients, State procurement procedures are followed in procuring eligible ITS and operational activities. Some ITS and operations projects may be determined to be construction. If this is the case, those projects must be procured pursuant to the requirements in 23 U.S.C. 112 and 23 CFR parts 635 or 636.

¹ 23 U.S.C. 112 applies only where "construction" is to be performed. Other Federal requirements, such as the National Environmental Policy Act and Disadvantaged Business Enterprise Program, apply regardless of whether construction is involved.

This guidance is based upon a review of the term “construction” as defined in 23 U.S.C. 101(a)(4), which includes projects that “directly facilitate and control traffic flow.”²

However, Congress also separately defined “Operational improvement” in 23 U.S.C. 101(a)(18). The term “operational improvement”:

- (A) means (i) capital improvement for installation of traffic surveillance and control equipment, computerized signal systems, motorist information systems, integrated traffic control systems, incident management programs, and transportation demand management facilities, strategies, and programs, and (ii) such other capital improvements to public roads as the Secretary may designate by regulation; and
- (B) does not include resurfacing, restoring, or rehabilitating improvements, construction of additional lanes, interchanges, and grade separations, and construction of a new facility on a new location.

Each operational improvement project is unique and may involve work ranging from little or no field installation activity to significant field installation activity. The section below provides examples of the types of ITS and operations projects that may be considered either construction or an operational improvement. The examples are illustrative only and do not encompass all the varieties of operations procurements that may be considered. Early involvement from the Division Office is critical to identifying and documenting the appropriate project type designation (construction or operational improvement) and corresponding project funding authorization decisions.

ITS / Operations Projects Typically Considered Construction

- Installation of overhead dynamic message signs, CCTV cameras, or radio towers on new poles, gantries, or structural foundations
- Installation of new or expanded underground infrastructure such as trenching and cable installation
- Operations center building construction
- Areawide traffic signal or ramp meter installation
- Non-construction activities when procured through an ITS/Construction contract

² The definition of “construction” also includes the phrase “any project eligible for assistance under [title 23, United States Code].” However, in light of the context in which this phrase is used, as well as the separate definition of “operational improvement”, we interpret the phrase to exclude those activities specified as “operational improvements” in the definition and in this memorandum. “Construction” includes those activities that involve the alteration of the ROW that are in the nature of the activities that are specifically excluded under 23 U.S.C. 101(a)(18). Note that some minor and incidental physical alterations may be involved with the operational improvement. Such alternations do not necessarily convert the operational improvement project into a construction project. Rather, the nature of the activity being undertaken must be of the type of activities that are excluded from the definition of operational improvement.

ITS / Operations Projects Typically Considered Operational Improvements (Non-Construction)

Planning and Research

- Regional ITS Architecture development and maintenance
- Regional Operational Concepts
- Traffic incident management planning
- Standards testing and specification development
- Public outreach and communication

Project Development

- Project-level Concept of Operation, project architecture, systems engineering, system requirements definition
- Development of Requests for Proposals
- Evaluation of technology, networking, system architecture alternatives

Software Development / System Integration

- Traffic Management Center (TMC) central software design, development, installation
- Modifying central system software to communicate with new field equipment
- Acceptance testing and configuration management
- TMC operations and TMC software maintenance and support

Operations / Maintenance

- Operating costs for traffic monitoring, management, control systems (e.g., rent, communications, labor, utilities)
- Freeway service patrol operations
- Preventative maintenance of operational equipment
- Signal timing

Capital Improvements for Equipment Installation

- Installation of smaller equipment on existing poles and foundations (e.g. CCTV, Vehicle-to-Infrastructure (V2I) radios, controller cabinets, traffic signal heads, etc.)
- Motorists information technology (e.g. smaller shoulder-mounted dynamic message signs, highway advisory radios, variable speed limit signs, etc.)
- Installation/pulling of cables through existing conduit
- Saw-cutting/installation of in-pavement inductance loop wire at limited locations

As seen above, some examples appear in both construction and operational improvement categories representing discretionary judgment in ITS procurements to ensure system synchronization and reduce overall deployment risks. Some projects may be scoped as “systems deployments” that involve a combination of field (civil) infrastructure and ITS technology, communications, and systems integration work. Road weather information systems, tolling systems, and connected vehicle field infrastructure (e.g. roadside equipment) may be examples of these types of hybrid deployments. In these cases, the Division Office may take into consideration the relative proportion of the field vs. non-field costs (including project scope and level of effort) to determine the overall classification. Alternatively, the State department of transportation may consider breaking the project into distinct procurements with the construction elements procured via traditional competitively bid contracts, design-build or other approved contracting methods, and the non-construction elements procured per 2 CFR parts 200 and 1201.

The procurement of engineering and design related services using Federal-aid Highway Program funds that lead directly to a construction project must follow a qualifications-based selection procedure in compliance with the Brooks Act and 23 CFR part 172. When procuring engineering or design related services using Federal-aid Highway Program funds that do not directly lead to a construction project, State departments of transportation follow the same policies and procedures the State uses for procurement with its non-Federal funds.

Federal-aid Authorizations for Non-Construction ITS and Operations Projects

Since non-construction operational improvements often do not involve engineering services, right-of-way, or (by definition) construction phases, Division Offices often categorize these projects as “Other” or “State Planning and Research” in the Fiscal Management Information System.

In the absence of a package containing plans, specifications, and an estimate (typical for a traditional construction project), FHWA Division Offices should have enough information about the project to approve Federal funding obligation. Although the specific information expected could vary based on the

Division’s Risk Based Stewardship and Oversight processes, some examples of project information that might be expected to be provided for non-construction funding authorization include: project limits and scope, system users and stakeholders, management approach, relationship to the regional ITS architecture and related projects, systems engineering analyses to satisfy 23 CFR 940.11 (including necessary procedures and resources for systems operations and management), project costs, funding sources, project completion date, and project risks and risk mitigation measures.

With regard to Federal-aid funding *eligibility* for Transportation Systems Management and Operations, the latest information and guidance is provided at: https://ops.fhwa.dot.gov/travelinfo/resources/ops_guide.htm. Although not explicitly

detailed in the funding eligibility information, it is worth noting that vehicle-to-infrastructure (V2I) deployments are eligible for the major apportioned formula funds including National Highway Performance Program, Surface Transportation Block Grant Program, Highway Safety Improvement Program, and Congestion Mitigation and Air Quality Improvement Program funds.

If you have any comments or questions on these topics, please contact Jim Hunt, jim.hunt@dot.gov 202-680-2679.