Anchorage
Regional ITS Architecture

EXECUTIVE SUMMARY

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MUNICIPALITY OF ANCHORAGE ITS ARCHITECTURE EXECUTIVE SUMMARY

The Municipality of Anchorage (MOA) initiated the development of a regional Intelligent Transportation System (ITS) architecture to manage implementation of a range of technologies that will improve transportation within the municipality. ITS is the use of advanced sensor, computer, electronics, and communications ***technologies*** and management ***strategies*** in an ***integrated*** manner to increase the safety and efficiency of the surface transportation system. An ITS architecture defines the institutional and technical links necessary to plan, design, implement, operate, and maintain ITS.

The Anchorage Intelligent Transportation Systems (ITS) Architecture project was conducted as a series of six steps, each with a separate document. The six documents are:

- User Needs Report
- User Services Report
- ITS Concept of Operations
- Regional ITS Architecture
- ITS Architecture Final Report
- Implementation Plan

The final report for this project incorporates these six documents as chapters. A Summary Report provides sufficient detail to be the primary document for most readers. This Executive Summary provides a high level summary of the results of the project.

NATIONAL ITS ARCHITECTURE CONFORMITY

On January 8, 2001, the USDOT released the final FHWA rule and FTA Policy requiring regions that currently have ITS in place, such as the MOA, to have a regional ITS architecture in place within four years of the date the rule policy became effective, or by April 8th, 2005. The regional architecture developed as part of this project meets these Federal requirements.

MOA'S USER NEEDS

The first step to a successful ITS deployment is to identify user needs. User needs specify issues plaguing travelers or transportation agencies that can be satisfied through ITS. User needs defined in this project are from the perspective of those who operate and maintain transportation systems in the Anchorage metropolitan area, as well as those who use the transportation system in the region. The project team wrote the *User Needs Report* using the terminology stakeholders used during the outreach process. The stakeholders identified User Needs in the following areas:

- Internal Operations and Management
- Emergency Management
- Inter-agency Communications
- Inter-agency Data Sharing
- Traffic Operations
- Traveler Information
- Transit Management
- Commercial Vehicle Operations

USER SERVICES

The National ITS Architecture identifies User Services, or ITS functions, that meet various user needs. "Mapping" or connecting **user needs** to the applicable **user services** documented in the National ITS Architecture explains how each need will be ultimately satisfied. The purpose of mapping user needs to ITS user services is to clearly illustrate that ITS solutions can satisfy stakeholder needs. The applicable user service bundles and user services that meet Anchorage needs are described in the Summary Report and in the User Services Chapter of the Final Report.

LONG-RANGE VISION

Mapping the current and future User Needs to the User Services, the ITS Long-Range Vision for the Municipality of Anchorage (MOA) is to:

- Ensure public safety
- Support public security
- Support the community vision
- Deliver services effectively

Figure ES-1 represents the relationships between the goals. Developing a strong community is at the center of the goals. Meeting the community's safety and security needs helps to protect the core community values. Because all services must be provided effectively, that goal forms the outer ring.

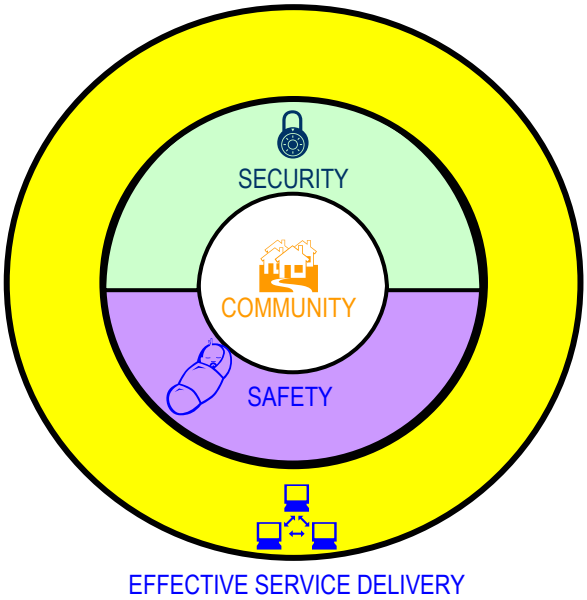

Figure ES-1. Anchorage ITS Goals

CONCEPT OF OPERATIONS

The Concept of Operations defines operational and institutional relationships, as well as communication elements of the municipality's regional ITS architecture. To realize the ITS vision operational strategies will need to be implemented by both the municipality and their stakeholders. The ITS strategy for Anchorage consists of four key program areas illustrated in Figure ES-2.

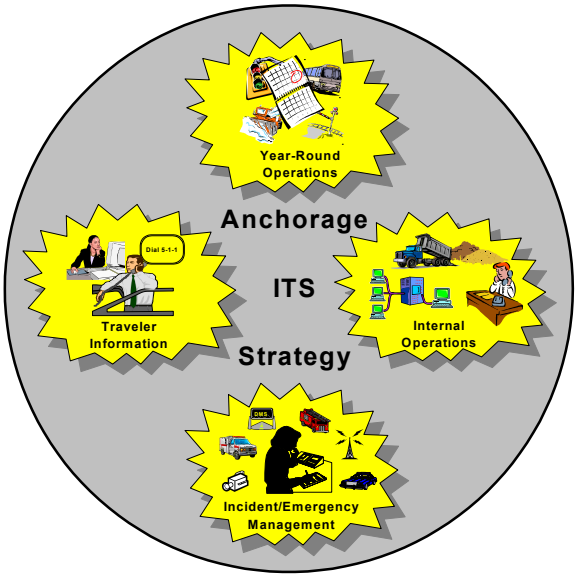

Figure ES-2. Anchorage ITS Strategy

REGIONAL ITS ARCHITECTURE

The Regional ITS Architecture Chapter describes in detail the framework for implementing ITS in the Anchorage area. The Regional Architecture emphasizes the interfaces that are needed among systems and the combination of products and services needed to meet the stated needs for: year round operations, incident and emergency management systems, traveler information systems or internal operations.

ANCHORAGE ITS IMPLEMENTATION PLAN

ITS projects must compete for funding with other more traditional transportation, construction, and improvement projects. With this in mind, phased ITS implementation will prove effective and help the Plan's recommended ITS technologies meet both Anchorage's and its travelers' diverse and unique needs. The purpose of the Implementation Plan is to define a set of projects that are proposed for implementation in the MOA over the next ten years and the criteria that has been developed to prioritize the projects. The Summary Report and the Implementation Plan describe the projects considered and

provide a recommendation for the timing for implementing these projects.

*NOTE: Project sequencing is for conceptual integration only, and is not a ranking for program funding. Projects shown with an (*) have been programmed for funding at various levels in the AMATS Transportation Improvement Program (TIP.) Projects without an (*) have not yet been programmed for funding.

Near Term (0-3 Years)

- MOA Traffic Operations Center
- Needs Study for Transit Signal Priority
- Traffic Signal System Upgrade*
- 511 for Traveler Information*
- Condition Acquisition and Reporting System (CARS) *
- Automatic Vehicle Location (AVL) Systems *
- Common Geographic Information System (GIS) *
- Shared Traveler Information and Traffic Database*
- Asset Management System*
- Hazardous Materials Tracking and Reporting*
- Mobile Data Terminals*

Medium Term (3-5 Years)

- Highway-Rail Intersection (HRI) Warning and Preemption Systems
- Smart Fare Box Systems *
- Material Usage Tracking System
- Closed Circuit Television and Digital Cameras

Long Term (5-10 Years)

- Transit Vehicle Management *

The Implementation Plan recommends ways to apply the existing AMATS project selection criteria for scoring ITS projects. The plan also recommends that the AMATS consider adding a scoring criterion specifically for contribution to security. Finally, the plan recommends that AMATS form an ITS technical advisory team to help scorers make decisions on ITS projects.

The Implementation Plan recommends methods to combine these various projects into a consistent program. These methods comprise the Integration Strategy. The Plan also discusses funding needs and opportunities and recommends a procurement strategy that suggests using indefinite quantities and task order contracts.

SUMMARY

ITS shows significant potential to improve safety and efficiency of travel in the MOA. In part, the need for ITS in the MOA revolves around improving internal operations and management, emergency management, traffic operations, and year round operation. This effort identified a vision and concept of operations for addressing the needs identified by users. It outlined a set of projects identified by various stakeholders in the MOA to enhance transportation operations. Further, it focused on identifying potential strategies and policies that will foster integration of ITS services in the MOA.