

# NEXT GENERATION ITS Strategy Overview

In developing the Next Generation ITS Strategy, it was important to take a “birds eye” view of the approach, and consider the many aspects involved in creating a successful plan to serve the City into the future.

This strategy highlights the benefits of implementing the recommendations, and also highlights some of the potential impacts and effects if the recommendations are not completed.

Prepared for:



*Seattle Department of Transportation*

Prepared by **Transpo Group**

11730 118th Avenue NE, Suite 600  
Kirkland, WA 98034-7120  
425-821-3665  
[www.transpogroup.com](http://www.transpogroup.com)

# Next Generation ITS Strategy Overview

## General Approach

Figure 1 depicts the general approach to the development of the strategy and the six aspects considered. These are:

1. Drivers/forces behind the development of the strategy
2. The ITS projects identified as a result of these drivers/forces, as well as the benefit offered by implementing each project
3. A schedule for implementation
4. Prerequisites that must be complete prior to implementation
5. The level of effort required before, during, and after implementation
6. The funding requirements for both capital expenditures and ongoing operational costs

Figure 1. ITS Strategy Approach



## Driving Forces

To successfully identify projects, it is important to understand the driving forces behind them. For the Next Generation ITS initiative, there are many needs that have driven project requirements. The most prominent needs are summarized below.

### Construction Activities

The impact associated with the level and intensity of construction activities in Seattle will negatively affect the performance of the transportation network. Construction projects will shift the demand placed on the current network, and result in changing traffic patterns. These are a result of road closures and detours, changes in the routes drivers take to avoid delays, and a shift in the number of drivers on the road, as some choose alternative modes of transportation.

### Transit and Mobility

Users of the transportation network are trying to quickly access a destination using their preferred mode of transport. The City has an obligation to provide seamless travel for a variety of modes, including private vehicles, transit, carpools, bicycles, and pedestrians.

### Freight

The Port of Seattle is a major freight hub for the entire State of Washington, and its access is located in the heart of Seattle. It is important that freight providers maintain excellent mobility to and from the Port throughout the changes that are occurring around the City of Seattle.



Port of Seattle

## Economy / Business

The City is also obligated to ensure that local businesses are not adversely impacted by ongoing and future changes to the transportation network. This means that citizens, delivery companies, clients, and workers must be able to access businesses in a viable and economical manner.

### Public Perception

It is common for the public to have a negative perception of the transportation network and its performance. This perception is generally amplified if precautionary measures and mitigation strategies are not implemented in time, and the level of service is affected.

## ITS Projects

ITS projects were developed not only to satisfy the operational and technical needs of the City of Seattle, but also to mitigate the effects of major construction activities. The timely execution of these projects will benefit the City from technical, operational, and public opinion perspectives.

Unfortunately, many cities experience constraints when executing major improvement projects. These constraints include budget and/or procurement policies, as well as political forces. If these factors impact the implementation of ITS projects that will mitigate construction activities, the City risks facing an increased demand and network congestion that cannot be remedied with impacting the progress of the projects, in addition to facing increased public criticism.

## Schedule

The projects identified in the plan need to be implemented in a timely manner. Given the City's current circumstances, and the fact that construction has already begun on some projects, it is impractical to assume that all ITS projects can be implemented prior to construction. To account for these conditions, the schedule for project deployment is broken into four main categories, allowing more time for procurement and budget allocation.

### Quick Wins

As construction activities have already commenced, this plan identifies a number of "quick wins" that will allow the City to quickly gather, analyze, and disseminate information to the travelling public. Quick wins include projects that can be carried out within the next six months.

### Short Term Projects

Short term projects can be implemented within 6 to 12 months from the issue of this report.

## Medium Term Projects

Medium term projects can be implemented within 12 to 24 months from the issue of this report.

## Long Term Projects

Long term projects have been identified for implementation post 24 months. These projects are not meant to serve as mitigation efforts for planned construction, but their deployment and implementation will greatly benefit the City in the coming decade.

## Prerequisites

As part of any initiative, a number of prerequisites must be in place to successfully achieve the intended outcome. The Access Seattle initiative and the deployment of Next Generation ITS strategies have three main prerequisites, summarized below.

### Functional Setup

At the head of the City's network operations is the Traffic Management Center (TMC), which serves as the command and control for network management activities. The City's current TMC has an auto-centric focus, and only interacts with other agencies on an "as needed" basis. To best serve the City's constituents, the function of the TMC must change to integrate multiple travel modes and increase interaction with internal transportation divisions (such as Major Projects and Maintenance) as well as departments such as police, fire, and public utilities.

### Systems Capability

The TMC currently houses systems that are obsolete or must be upgraded to allow additional field devices and additional ITS equipment to integrate.

### Resource Availability

Operations staff with specific knowledge and skills must be available prior to deployment of any major new system. This could mean bringing in new staff or additional training for current staff members.

## Level of Effort

When implementing a strategy, it is common to underestimate the level of effort required from all parties involved. The overall level of effort includes the effort directly associated with the project team, budgetary requirements for project deployment, and the level of effort required from stakeholders, third parties, and City management. The following section offers a breakdown of the parties involved in realizing the Next Generation ITS strategy.

### Internal

- ▶ **IT Team:** Since an ITS system is built upon technology, the IT group is essential to its success. ITS plans must be well-coordinated with existing and future IT plans.
- ▶ **Maintenance Team:** Once new systems are integrated with current systems, they must be maintained at the highest level possible. This includes preventative maintenance and reactive maintenance to protect the long term capital investment made by the City, and ensure the smooth operation of systems.
- ▶ **Signal Team:** With the introduction of added signal functionality, upgrade of current systems, or the trial of new systems, the signal team must dedicate resources to ensure signal requirements are met and their long term operation is maintained.
- ▶ **Parking Team:** Introducing additional parking strategies will require a commitment from the parking team to collaborate with the TMC for parking system maintenance, integration, and enforcement

### External

- ▶ **Stakeholders:** The involvement of the external stakeholders such as the police and fire departments, transit, rail operators, freight operators, and the Port of Seattle, are integral to successfully running the network. Operational strategies are only complete when they feature the input from third party stakeholders.
- ▶ **Outside Experts:** In realizing a strategy and implementing projects, a support from outside experts is needed, particularly during the initial deployment of both quick win and short term projects. This is due to the lack of resources currently available within SDOT to dedicate the required level of commitment.

### Management

Involvement from management is needed to guide the City through the procurement process, the acquisition of budgets, and the initiation of contracts.



## Budget

Operational and capital budgets are necessary for the implementation of any strategy. The lack of budget (or budgetary constraints) is the most common reason that plans and strategies are postponed, delayed, or abandoned altogether. There are a number of budgetary elements to consider, which are outlined below.

### Capital Budgets

These are the budgets required for the development of systems, the deployment of field equipment and upgrades to the TMC.

These budgets will include design, implementation, and consultant support.

### Operational and Maintenance (O & M) Budgets

These are the budgets for the ongoing operation of the systems, including operational resources, maintenance, software support, and vendor support.

## Conclusion

In conclusion, developing, maintaining, and executing the Next Generation ITS Strategy to support construction mitigation activities is a complex undertaking, and each element must be understood to realize a successful implementation. The strategies were developed based on a fundamental set of driving forces and assumptions. The strategies in this plan best position the City to acquire the tools to effectively address concerns and mitigate the driving forces.

