ITS Strategic Plan

Goal:
Environment: Achieve improvement in air quality and reductions in fuel consumption.

Focus Areas:
Environmental implications of ITS - Conduct research to document the improvements an ITS-enhanced multimodal transportation system makes on the environment.

Objectives:

- Conduct independent research and also review existing data (within the Department and outside the Department) on ITS impacts on fuel savings and air quality improvements.
- Establish an electronic clearinghouse/library (i.e. database) of ITS related research and data pertaining to environmental effects. Such research should be policy relevant so that other DOT offices, stakeholders can use it to help them make decisions.
- Demonstrate the ability of ITS to collect environmental data by leveraging operational tests/model deployments and conduct evaluations of the data.
- Facilitate the gathering & distribution of environmental data to travelers for use in route/mode choice and driver behavior.
- Conduct research on incorporation of environmental impacts into transportation models to support decisionmaking.
- Assess the need for and, if appropriate, set standards for the collection of environmental data through ITS technologies.
- Conduct research to better understand the role of ITS in addressing climatic challenges to our multimodal transportation system.
  - If we had to rebuild ports, highways, intermodal freight systems, how would we do that? What would a model transportation hub look like? What ITS components would be useful/maximize investment as these are built?
  - Weather is becoming more of a challenge – can ITS be useful in helping to keep system efficient during adverse weather events?

Measures of Success/Metrics

- Creation of a web-based database similar to the benefits/costs/lessons learned database.
- Research data on environmental impacts of ITS are credible for use in decisionmaking for transportation investments.
- JPO environment data viewed as sound and state of the practice, and is used in research, policy, and project decision making within and outside the Department.
- Greenhouse emissions are measured and reduced as ITS is being actively used as a tool which can reduce negative environmental impacts of transportation.
- Reduced fuel consumption due to ITS-enabled mobility and safety strategies.
Environmental impacts of travel choices are available to travelers

**Federal/JPO Role: Educator, Researcher, Promoter, Clearinghouse**

- Researcher: Research ITS impacts on the environment
- Clearinghouse: Compile and make available research results pertaining to ITS and the environment
- Standard setter: Establish data collection/distribution standards

**Not Federal/JPO Role**

- Avoid the “modeling trap” – must directly measure for credibility, and commercial model creation not JPO role
- Do not focus on fuel efficiency, fuel economy, emissions – other agencies/modes are doing that.
- Do not focus on environmental issues beyond scope of JPO – such as noise, or environmental degradation (ie, water, land, biological)
- Avoid becoming a “hall of justice” and keep focus on being a “library” of data that has undergone some level of basic scrutiny.

**Strategies**

- Clearinghouse function; database creation
- Cooperation with/participation in DOT-wide affords
- Leverage existing ITS demonstrations or field operational tests for environmental data collection, including actual observation and measurement, not only modeling. UPA sites would be an excellent starting point.
- Focus on “hot spots,” (areas of high impact) e.g.:
  - Smoothing traffic flow
  - Diesel fuel/emissions reduction
  - Idle reduction at truck stops and other areas
  - Freight emissions
  - Incident management
  - Corridors
- Focus on technologies and projects that make a positive impact on the environment by supporting improved system efficiency and decisionmaking.
- Move environmental considerations closer to the forefront of why JPO conducts the research it conducts, and measure what is important.
- Non-recurring congestion, such as incidents, can elevate emissions up by 300% and maybe up to 1,000%. Demonstrate how incident management systems reduce this multiplier. Demonstrate the environmental benefits of incident management systems.
- Strongly advocate for environmental testing as part of UPA agreements – have it actually in the agreement, and make it part of each evaluation.