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:

- o Conduct <u>independent research</u> and also review existing data (within the Department and outside the Department) on ITS impacts on fuel savings and air quality improvements.
- o Establish an <u>electronic clearinghouse/library</u> (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.
- o <u>Demonstrate</u> the ability of ITS to collect environmental data by leveraging operational tests/model deployments and conduct evaluations of the data.
- o Facilitate the <u>gathering & distribution</u> of environmental data to travelers for use in route/mode choice and driver behavior
- o Conduct research on incorporation of environmental impacts into <u>transportation models</u> to support decisionmaking
- o Assess the need for and, if appropriate, set <u>standards</u> for the collection of environmental data through ITS technologies
- o Conduct research to better understand the role of ITS in addressing <u>climatic challenges</u> 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 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 afforts
- 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.