

Transportation & Market Incentives Group
Strategic Plan for the 21st Century

L. Audette

Manager, Transportation Group, Office of Mobile Sources

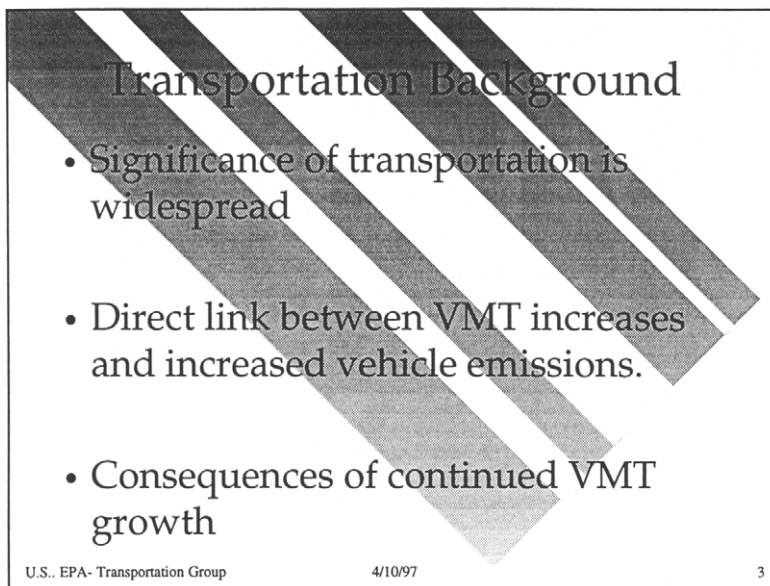
Transportation & Market Incentives Group
Strategic Plan for the 21st Century
5th U.S... Dutch International Symposium-Air Pollution in the 21st Century
Presenter: Lucie Audette
Manager, Transportation Group
Office of Mobile Sources

U.S. EPA- Transportation Group 4/10/97 1

1. New Division and group created Sept. 1995 -
2. 9 month effort to develop a strategic direction and focus limited resources in most effective manner.

**The
OMS
Mobile
Source
Control
Program-
Today
and in the
Future**

U.S. EPA- Transportation Group 4/10/97 2



Transportation Background

- Significance of transportation is widespread
- Direct link between VMT increases and increased vehicle emissions.
- Consequences of continued VMT growth

U.S.. EPA- Transportation Group 4/10/97 3

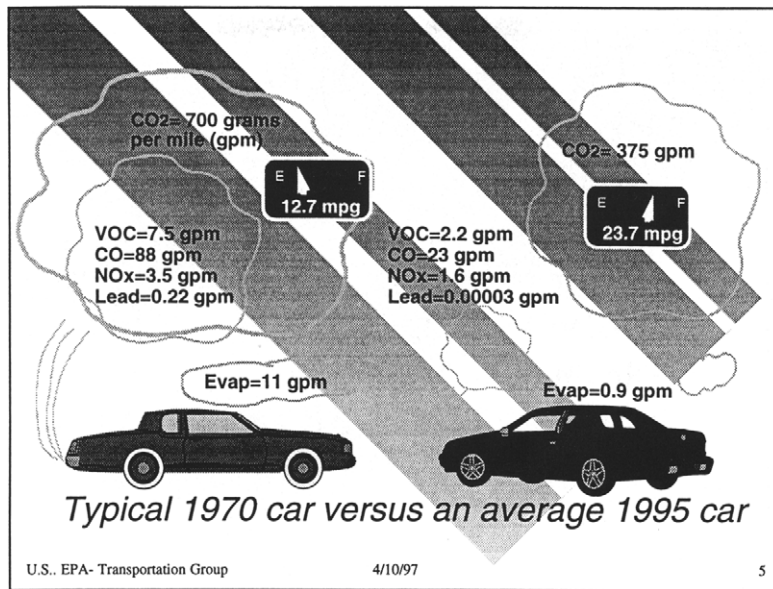
1. One of the largest sector of the US economy when considering Number of resources consumed and people employed.

2. Transportation contributes to many Environmental Problems:

- Wetlands loss
- Urban Smog
- Poor Visibility
- Solid Waste
- Climate Change
- Ozone Depletion
- Air Toxic Emissions
- HazMat Spills
- Urban Water Contamination
- Ecosystem Destructions.

Transportation Challenge... Changing OMS Role

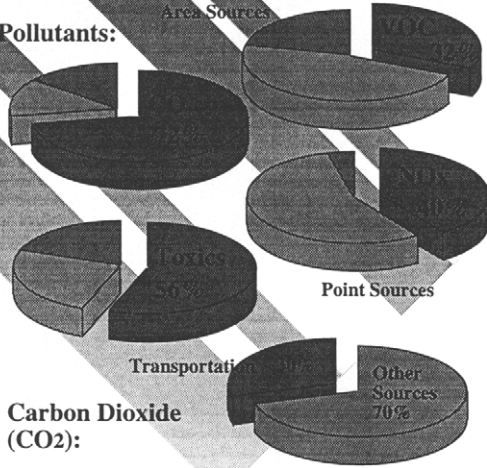
- Past Role - Carrying out Clean Air Act Mandates, focus on command-and control regulations
- Cars are cleaner.... but transportation related air pollution continues to be a serious problem throughout U.S.



1. **National LEV Program**- FRM 1997- Tight exhaust emissions standards
 >075 g/mile NMHC @ 50,000 Phase-in 1997 model year NE Ozone Transport Region, (benefits- 780 tons/day NMHC in 2015)
2. **Tier 2 Study**- Statute suggest: 0.125 g/mi NMHC and 0.22 g/mi NO_x @ 100,000 Beginning 2004 model years. Study not complete.
3. **Urban Bus Retrofit**- Public Transit Buses, 1993 and Earlier
 Urban areas over 750,000
 Two kit certification options- 25% reduction in PM
 Begin implementation this year
4. **Light Duty Vehicles and Light Duty Trucks** - Tier 1 Standards NMHC 0.31 g/mi and NO_x 0.6 g/mi @ 100,000 miles for LDVs, Longer useful life, Phase-in model year 1994-1996 Benefits: 160,000 tons VOC nationwide in 2005)
5. On-Board Vapor Recover- refueling emissions prevented with on-vehicle controls, Phase-in model year 1998-2000. benefits: 300,000 - 400,000 tons VOC (95% reduction over uncontrolled levels)

The Contribution of Motor Vehicles

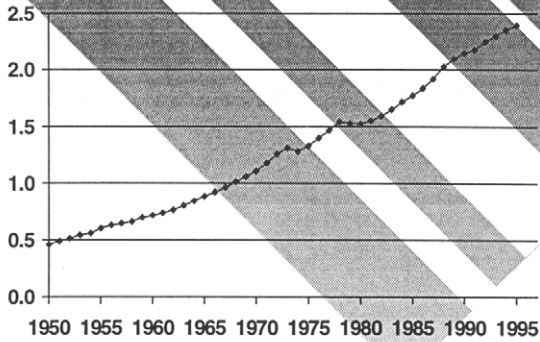
Pollutants:

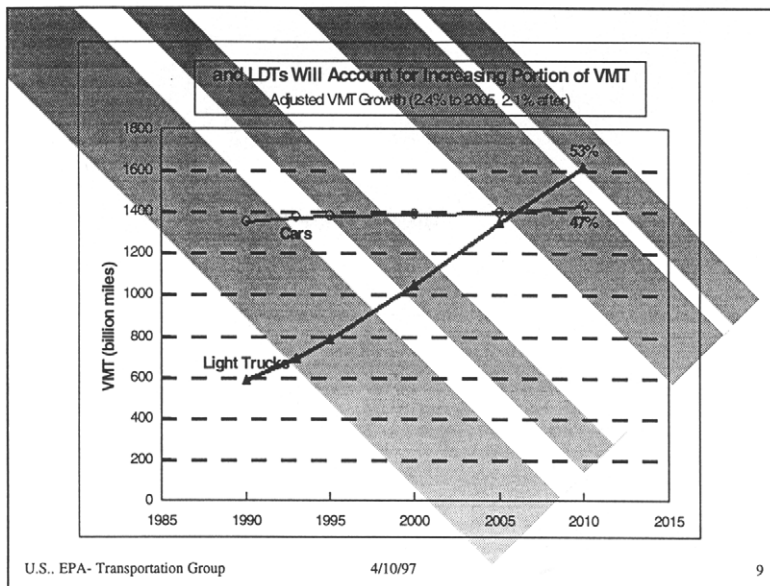
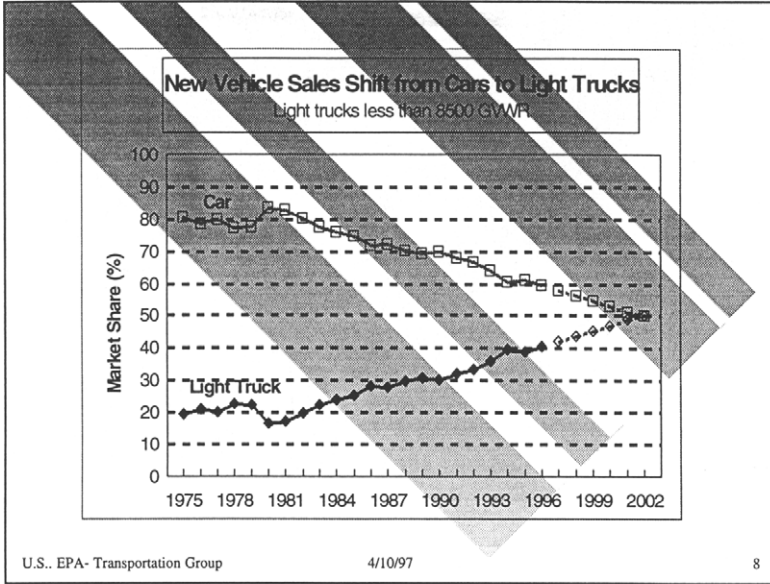


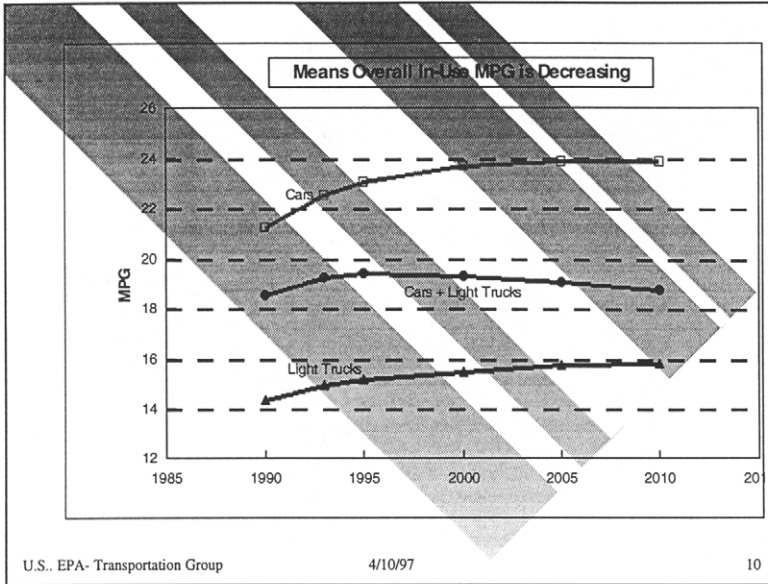
Carbon Dioxide (CO₂):

Total U.S... VMT: 1950-1995

(trillion miles per year)



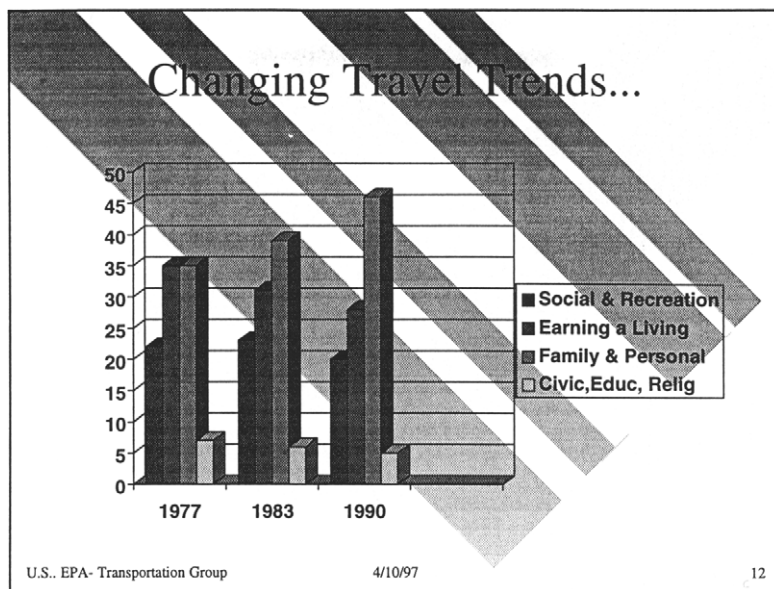




Transportation Challenge... Changing OMS Role

- Transportation problems complex and not subject to direct EPA control
- Changing Role- More emphasis on assisting States and Regions in developing a variety of measures/allowing for flexibility

U.S.. EPA- Transportation Group 4/10/97 11



* From 1977 to 1990 work-related trips as a share of all trips taken decreased significantly, from 35% in 1977 to 28% in 1990, whereas the share of family and personal business trips grew from 35% to 46%.

Objective -- Transportation & Market Incentives Group

Reduce in-use emissions from transportation sector utilizing activity-based strategies.

⇒ Reduce growth rate of VMT
⇒ Reduce Trips

U.S. EPA- Transportation Group 4/10/97 13

Focus -- Criteria Pollutants/Global Warming

Reducing the growth rate of VMT and
trips supports...

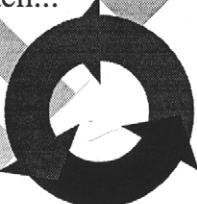
- ⇒ EPA efforts to reduce criteria pollutant
emissions and improve air quality
- ⇒ EPA global warming efforts
- ⇒ It's a double hit.

U.S.. EPA- Transportation Group 4/10/97 14

An Integrated Strategy

How will we reduce the historic growth rate
of VMT?

By pursuing three track
integrated approach...



U.S.. EPA- Transportation Group 4/10/97 15

An Integrated Strategy to Reduce VMT Growth Rate

- Track 1: Properly merge air quality, transportation, and land use planning.
- Track 2: Put in place and foster the use of viable transportation alternatives.
- Track 3: Develop and implement transportation programs that incorporate market incentive measures.

U.S. EPA- Transportation Group 4/10/97 16

1. Track 1: Inter-relation between urban design factors/ development patterns and transportation facilities and travel patterns.

2. Track 2: **The key here is providing flexibility and choice.**

Put in place viable transportation alternatives. This means developing a supply of alternatives that are realistic for a given community. this needs to address both low capital alternatives such as regional rideshare, subsidized transit, telecommuting, and high capital alternatives such as light rail, alternative fueled vehicles.

Foster the use of viable transportation alternatives. This requires providing accurate and timely information and conducting public education efforts both with the driving public and with school age children... the future.

3. Track 3: All our pilots and efforts should continually seek to utilize the creativity and power of the free market.

4. There is overlap between each of the tracks. We've separated for clarity but in reality there is merger.

**Track 1 - Coordinate Air Quality/
Transportation/Land Use Planning**

- **Conformity reinvented**
 - » Air Quality/Transportation planning process merged.
- **Development of analytic tools**
 - » TMIP/TRANSIMS - a collaborative effort with DOT/DOE/EPA is fully coordinated. Other complementary modeling efforts are coordinated.
- **ISTEA Reauthorized**
 - » Incorporates environmental concerns
- **Urban Livability Initiative**

U.S. EPA- Transportation Group 4/10/97 17

CONFORMITY

1. Final Rule will be published in April of 1997
2. CAP will issue initial report in early summer and Finalize in Fall of 1997/
3. Pilot projects- expressions of interest from 6 areas but they are waiting to see final conformity rule before submitting specific proposals.

ANALYTIC TOOLS

1. Transportation Model Improvement Program- short and long term effort to improve the modeling capability of MPOs (Metropolitan Planning Organization) and more fully integrate air quality and transportation modeling efforts.
- 2.. 5 track effort includes improving landuse modeling techniques and developing a long term transportation simulation model (TRANSIMS). This is a long term 10- 15 year effort.

ISTEA :

1. **ISTEA of 1991 authorized \$151 in transportation funding through FY97. Expires Sept. 30, 1996.**

2. **EPA has workgroup to develop key environmental positions and is working cooperatively within the administration to develop a proposal.**

3. WHY we care:

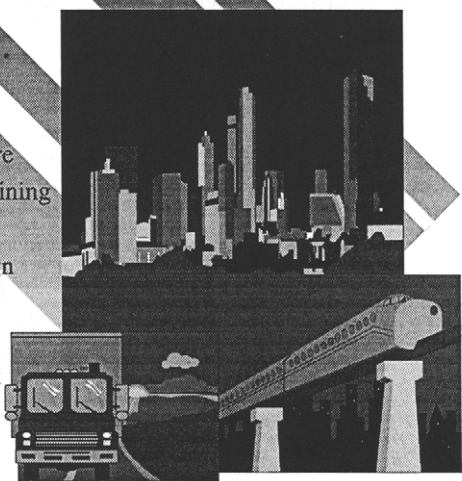
(a) **ISTEA through Conformity and Fiscal constraint provisions require that environmental impacts and resources must be considered in developing transportation programs, projects and plans (TPs and TIPs). Encourages local/public participation shifting decisions toward local/regional authorities.**

(b) **Provides funds that can result in environmental benefits:**

- Flexible STP Funds
- \$3 billion in planning funds
- \$3 billion in enhancements funds
- \$6 billion in CMAQ funds (Congestion Mitigation and Air Quality)

Urban Livability: Trend

- Communities are perceiving the cost of sprawl in infrastructure expenditures and declining quality of life
- Land use and design strategies increase effectiveness of other demand management measures



U.S., EPA- Transportation Group

Sustainable Development (cont.)

There are a number of efforts currently underway within EPA to address sustainable development.

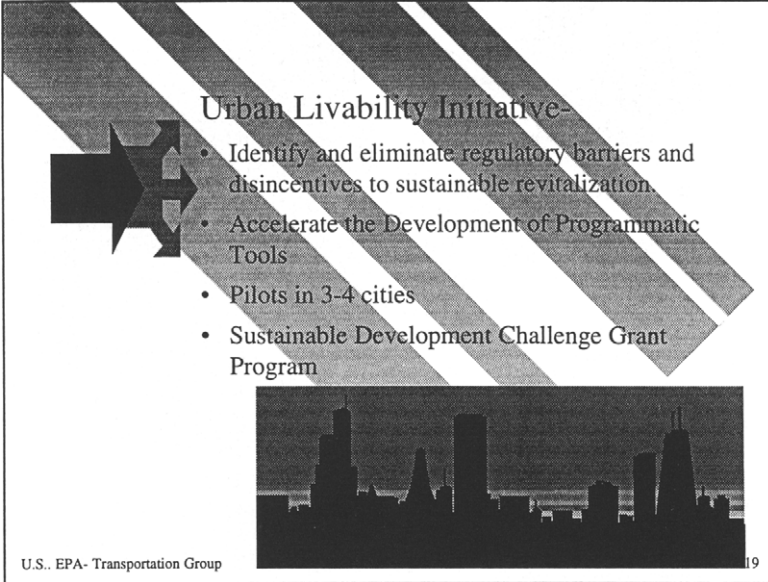
1. OPPE-Urban and Economic Division

Smart Growth Network is being created to (1) create coalitions to encourage infill development and provide information to local governments and developments on alternatives to sprawl.

2. OPPE- Energy and Transportation Sectors Division

Transportation Partners- teams with nongovernmental organizations (our Principal Partners) to develop innovative transportation solutions . Principal Patterns include Association for Commuter Transportation, Bicycle Federation of America, Local Government Commissions, Public Technology Inc., Renew America,

3. **REGIONS-** There is increasing sustainable development activity occurring throughout the U.S.. EPA regional staff are involved in a number of innovative pilot efforts... Region1- Visual Preference Survey, Regional 3- Sustainable Development Indicators work, Regional 9... involvement in several local general plan developments.



Urban Livability Initiative

- Identify and eliminate regulatory barriers and disincentives to sustainable revitalization.
- Accelerate the Development of Programmatic Tools
- Pilots in 3-4 cities
- Sustainable Development Challenge Grant Program

U.S. EPA- Transportation Group 19

4. FY97 Sustainable Development Challenge Grant Program -- OAR / OW

OMS sustainable development team will provide review and convey information to Regional transportation contacts.

Purpose: A total of \$5 million will be awarded to 25 to 30 projects that link environmental management with sustainable development and economic revitalization. The FY96 program served as a pilot and 10 projects were chosen for grants. This year, the projects chosen will have more of a transportation / sustainable development / metropolitan focus, and EPA Regions will make the first selection cut.

Status: Federal Register announcement of the FY97 program is expected within a month.

5. The Urban Effort -- Joint EPA Office Initiative

The Urban Effort will create a small core staff of personnel detailed from offices within EPA.

Purpose: Develop and demonstrate strategies to pursue environmental and economic development goals of urban areas. EPA will fund pilots that have promise of replicable results in other areas.

Track 2 - Transportation Alternatives Are In Place and Used

- **Travel Smart Initiative**
- **Intelligent Transportation System (ITS) Support**
- **Technical assistance for transportation measures**
 - ✓ quantification of voluntary programs

Travel Smart Efforts

- DOT/EPA collaboration
- Youth targeted VMT reduction Academy for Education Development (AED)
- Smart Travel Resource Center
- Factsheet Development
- Product Distribution for States, MPOs and other stakeholders




DOT/ EPA Collaboration

What is it?

- Public Information Initiative
- Pilot site testing
- National and Local Campaign/ Coalition

Objectives

- Increase public understanding and awareness
- Encourage positive travel decisions
- Encourage positive life-work decisions

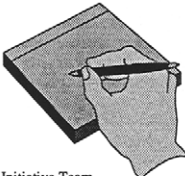


U.S. EPA- Transportation Group
4/10/97
22

- IAG with DOT; DOT contractor-Global Exchange
- New name: DOT/ EPA Transportation/ Air Quality Public Information Initiative
- Target Audience: Driving Public
- Program begins with pilot site testing
- National/ Local Campaign
- National/ Local Coalition
 - 1 - Diverse entities brought together: different perspectives; ideas
 - 2 - Long-term sustainability == > funding, leadership shifts to partners
 - 3 - Credible sources: assistance with message delivery
- Objectives: both short and long term

DOT/ EPA Collaboration: Pilots

<p>Where:</p> <ul style="list-style-type: none"> ■ Dover, Delaware ■ Albany, New York ■ Milwaukee, Wisconsin ■ San Francisco, California 	<p>What:</p> <ul style="list-style-type: none"> ■ Develop messages ■ Test messages ■ Establish baseline of: <ul style="list-style-type: none"> - awareness - attitudes - travel behavior ■ Coalition building
---	--



Smart Travel Initiative Team // ##

Process for Pilot Selection

- **Determine criteria:** ozone non-attainment, range of transportation infrastructure, variety of demographic size, geographically diverse, etc.
- Input from Regions (approx. 25 recommendations)
- DOT/ EPA agreement on short list of 11 metro areas
- Request input from MPOs:
 - 1- Ability, willingness to work with Feds
 - 2- Resources (staff, financial, in-kind services) -- we are only giving \$25 - \$50 K
 - 3- Potential Partners
 - 4- Ability to survey/ evaluate; feds limited by ICR rules

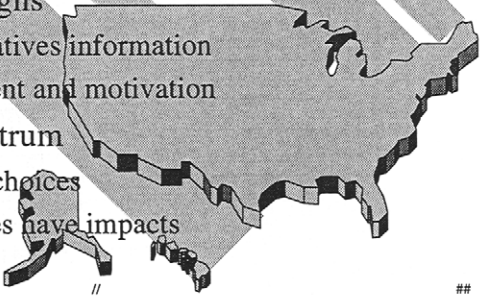
Purpose of Pilots

- Develop program that is nationally applicable
- Every pilot will be different

**DOT/ EPA Collaboration:
Messages**

- **National Campaign**
 - Link between travel choices and air quality
 - Link between emissions/ air quality to health
- **Local Campaigns**
 - Travel alternatives information
 - Encouragement and motivation
- **Message Spectrum**
 - People have choices
 - Travel choices have impacts

Smart Travel Initiative Team // ##



•Consistent national message: Provides context and framework for individual responsibility in regards to transportation and air quality.

•Some examples of transportation alternatives

- Walking and biking
- Ridesharing
- Telecommuting (working at home)
- Trip Chaining

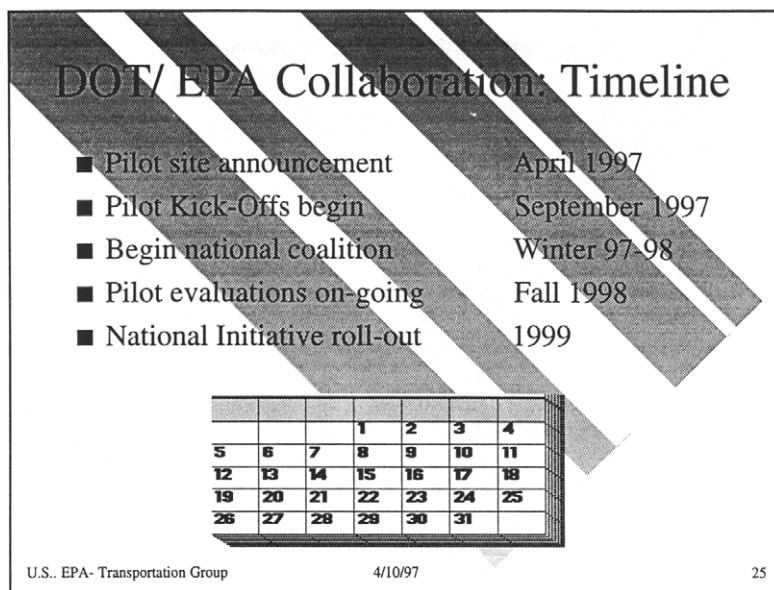
•Messages will not be designed to give drivers a guilt trip

•Messages will emphasize the “real” benefits of engaging in transportation alternatives

- 1- Reading and relaxation time while others drive
- 2- Cheaper to take mass transit than drive
- 3- More productive now that I telecommute

Message Spectrum

- 1- If “cooperative” pilot agreements consist of testing federal messages - EPA can have a role in message control
- 2 - If “cooperative” pilot agreements allows sites to develop their own messages - No EPA role in control of messages whatsoever



Currently working with DOT to bring timeline forward

Pilot Site Announcement

- Internal EPA
- Letters to State & Local air officials/ directors and Stakeholders
- Press advisory, Trade Press

Pilot Kick-Offs: Invite Mary to be involved

National Coalition

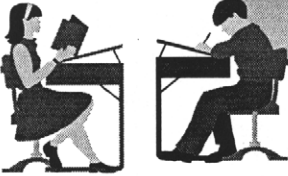

- Begin recruitment after we can apply coalition building lessons learned from pilots
- Some examples of potential national partners: Air officials (STAPPA), grassroots transportation/ environmental (STPP), TP folks, environmental organizations (EDF), FACA folks - provide information and opportunity for participation, stationary source community, auto-related community (manufacturers, AAA, oil industry)
- Invite some to participate; others may be informative/ supportive role -- analogy of drunk driving campaigns
- Ask Margo/ Mary for suggestions and input

Youth Targeted Pilot: AED

■ **Goal:**
Involve youth in reducing vehicles miles traveled (VMT)

■ **Timeline: 3 year project**

- Year 1: pilot site 1- behavioral assessment
- Years 2-3: addition of pilot sites 2 & 3 for assessment

U.S. EPA- Transportation Group
4/10/97
26

- Academy for Educational Development is: a non-profit service organization with expertise in youth development, social marketing and behavior change science.
- Partnership with Scholastic Magazine, one of the nation's premiere educational publishing houses.
- in-school and out-of school activities for youth:

Younger children: grades 5-7

Transition youth: grades 8-9

Young drivers: grades 10-12


Behavioral Assessment:

- 1) What's in it for me?, 2) Do my friends care?,
- 3) Can **I** do this?

Youth : can potentially have impact on: 1) their travel behave. now and in future and 2) their parents travel behave. now and in future.

Smart Travel Resource Center

- Goals: Facilitate exchange of info
- Timeline: 1997 fiscal year
- Results:
 - Outreach program summaries
 - Scanned outreach materials
 - Environmental education curricula
 - List of and links to other websites



U.S.. EPA- Transportation Group 4/10/97 27


The STRC is a clearinghouse of tran-air quality education campaign information. (tool or mechanism for communication efforts). We expect that public decision makers, industry, consultants, public interest groups, as well as everyday individuals who support alternatives to driving alone will be among the many users of the STRC. The RC is basically an electronic depository of information assessable via the Internet and WWW.

The overriding goal of this effort is to facilitate the sharing of information on a variety of tran-air quality programs thru out the country and to improve the communications btw state and local officials regarding these efforts. This is especially valuable now because of the NAAQS revisions. We anticipate that many states and metropolitan areas will be interested in implementing these types of education and outreach programs in order to meet National Air Quality Goals.

The STRC will produce a variety of results. Program summaries will include pertinent information such as targeted pollutant, intended audience, sponsors, etc. The types of programs included will vary, for example, we will feature programs that have been operational for many years with significant budgets, and numerous sponsors. We will also feature programs that are more grass roots or community based. (read other results) The RC will link users to other websites, specifically those related to the environment, health and transportation. For example, there will be a link to a variety of episodic information which other members of TMIG are developing.

Transportation Alternatives Technology Applications

- Telecommunications technologies are substituting for vehicle travel, easing toll collection, and making transit more user-friendly
- 1-4 million Americans telecommute today; may rise to 29 million workers by 2010, reducing VMT by 4-5%



U.S.. EPA- Transportation Group 4/10/97

• Is Telecommuting the remedy for urban gridlock and air quality related problems?

• **Results to date in U.S.-** Falling short of expectations despite efforts by transit agencies, telecommunications firms to promote it. **Estimates** of telecommuters range from 4.1 million to 40 million, when work-at-home moonlighters are included.

• **Examples-** Summer Olympics in Atlanta- experiment in telecommuting- more than 200,000 workers telecommuted. **BUT those continuing after close have been too few to accurately count.**

• **Examples-** 1993 Congress appropriated \$6 million--goal to get 60,000 federal workers to telecommute by October 1998(workforce 3 million) Additional \$5 million appropriated in 1996.

• **RESULTS TO DATE:** 9000 government telecommuters

Has telecommuting peaked?

• 1/3 of large companies in U.S. today let some employees work at least sometimes from home. Recent survey showed that only an additional 8% of those who currently don't allow considering- (May survey by Mercer Management Consulting)

• Annual growth in telecommuters- 6% today expected to decline to 1% growth in 2003 and beyond (According to Find/SVP, research firm which tracks telecommuting trends) **Demise of 1990 ECO program.**

Intelligent Transportation Systems- Actions

ITS Goals

- reduce travel time
- squeeze more capacity out of existing roads
- Safer roads and faster emergency response
- reduce congestions and improve traffic flow (+50% VMT in 10 years)
- More efficient and productive commercial transport sectors

What is it?

- 9 Elements
 - traffic signal control systems
 - freeway management systems
 - transit management systems
 - multimodal traveler information systems
- 4 model Deployment Initiatives
- 75 largest Metro Areas in 10 years.

U.S., EPA- Transportation Group 4/10/97 29

4 Model Deployment Initiative cities announced October 1996 by DOT

Seattle- \$13.7M

Phoenix \$7.5 M

San Antonio- \$7.1 M

NY/NJ/Conn. - \$10.43 Mm

Private sector fund "partner" >50%.....Operational December 1997

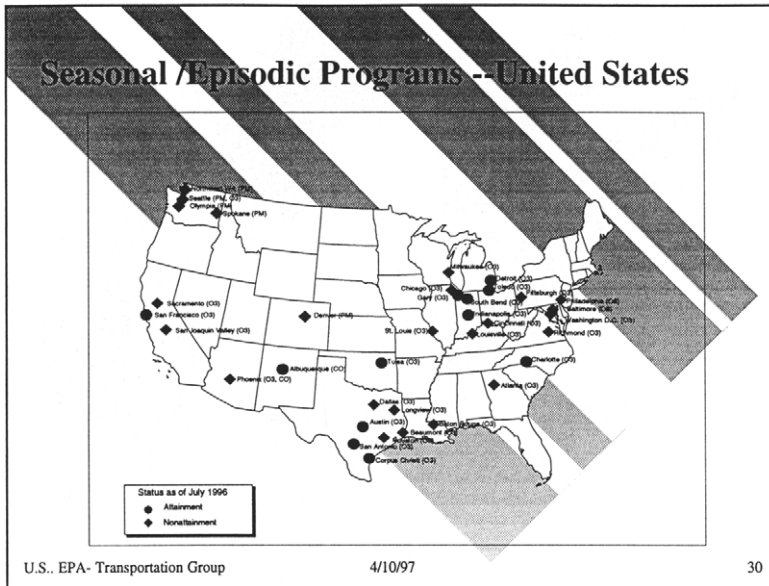
ITS Program ASSESSMENT- Crashes and Fatalities

Throughput and Time Savings

Customer Satisfaction

Cost Savings

energy and Emissions



- Rapid increase in programs
- Goals-
 - Public Education,
 - Attain or Maintain AQ Standards
 - Health Benefits
 - Congestion Management
 - Reduce Emisions
- Program Components-
 - Develop public and employer outreach tools
 - Coordinate with local community and businesses
 - Develop employer emissions reduction plans/measures
 - Develop accurate forecasting techniquet
 - Establish/operate media notification network
 - Collect data on impact of program
- Types of Control Measures- Focus on delay of emission producing activities
 - Mobile Sources- VMT reductions/shirting modes
 - Area Sources- Delay Activities (mow lawn, refuel)
 - Stationary Sources- Limit Ancillary Activities


Track 3 - Market Incentive Programs

- Market Incentives Data Base
- Market Incentive Guidance
- Incorporate Market Measures Across OMS Programs



U.S. EPA- Transportation Group 4/10/97 31

Market Incentive Programs: Types



- In general:
 - » Taxes/fees
 - » Subsidies
 - » Trading programs

U.S. EPA- Transportation Group 4/10/97 32

Transportation-sector specific:

Fee based on VMT and/or emissions

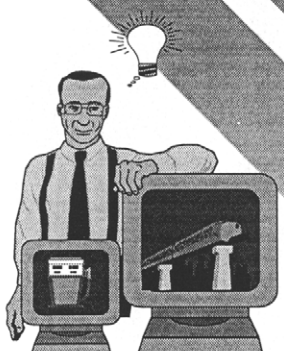
Road tolls, congestion pricing

Paying for parking/insurance

Transit fare subsidy

Scrappage

Market Incentives Resource Center



- Ideas and “how to” information on market incentive programs
- perspective of areas instituting programs
 - inclusive- Stationary and Mobile Source Programs
- Central location easy to access/ will be available on web


U.S., EPA- Transportation Group 4/10/97 33

Transportation SIP Guidance

- EPA/FHWA
- Publication of “A Guide for Decision Makers: Opportunities to Improve Air Quality Through Transportation Pricing
- How to calculate SIP credits from market based strategies, including:
 - » At the pump charges
 - » Parking Pricing
 - » Emissions fees
 - » Roadway pricing (inc. congestion pricing)
 - » Subsidies

U.S., EPA- Transportation Group 4/10/97 34

Implementing the Transportation Objectives



Collaborating with...

Intraagency

- OAQPS
- OPPE
- Regional Offices

Interagency

- FHWA/FTA
- DOE
- CARB

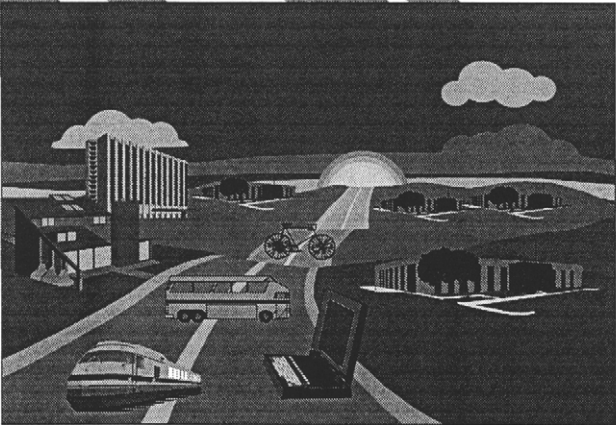
Regional/state/local governments

- STAPPA/ALAPCO
- NARC

Nongovernmental organization

- ACT
- STPP
- EDF

U.S. EPA- Transportation Group 35
4/10/97



U.S. EPA- Transportation Group 36
4/10/97