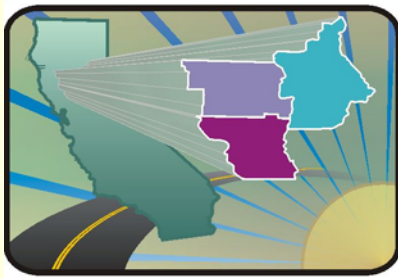


What is ITS?



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Learning Objectives

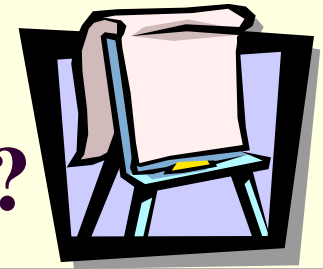
At the end of this session, you should be able to:

- Identify some elements and functions of ITS
- List some benefits of ITS

Transportation Challenges

**Identify two significant
transportation needs or challenges
in your region.**

What solutions are possible for these transportation challenges?



Challenge: _____

Possible Solutions:

1.) _____

2.) _____

3.) _____

4.) _____

5.) _____



Observations:

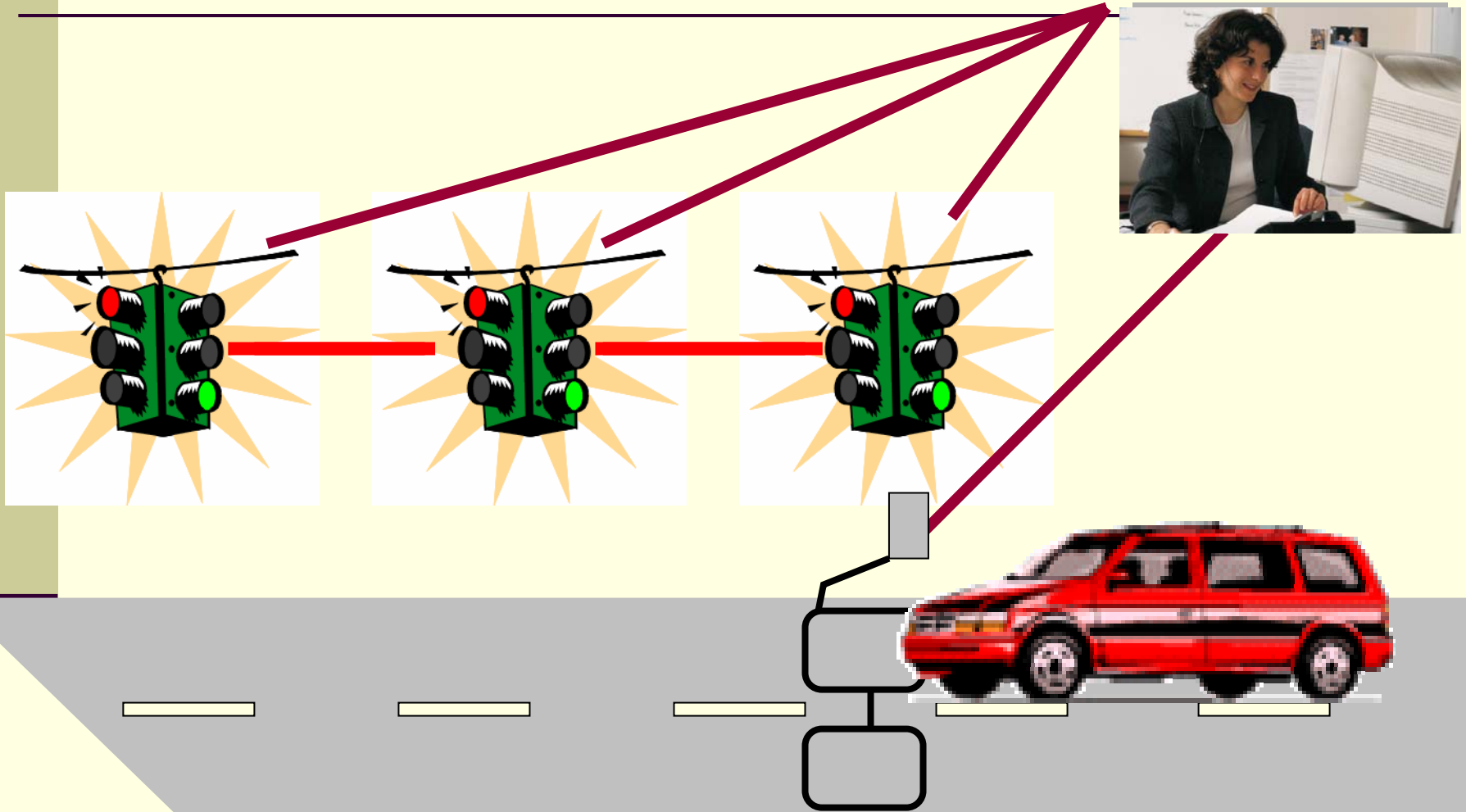
- ITS offers some new solutions to “traditional” transportation challenges.
- Choice between “traditional” vs. ITS solution depends upon local resources and priorities.
- ITS is sometimes combined with traditional transportation solutions.

Problem: traffic congestion

One cause: uncoordinated signals



What do you need to coordinate traffic signals?



System Elements & Functions

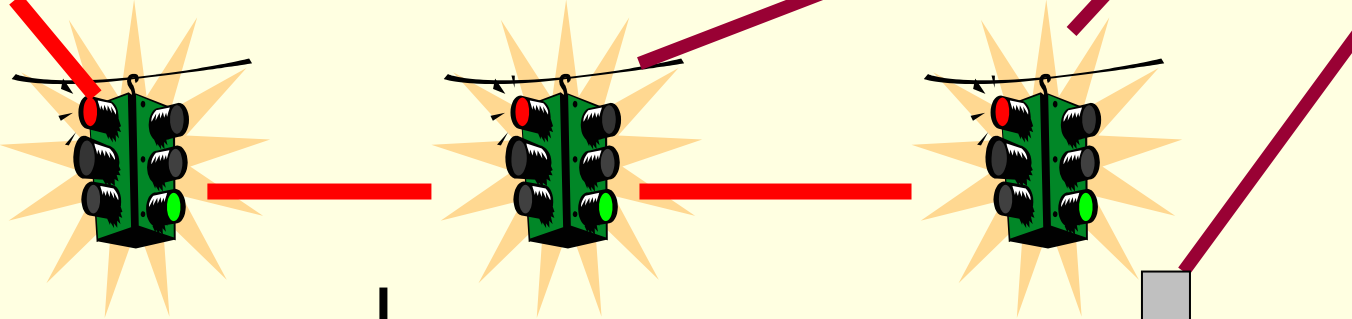
<u>System Elements</u>	<u>Functions Performed</u>
■ Traffic Signals	Control traffic flow
■ Sensors	Monitor traffic changes
■ Computer.	Select control strategies
■ Communications.	Enables elements to share information

Are there some local examples of these?

Conclusion:

**For successful ITS projects,
system elements must communicate
(they must be “integrated”)**

How would you coordinate the traffic signals if the road crosses two jurisdictions?



Deep Valley | Mountain High



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Conclusion 2:



**For interjurisdictional projects,
the systems must communicate
with other agency's systems
(they must be “integrated”)**



What Other Challenges Can ITS Address?

Intelligent Infrastructure:

1. Arterial Management
2. Freeway Management
3. Transit Management
4. Incident Management
5. Emergency Management
6. Traveler Information
7. Crash Prevention
8. Roadway Maintenance
9. Road/Weather Mgmt

Types of ITS Benefits

(From: "ITS Benefits & Costs, 2003")



Safety



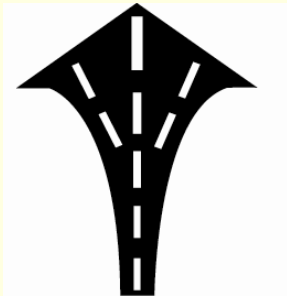
Customer
Satisfaction



Mobility



Productivity



Capacity/
Throughput

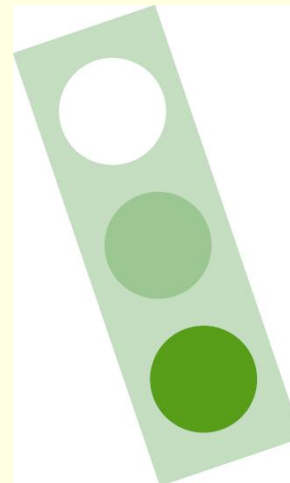


Energy &
Environment



Arterial Management Systems

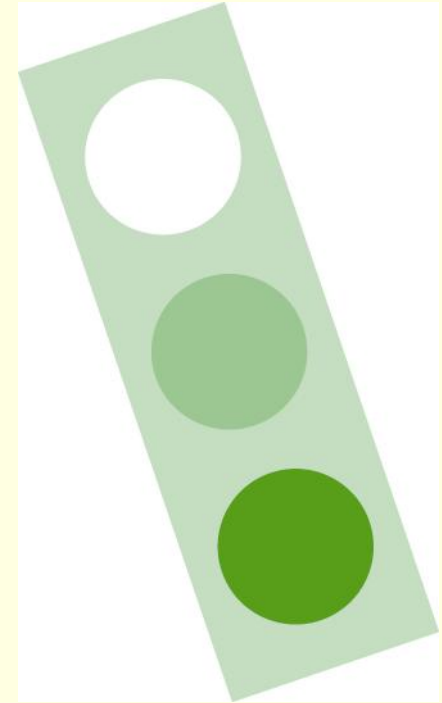
- Traffic Surveillance
- Traffic Control
- Lane Management
- Parking Management
- Information Dissemination
- Enforcement



Arterial Management Systems

Types of Measured Benefits:

- Safety
- Mobility
- Productivity
- Customer Satisfaction
- Energy and Environment



Freeway Management Systems

- Traffic Surveillance
- Ramp Control
- Lane Management
- Special Event Transportation Management
- Information Dissemination
- Enforcement



Freeway Management Systems

Types of Measured Benefits:

- Safety
- Mobility
- Capacity/Throughput
- Customer Satisfaction
- Energy and Environment

Transit Management Systems

- Safety and Security
- Transit Demand Management
- Fleet Management
- Information Dissemination



Transit Management Systems

Types of Measured Benefits:

- Mobility
- Productivity
- Customer Satisfaction

Incident Management Systems

- Surveillance and Detection
- Mobilization and Response
- Information Dissemination
- Clearance and Recovery



Incident Management Systems

Types of Measured Benefits:

- Safety
- Mobility
- Customer Satisfaction
- Productivity
- Energy/Environment

Emergency Management Systems

- Hazardous Materials Management
- Emergency Medical Services
- Response and Recovery



Emergency Management Systems

Types of Measured Benefits:

- Customer Satisfaction
 - Time Savings Often Equals Lives Saved.

Traveler Information Systems

- Pre-Trip Information
- En-route Information
- Tourism and Events



Traveler Information Systems

Types of Measured Benefits:

- Mobility
- Customer Satisfaction

Crash Prevention and Safety

- Road Geometry Warning Systems
- Highway Rail Crossing Systems
- Intersection Collision Warning
- Pedestrian Safety
- Bicycle Warning Systems
- Animal Warning Systems



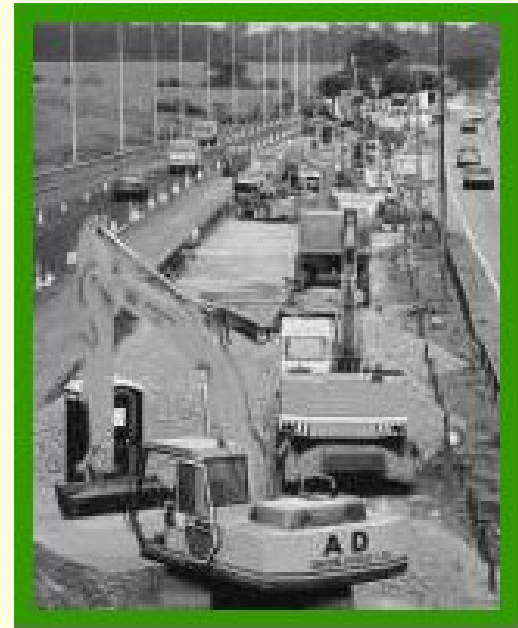
Crash Prevention and Safety

Types of Measured Benefits:

- Mobility
- Safety

Roadway Ops & Maintenance

- Information Dissemination
- Asset Management
- Work Zone Management



Roadway Ops & Maintenance

Types of Measured Benefits:

- Mobility

Road Weather Management

- Surveillance, Monitoring, and Forecasting
- Information Dissemination
- Traffic Control
- Response and Treatment



Road Weather Management

Types of Measured Benefits:

- Safety
- Productivity

ITS ...

Includes:

- Comprehensive management strategies
- Applying technologies
- In an integrated manner
- To improve efficiency or safety.

Involves:

- Technical aspects
- Interagency coordination aspects

ITS Benefits: By the Numbers

(From: “ITS Benefits & Costs, 2003”)

- In Idaho, weather warnings on freeway dynamic message signs reduced speeds:
 - 35% speed reduction with signs
 - 9% speed reduction without signs
- In Maryland, comprehensive incident mgmt. systems reduced average incident duration:
 - 57% in 2000
 - 55% in 1999

More...

ITS Benefits: By the Numbers

- On I-70 in Colorado, a dynamic speed warning system improved safety for trucks heading down steep grades.
 - 13% reduction in truck accidents
 - 24% reduction in use of runaway ramps
- In Ames, Iowa, an automated train horn system decreased areas impacted by noise levels greater than 80 decibels by 97%.

ITS Benefits and Costs, 2003 Update is available free at
<http://www.mitretek.org/its/benecost.nsf>



Review:

Learning Objectives

- Identify key elements and functions of ITS
- List some types of ITS benefits

Questions?



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