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Planning Transportation for Recreational Areas

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University of Kansas

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Transportation Planning for Recreational Areas

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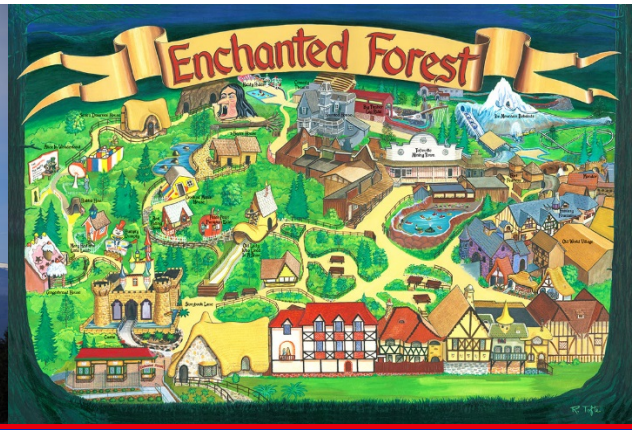


About Your Speaker

- Formative experiences
  - Transportation Scholar of the National Park Foundation, serving Glacier National Park, 2001
  - Contributor to the National Park Service's Alternative Vehicle Design Workshop, 2002
  - Dissertation funded by the National Park Service, National Park Foundation, and Ford Motor Company, 2002-2005
- Major publications
  - *Transit in Parks: Impacts and Guidance*, dissertation of the Georgia Institute of Technology, 2005.
  - "Helping Gateway Communities Support Alternative Transportation," *Sustainable Transportation in Natural and Protected Areas*, 2015.
  - "Recreational Areas," Institute of Transportation Engineers (ITE) *Transportation Planning Handbook, 4th edition*, 2016.

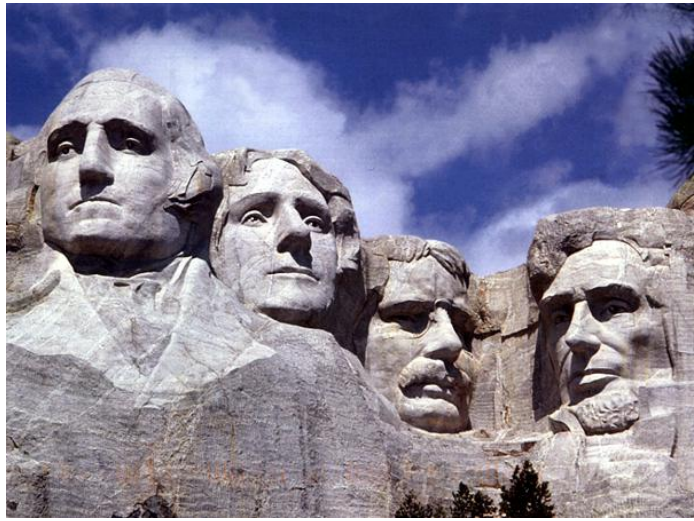
Outline

- Unique qualities of recreational areas
- Recreational travel characteristics
- Planning for recreational transportation
- The underestimated importance of communication

Crater Lake, Oregon

Examples of Areas

- Natural
  - Oceans
  - Mountains
  - Gorges
  - Deserts
- Activity-oriented
  - Amusement rides
  - Festivals
  - Gambling
  - Skiing
  - Snorkeling
- Historic and cultural
  - World Trade Center site, New York City
  - Independence Hall, Philadelphia
  - Mount Rushmore, South Dakota



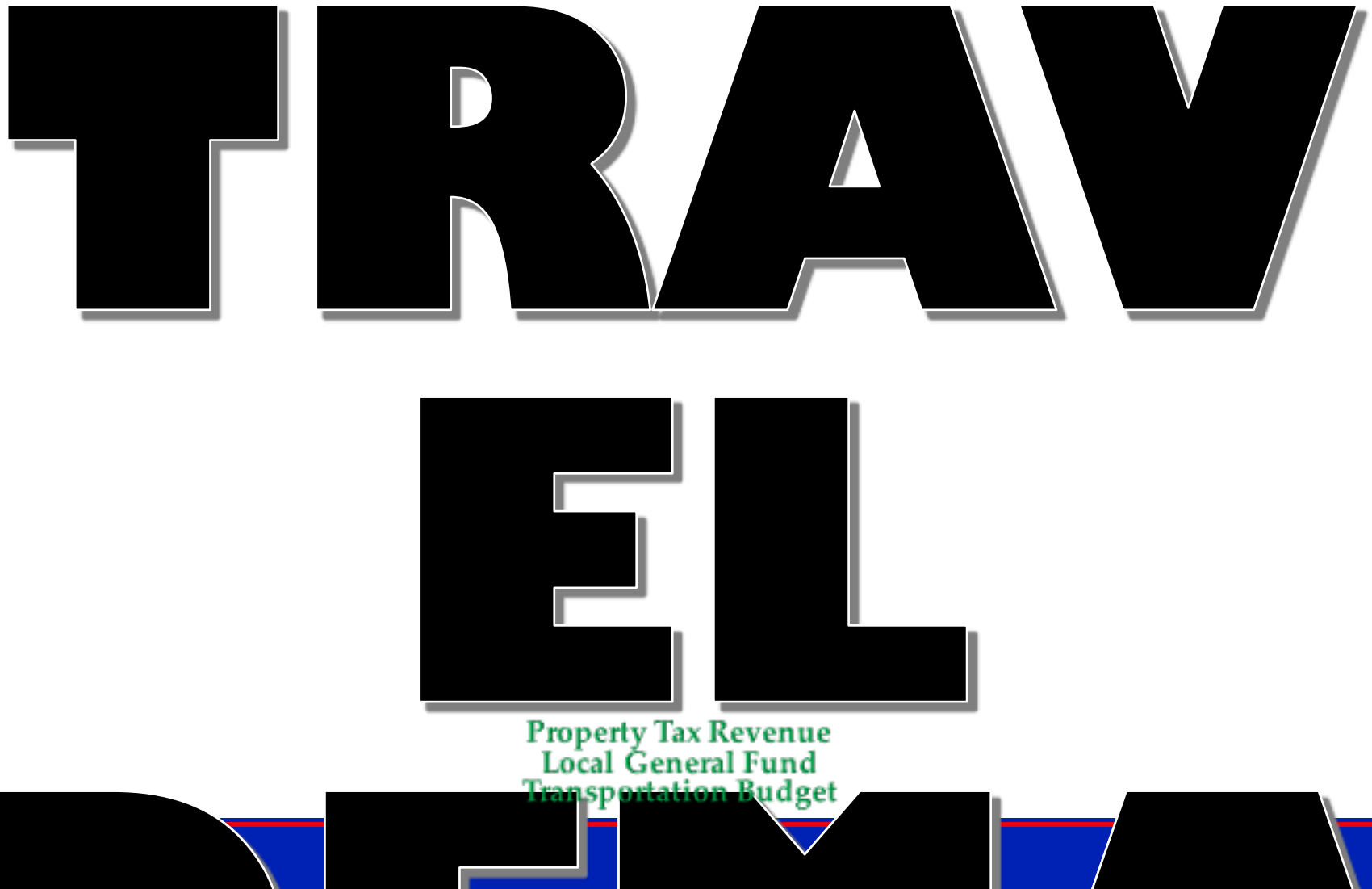
Typical Recreational Communities

- Economic base in tourism
- Little economic activity beyond tourism
- Small or medium population
- Polarized incomes
  - Wealthy visitors and permanent residents
  - Minimum-wage seasonal service workers
- Seasonal activity and employment
- Permanent population (and tax base) overwhelmed by visiting population

Jackson Hole, Wyoming, 2015
Population: 9,577
Visitors: 10.5 million

Springdale, Utah,
Population: 529
Visitors: 3.7 million

A Problem of Scale



Why plan transportation?

- Rural road traffic mimicking metropolitan peak congestion
- Stress on natural ecology and cultural resources
- Air and noise pollution from vehicles
- Diminished tourist appeal

Image source:
"A Review of the Recreation Opportunity Spectrum and its Potential Application to Transportation in Parks and Public Lands" (March 2011).

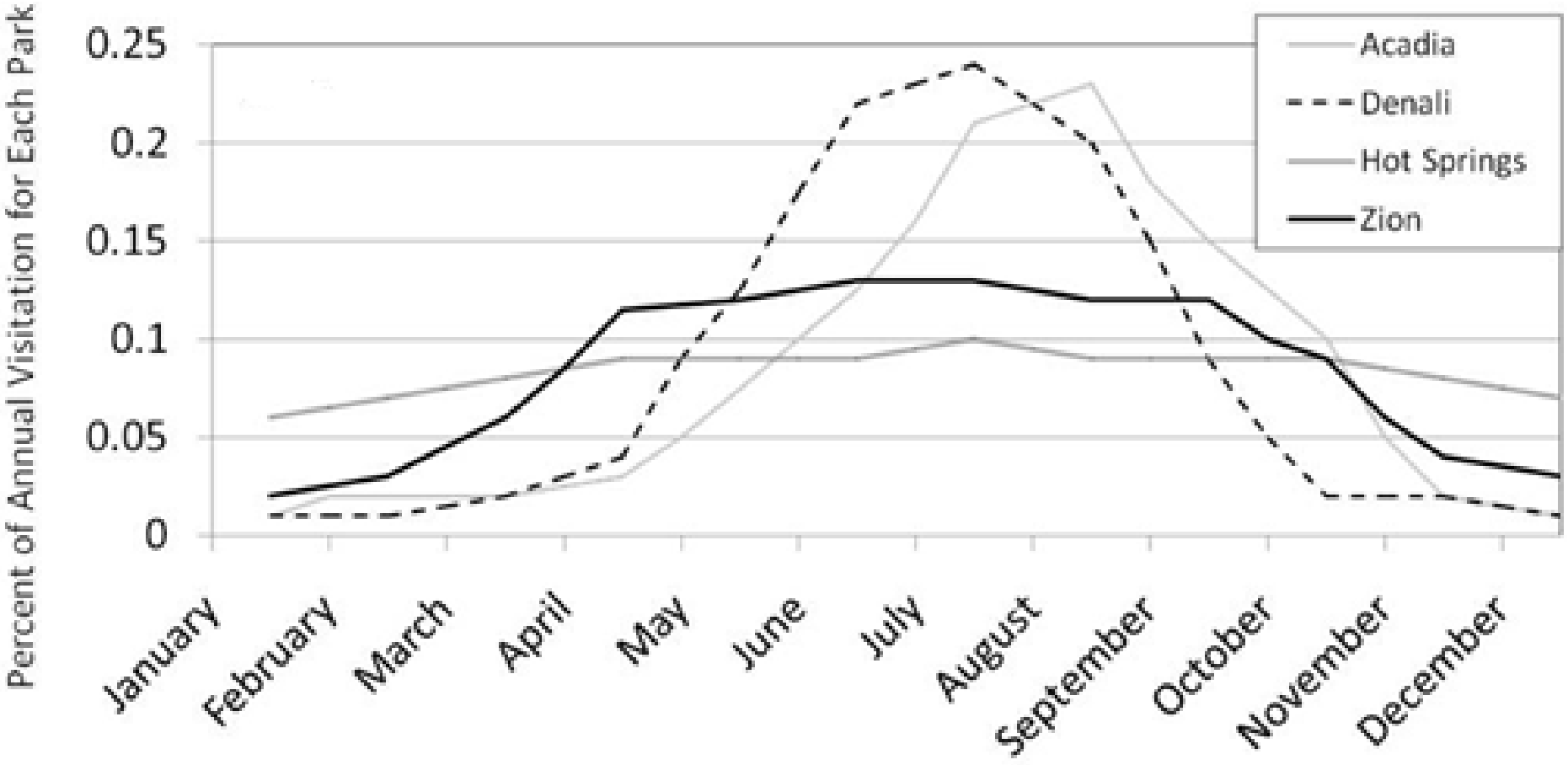
Cape Cod, Massachusetts

RECREATIONAL TRAVEL CHARACTERISTICS

Recreational Travelers

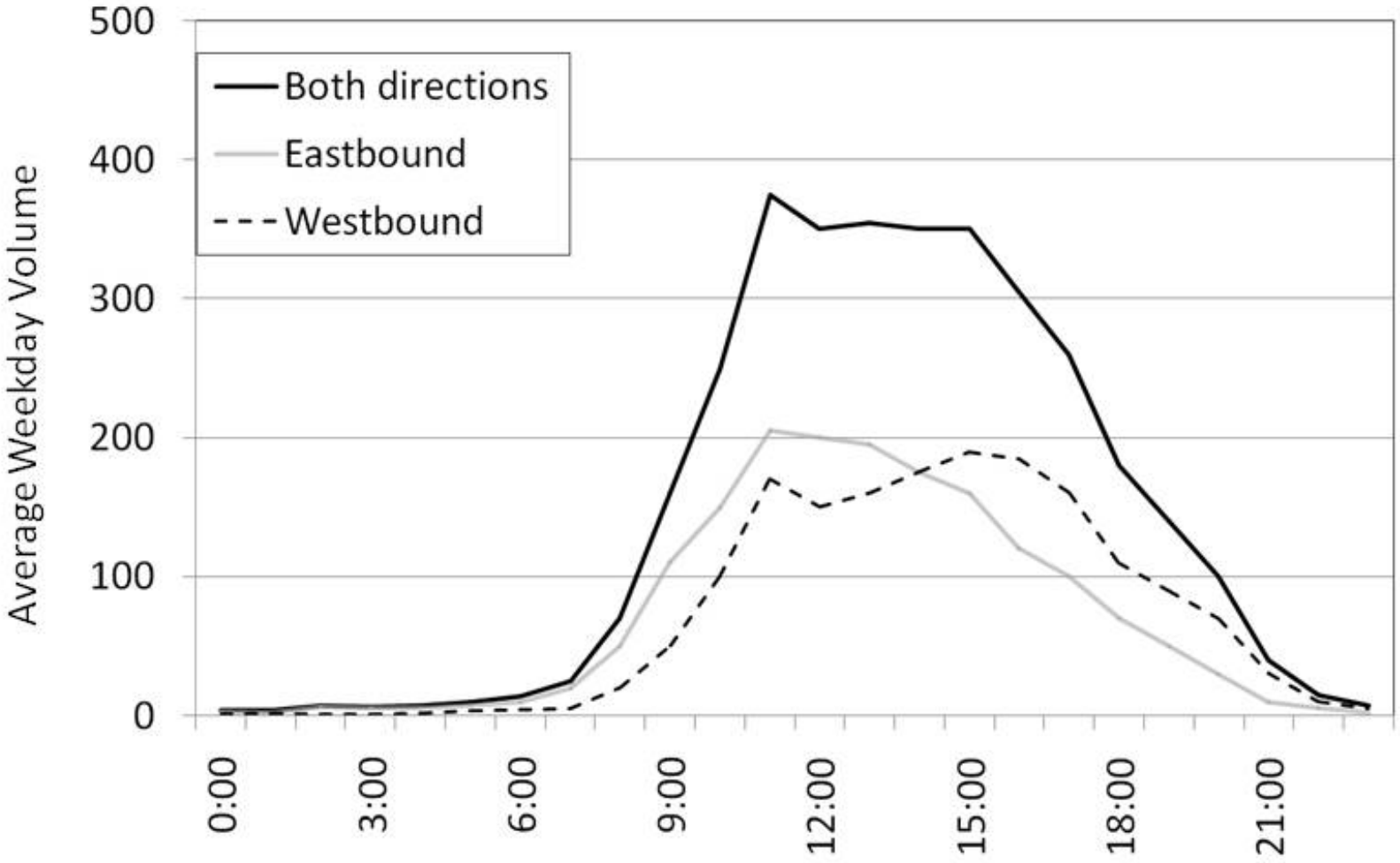
- Travelers
  - Rural permanent residents
  - Seasonal workforce commuters
  - Metropolitan visitors
- Commonly >50% of travelers visiting the area for the first time
- Expectation of vacation-quality service
- Fascination with spectacles
  - Wildlife
  - Waterfalls
  - Fireworks
- Unusual peak activity depending on location and resource
  - Summer (or winter)
  - Weekends
  - Meal times
  - Sunset

Area Resources Characterizing Seasonal Peaks



Source: Data from U.S. National Park Service Traffic Counts, 2013.

Daily Traffic Peaking
Going-to-the-Sun Road
Glacier National Park, 2001



Atypical Destinations

- Destination: cruise ship
- Leaf watching
- Tethering 500’ from the road with informal parking
- Destined for another mode
  - River floating
  - Train
  - Horse
  - Boat
  - Ski
  - Parachute

Bottom image source: Gail Frederick via Flickr Creative Commons 2.0

Informal Parking

Travel Demand Management: Strategies for Mount Hood, Oregon

Strategy	Priority
Develop a Transportation Management Association or other organization to coordinate transit and TDM programs	High
Transportation System Management and Intelligent Transportation Systems	High
Increase and extend existing public transit	High
Increase and extend existing private transit	Medium/Low
Advertise and improve carpooling information sites	High/Medium
Create a "one stop" Mt. Hood traveler webpage with dynamic information on parking, weather, road conditions, travel time, and available transit	High
Increase cell phone coverage on the mountain	High

SERVICE PROVISION

What are the National Park Service systems?

Transit systems = bus, trolley, tram, rail transportation; stops; loading areas; routes; maintenance facilities

Water systems = waterways, boat transportation, loading areas, maintenance facilities

On-road systems = roads, bridges, parking lots, lighting, signage, traveler information, entry gates, etc.

Aviation = air transport, runways, maintenance facilities, loading areas, air tour management

Non-motorized systems = trails, pedestrians, bicycles, horses, pack animals, way-finding, etc.

Vehicles Adapted to
Area Resources and Tourism Demand

Early Example: 1937 Fleet

Glacier National Park

Charrette-Derived Specifications

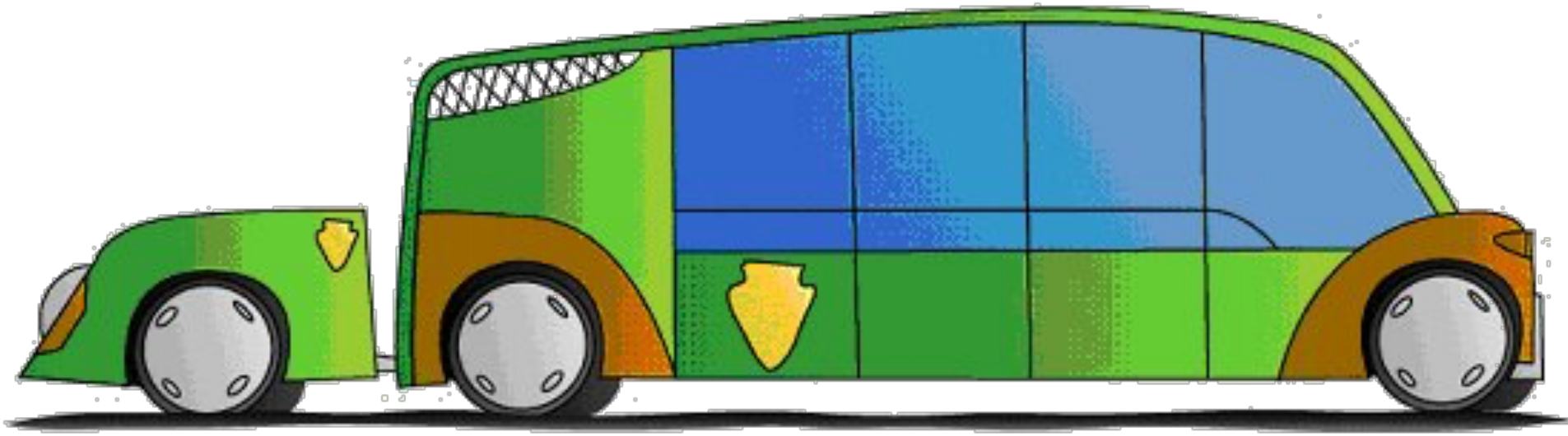
Considerations

- Purpose of transit
- Use requirements
  - Terrain
    - Mountainous
    - Moderate
    - Coastal
    - Desert and valley
    - Urban and public roads
  - Propulsion
    - Requirements
    - Considerations
    - Options
- User requirements
  - Driver's components
  - Passenger requirements
    - Seating
    - Amenities
    - Equipment
- Park resource objectives
- Vehicle procurement requirements

Design elements

- Physical components
  - Vehicle dynamics
  - Interior panels and finishes
  - Interior features
  - Exterior features
  - Passenger seating
  - Wheelchair accessibility
  - Windows
  - Heating, ventilation, and air conditioning (HVAC)
- Fare collection
- System requirements
  - Security
  - Safety
- Signing and communication
- Intelligent transportation systems

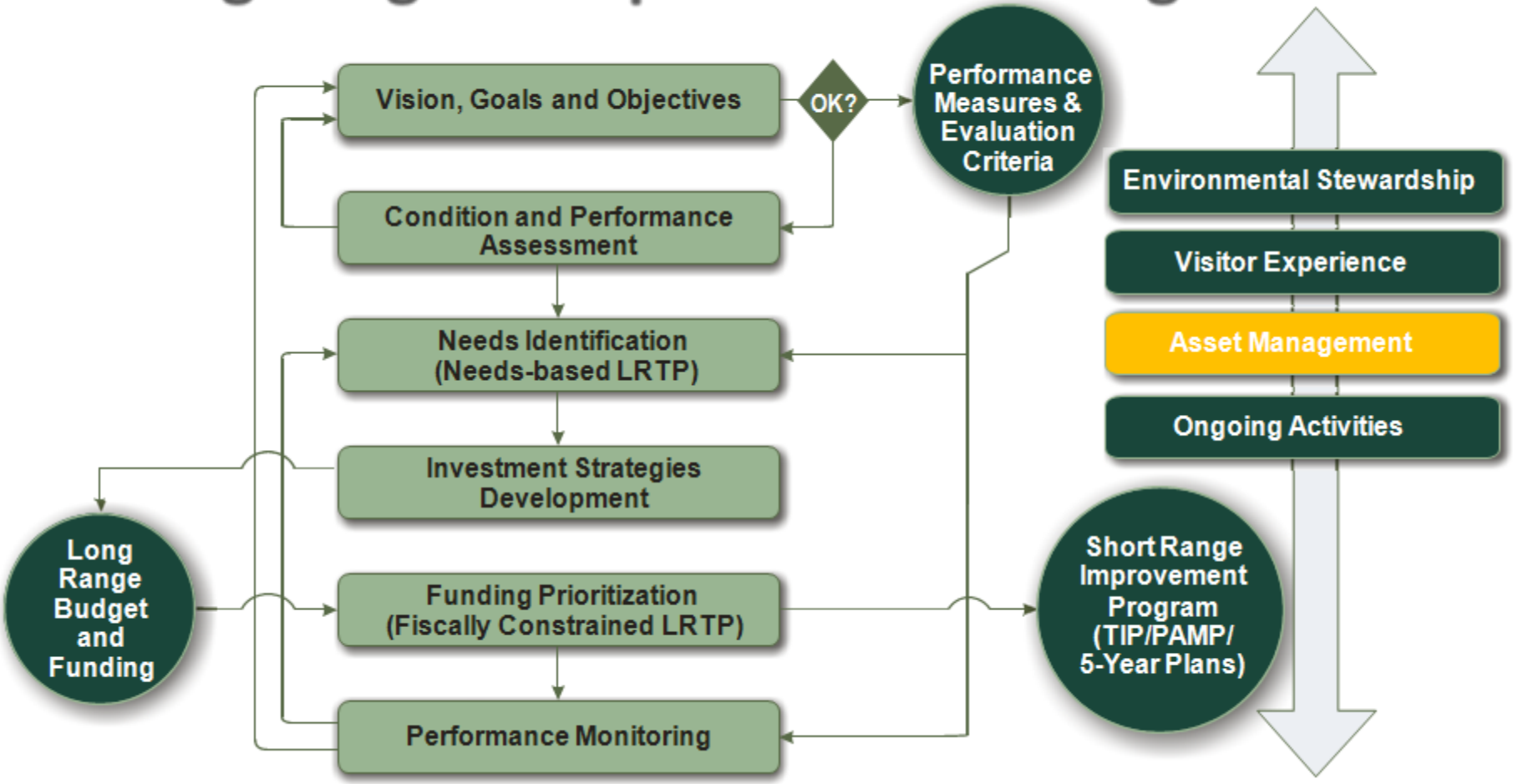
A Bus Designed by a Committee



In Tangible Form

PLANNING FOR RECREATIONAL TRANSPORTATION

National Park Service
Long Range Transportation Planning Process



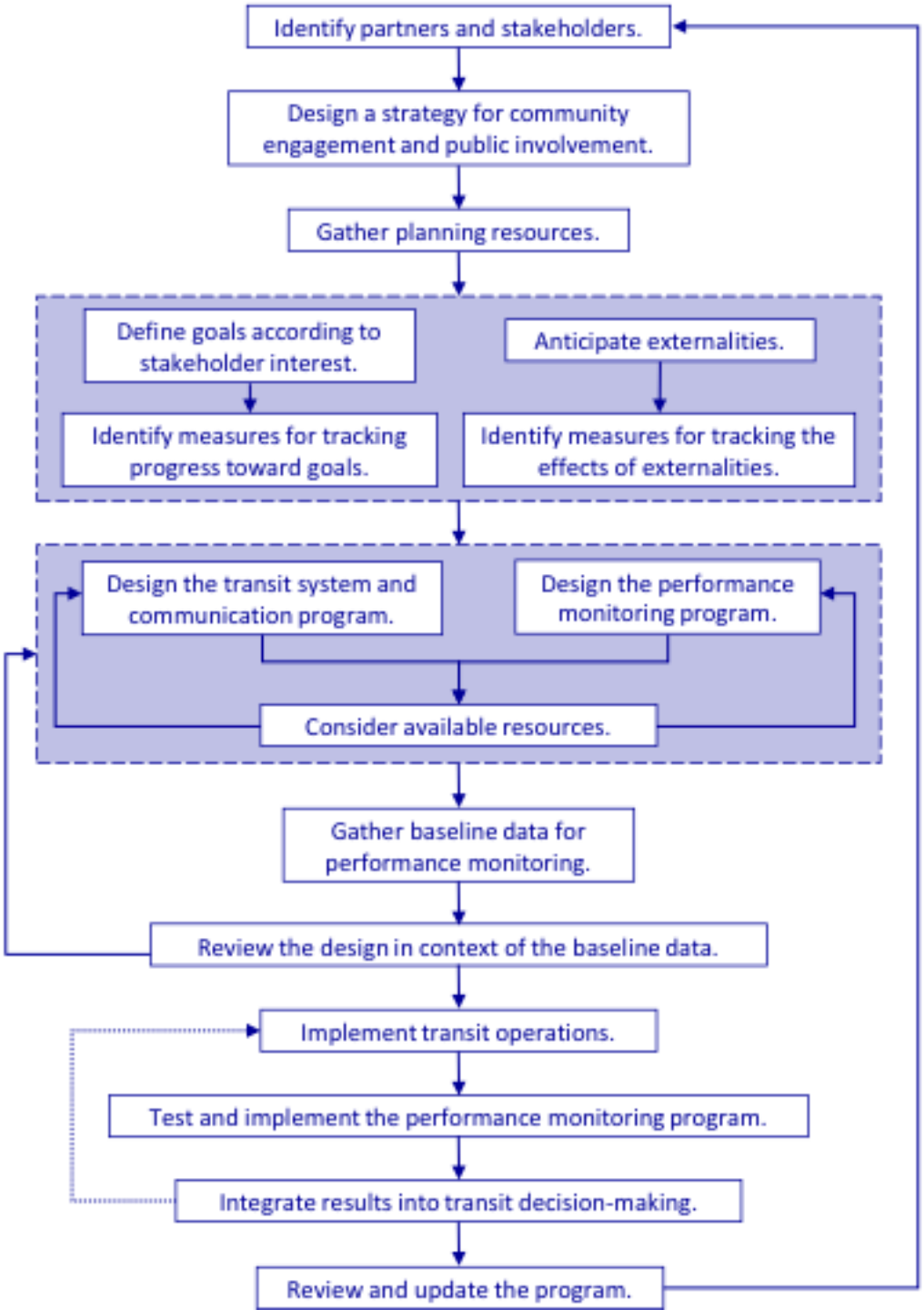
Best Practice – Performance Measures

Pikes Peak Area Council of Governments Performance-Based MPO Long-Range Transportation Planning Process

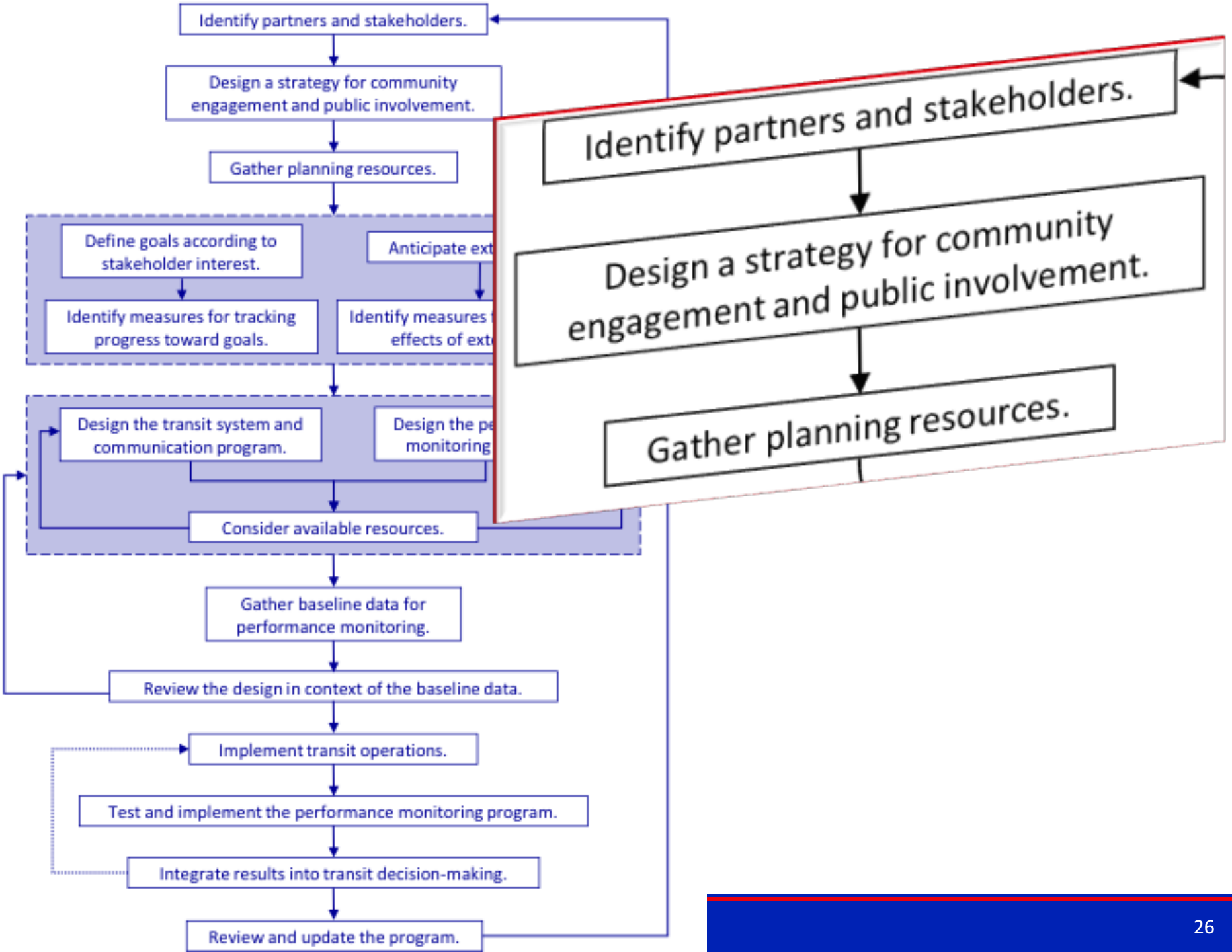
- SMART Goals
  - **S**pecific
  - **M**easurable
  - **A**chievable
  - **R**ealistic
  - **T**imely
- Benefit-Cost Analysis Component
- Specific short-term, interim and long-range goals (e.g. percent reduction in GHG)

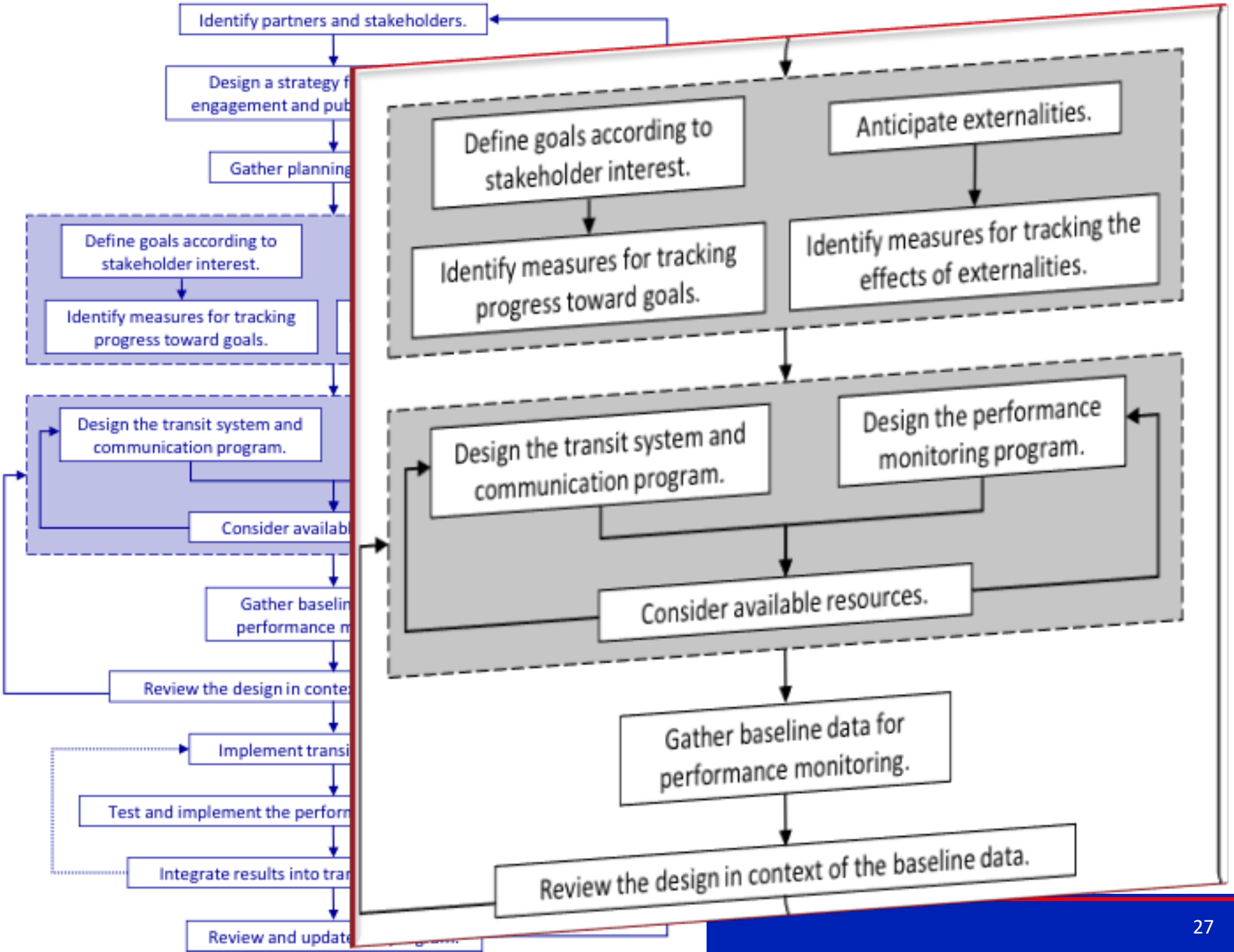
Policies Affecting Recreational Transportation

Agency	Policy
State or local departments of transportation	• Parking policies • Modal infrastructure development • Traffic signal preference for buses • Communications policies
Chambers of commerce or visitors' bureaus	• Discounted membership for businesses advertising or encouraging recommended transportation options • Training and education programs for seasonal workers • Transportation information dissemination • Communication policies
Transit operators	• Route design • Fare policies • Communication policies
Localities	• Zoning • Parking guidelines for businesses • Communications policies



Transit Planning Process


Identify partners and stakeholders.
Design a strategy for community engagement and public involvement.
Gather planning resources.
Define goals according to stakeholder interest.
Anticipate ext
Identify measures for tracking progress toward goals.
Identify measures
effects of ext
Design the transit system and communication program.
Design the pe
monitoring
Consider available resources.
Gather baseline data for performance monitoring.
Review the design in context of the baseline data.
Implement transit operations.
Test and implement the performance monitoring program.
Integrate results into transit decision-making.
Review and update the program.
Identify partners and stakeholders.
Design a strategy for community engagement and public involvement.
Gather planning resources.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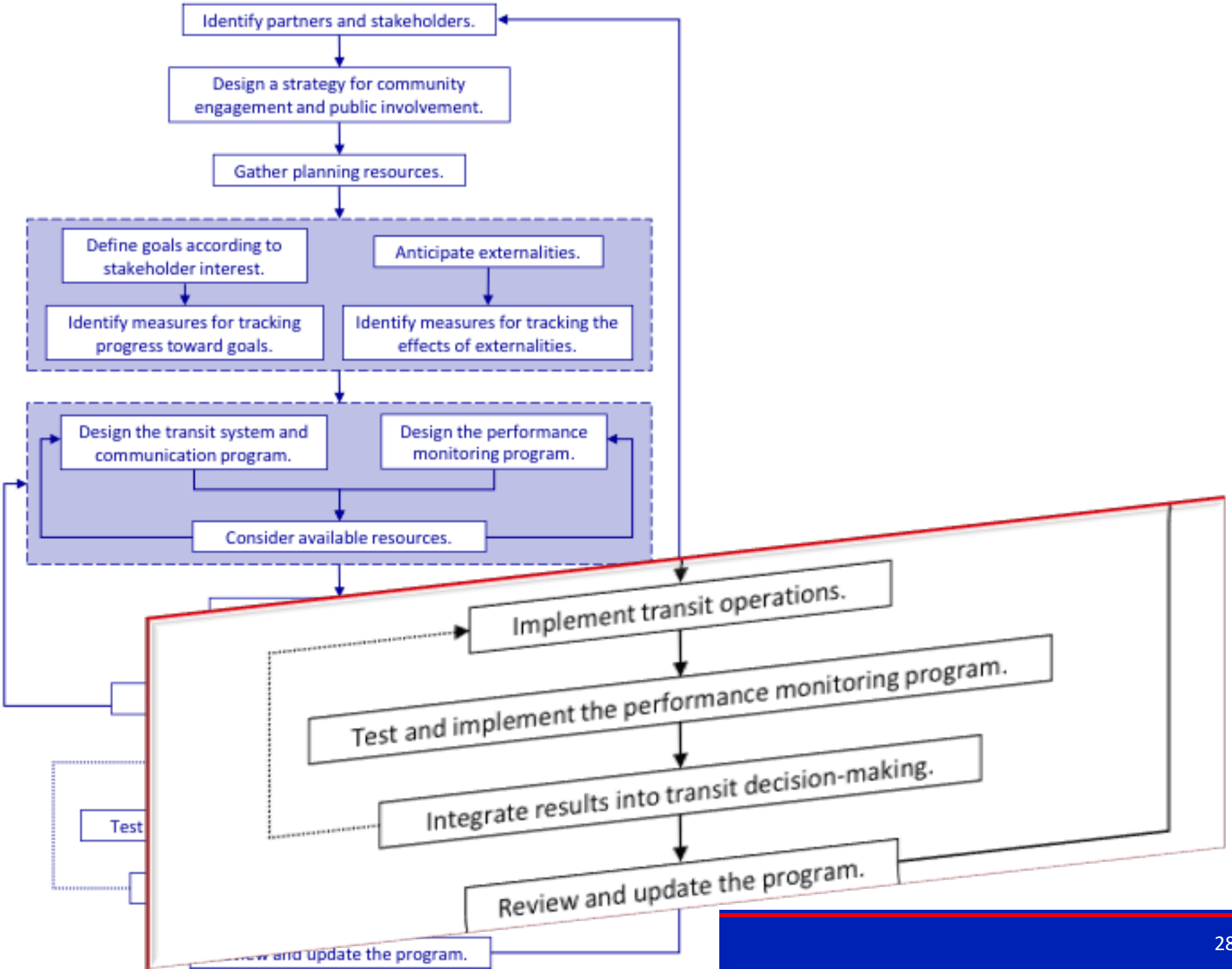
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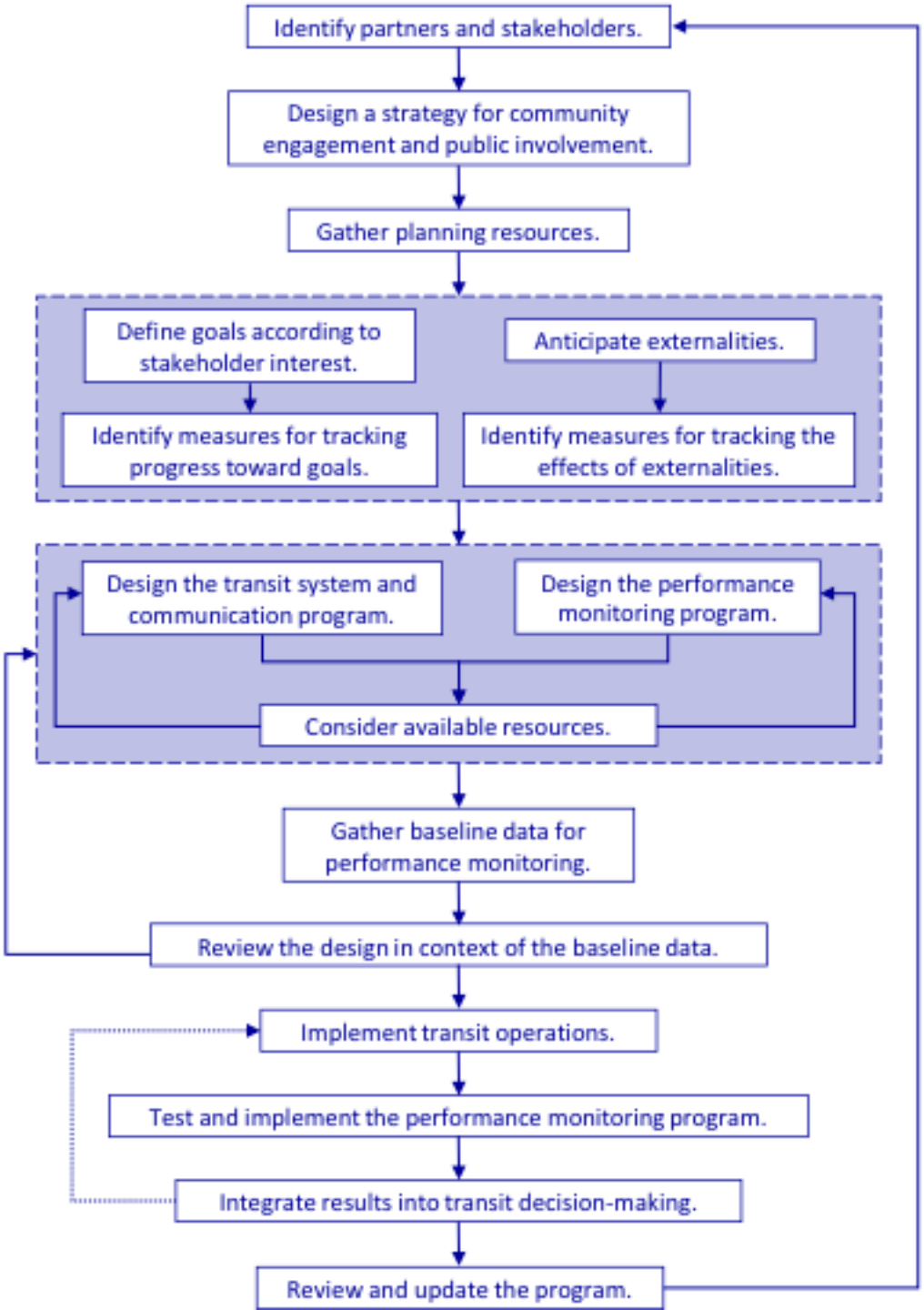

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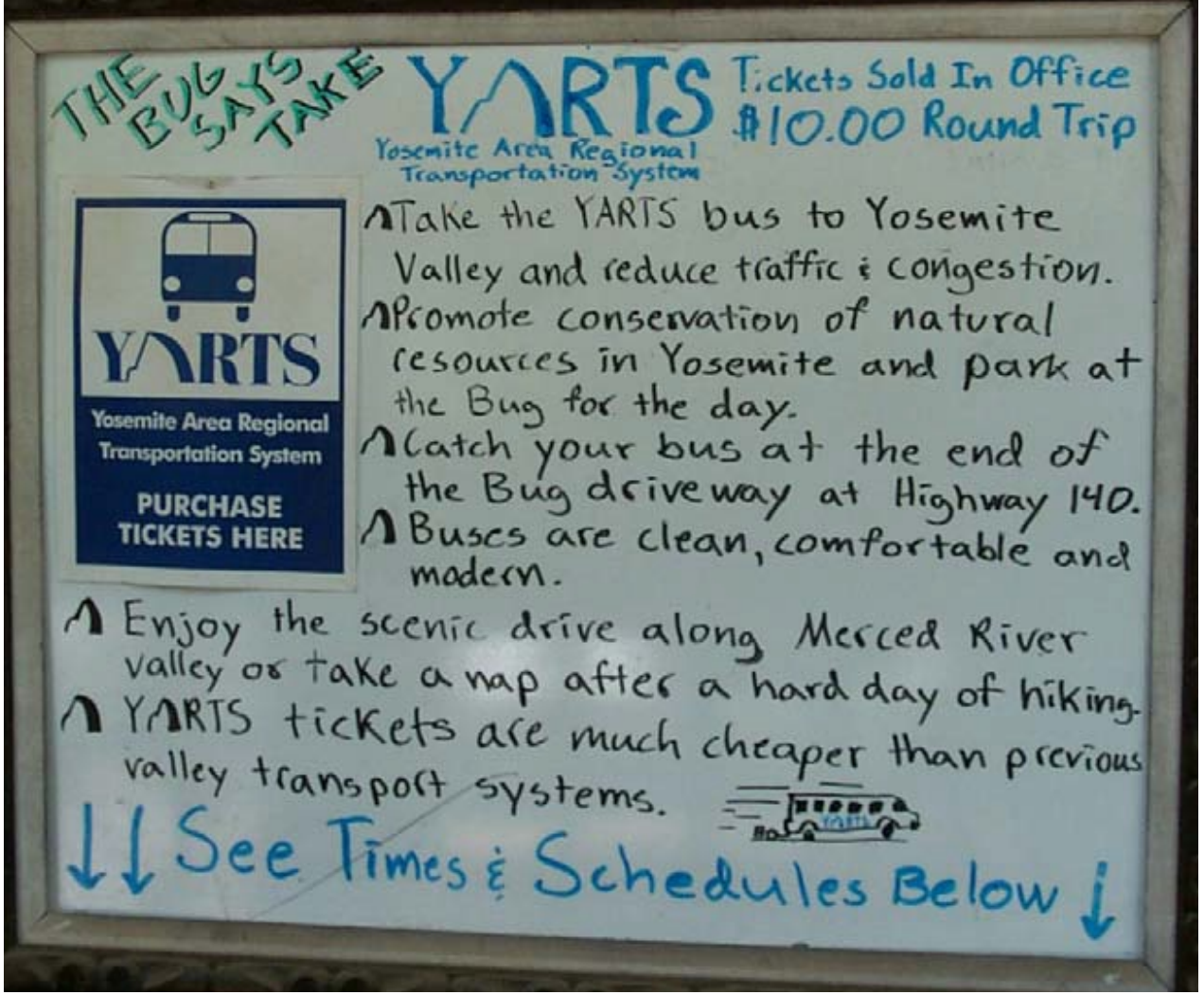


The most underestimated aspect of planning:

COMMUNICATION

Choosing the in-Town Route

Front-line seasonal workers shape traveler decisions.

Sense of Direction:

Stop Orientation

Stops that pointed buses in the direction of travel guided and comforted visitors.

The loop at the visitor center confused and stressed visitors.

Sense of Direction: Route Orientation

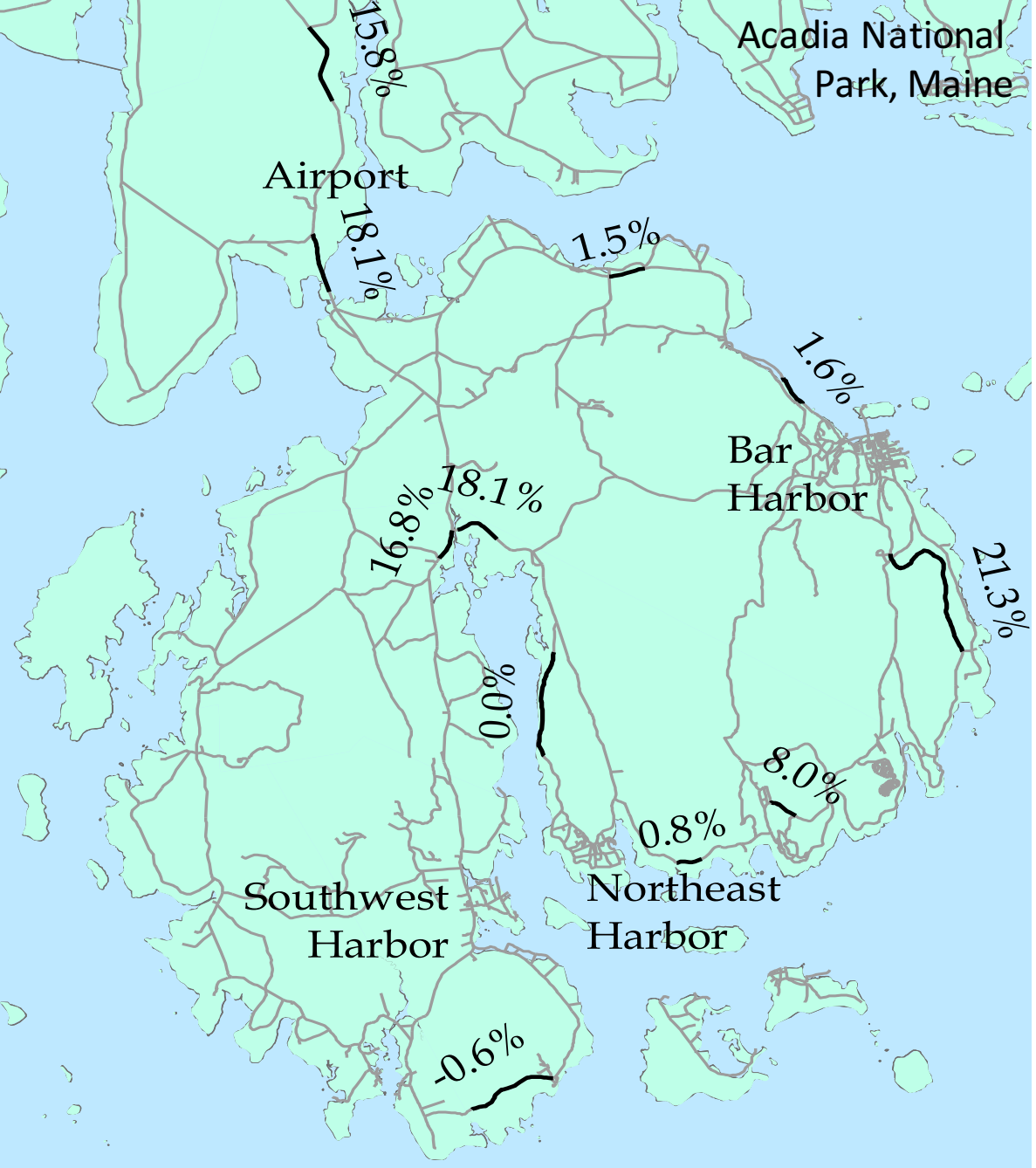
Routes that went in two directions confused visitors.

Ending all routes at the hub solved the problem.

Intelligent Transportation Systems (ITS)

- ITS helped 80% of surveyed riders decide to ride.
- ITS information saved time for 80% of surveyed riders.
- ITS users stayed longer than non-users (causality unclear).

Daigle, John and Zimmerman, Carol. *Acadia National Park ITS Field Operational Test: Visitor Survey*, prepared by Battelle for the U.S. Department of Transportation ITS Joint Program Office, Feb 10, 2003.



Needed Public Education:

Impacts of Congestion Mitigation

Averting a traffic increase 1995-2001 by introducing transit (Acadia)

Displacing traffic problems by introducing transit (pedestrian fatalities outside Denali)

Conclusion

- Recreational travelers are:
  - Distracted by attractions (a.k.a. attracted by distractions)
  - Unfamiliar with local geography and transportation systems
  - Traveling according to leisure peak demand
  - Expecting vacation-quality transportation experiences
- Recreational areas face:
  - Metropolitan-scale traffic congestion out of scale with resources available from the local permanent population
  - Modes options and mode characteristics with quirks suitable to local character
  - Heightened consideration for protecting natural and cultural resources
- Planning processes need to engage (educate and listen to) stakeholders. Many already feel heavily invested in local stewardship and want to help.
- Communication is quintessential, yet vastly underestimated and under-attended.