

# Integrating Climate Change Mitigation into Glacier's Environmental Management System

A scenic view of a mountain range with a turquoise lake in the foreground and snow-capped peaks in the background. The mountains are rugged and rocky, with patches of snow and glaciers. The foreground is a dense forest of evergreen trees, and a small waterfall is visible on the right side of the image.

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Crown of the Continent  
Research Learning Center

# Climate Friendly Parks: From Knowledge to Action

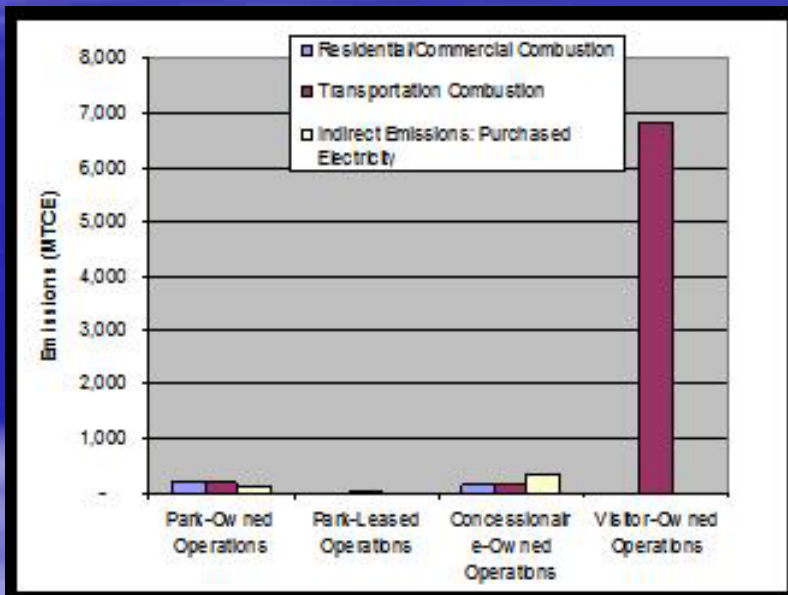
A joint EPA/NPS

Workshop, December 9-10, 2003

## Workshop Goals:

- *Educate park employees and partners about climate change and impacts to park resources*
- *Demonstrate successes of existing environmentally sustainable programs*
- *Provide tangible steps toward new activities to reduce GHG emission and model green practices to other parks, agencies, and the public.*

# Summary of CO2 Emissions from Fossil Fuel Combustion at Glacier



Source Category	Emissions (MTCE)
	CO <sub>2</sub>
<b>Direct Emissions: Fuel Combustion</b>	<b>7,598</b>
<b>Residential/Commercial Combustion</b>	<b>350</b>
Park-Owned Operations	193
Park-Leased Operations	NA
Concessionaire-Owned Operations	157
Visitor-Owned Operations	NA
<b>Transportation Combustion</b>	<b>7,248</b>
Park-Owned Operations	210
Park-Leased Operations	26
Concessionaire-Owned Operations	171
Visitor-Owned Operations	6,839
<b>Indirect Emissions: Purchased Electricity</b>	<b>496</b>
Park-Owned Operations	142
Park-Leased Operations	NA
Concessionaire-Owned Operations	354
Visitor-Owned Operations	NA
<b>TOTAL EMISSIONS</b>	<b>8,094</b>

# DIRECTOR'S ORDER #13A: ENVIRONMENTAL MANAGEMENT SYSTEMS - Effective Date: May 2, 2004

## PURPOSE and BACKGROUND

The NPS functions in a complex global environment unforeseen by the framers of the 1916 NPS Organic Act. NPS managers today must demonstrate an awareness and understanding of the interdependency of the ecosystems, resources, biodiversity, and aspects of human culture entrusted to our stewardship ....

NPS stewardship is defined by the resource protection ethic ... to prevent, avoid, or mitigate impacts that would compromise the integrity of park resources. It requires that park managers demonstrate environmental leadership by implementing sustainable practices in all aspects of management, and the active communication of these practices—along with their purposes and values—to park employees, visitors, partners, and stakeholders.

# Glacier's approach to environmental management

- Develop a “Green Team” to connect management directives with on the ground efforts
- Explicitly address climate change challenges and risks to national parks and Glacier
- Transportation alternatives for employees and visitors
- Energy efficient buildings
- Waste reduction
- Educate employees, partners, and public
- Model sustainable practices

# Transportation alternatives

## Employees – **Red Bikes**

- For travel among park buildings. Includes a trailer for delivering mail and other large objects.



# Transportation alternatives

Employees – **Red** and **Yellow** Buses

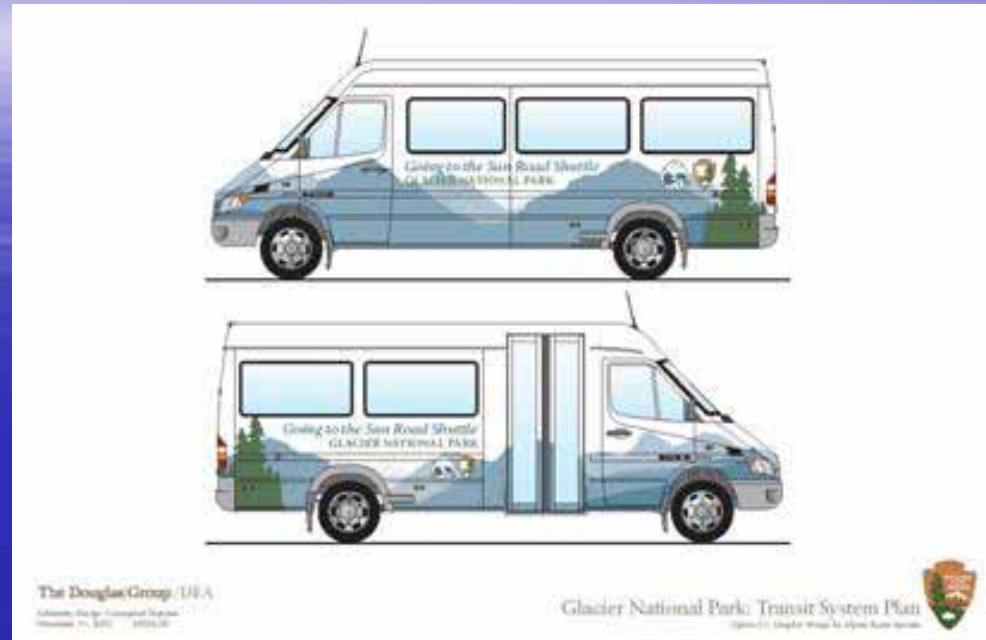
- For commuting to and from work. Operates daily along Highway 2 with 4 stops.



# Transportation alternatives

## Visitors – Going-to-the-Sun Road Rehabilitation Transit Vehicles

- For commuting to and from work. Operates daily along Highway 2 with 4 stops.



# Going-to-the-Sun Road Rehabilitation: Transit System

2007 Transit one route:

- Fish Creek to Logan Pass
- Combine Yellow and Red
- 15 minute headway

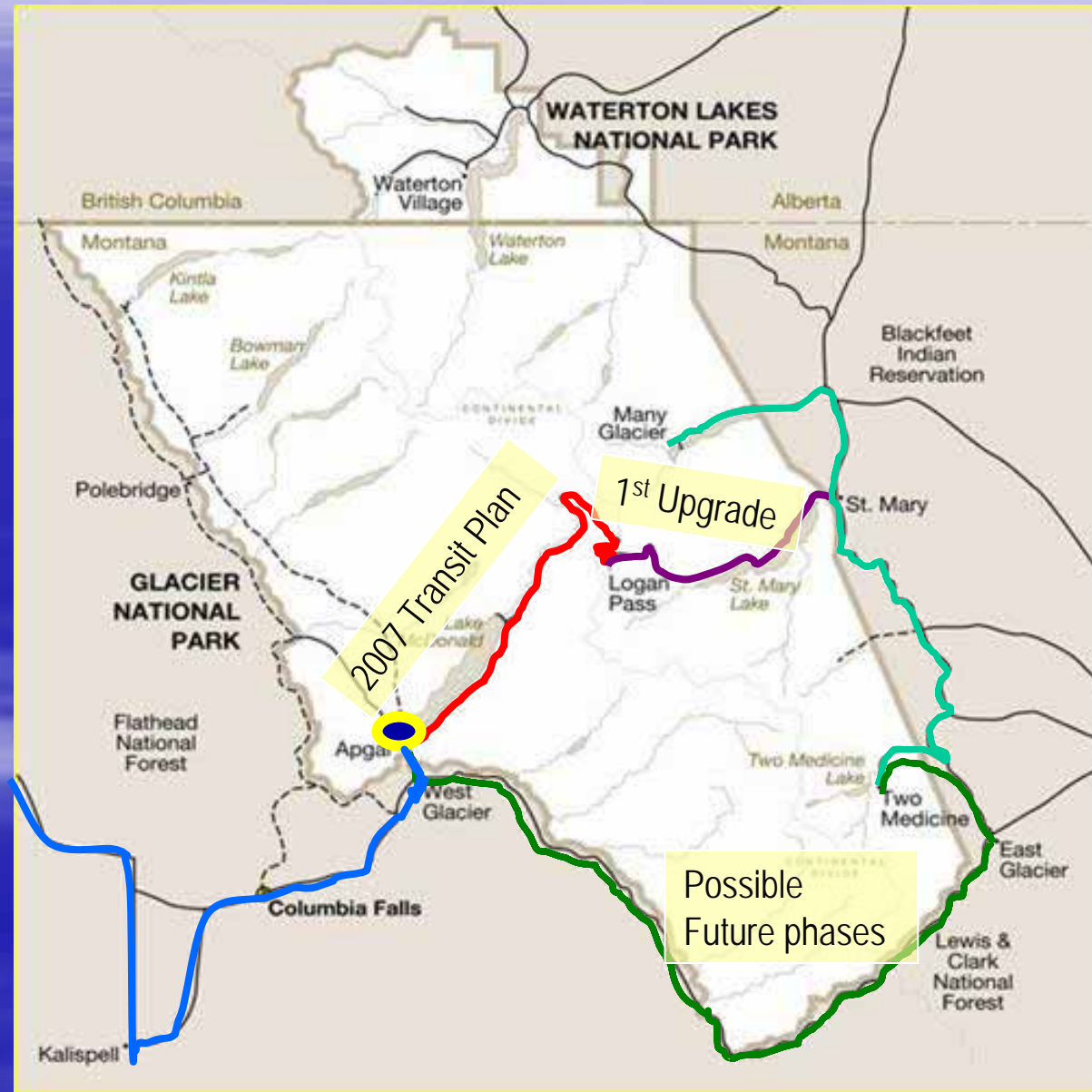
1st upgrade (07-08?) full  
GTSR coverage

- Red, Yellow, Purple
- Alpine & 30' buses
- Headways
  - Alpine 15
  - 30 min. Apgar & St. Mary

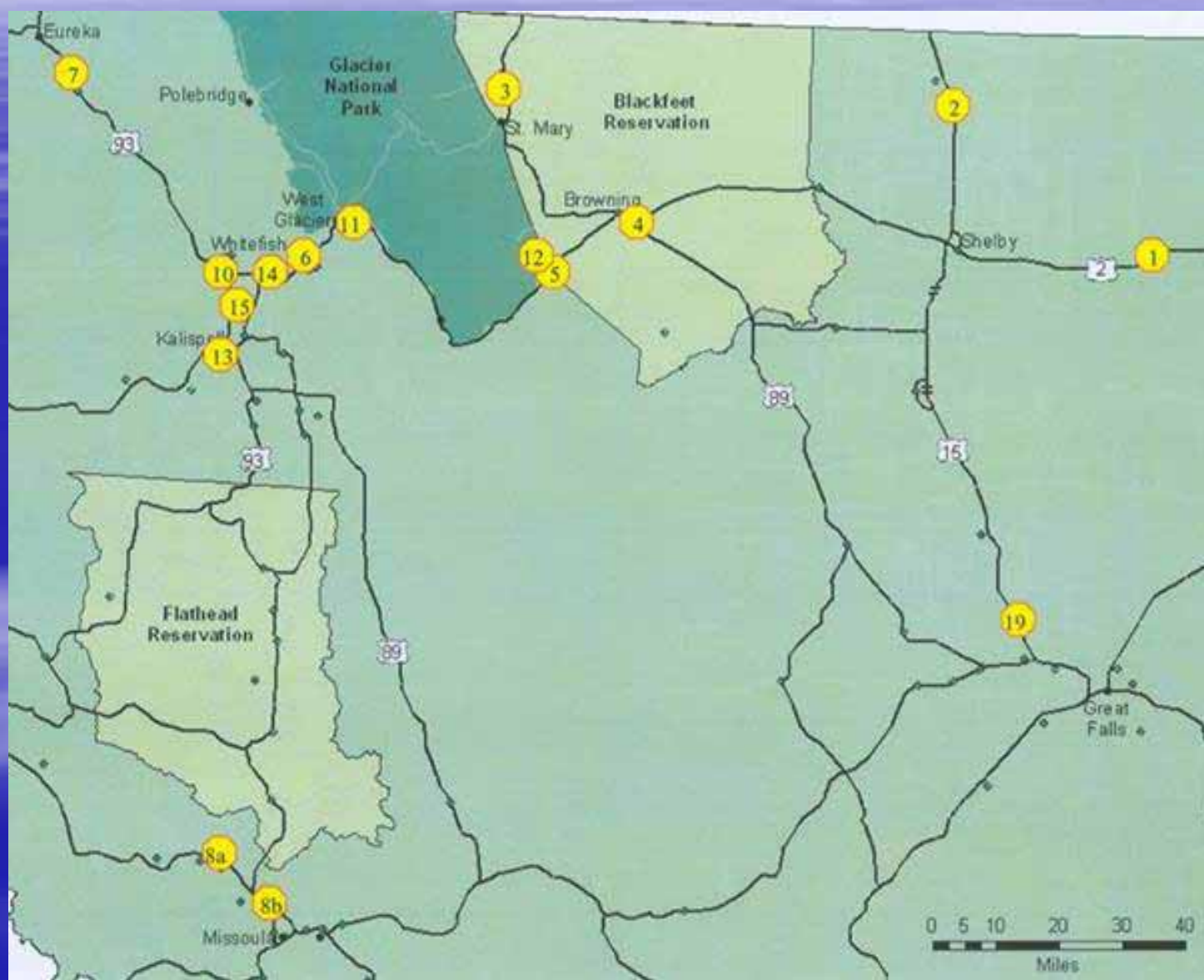
Seasonal Transit refinement  
adjust capacities as required

Outside the park feeder  
loops dependent on local  
initiatives and resources

- Green & blues



# Going-to-the-Sun Road Rehabilitation: links to the surrounding community



- Pursuing links between Glacier's shuttle system and community buses
- ITS driven, visitor information architecture outside the park

# Energy Efficient Buildings

- **Improve energy efficiency of existing buildings**
- **Commit to energy efficient, sustainable design on new construction and deconstruction projects**

# Going-to-the Sun Road Rehabilitation: Apgar Transit Center - Visitor, Transit & ITS hub

**Gold LEED rating**



# Going-to-the-Sun Road Mitigation 2006: Apgar Transit Center (ATC) Site Preparation



- Transit center on track to achieve Leadership in Energy & Environmental Design (LEED) certification
- Other recycling initiatives during and post construction will result in a lower impact to resources and more efficient facility

- Plant salvage with help from Montana Conservation Corps



# Waste Reduction

## Recycling Program

- To reduce solid waste generated by park and increase cooperation with concessioners and other partners



# Education

Park employees,  
partners, and public

- Annual training
- Interpretive resources and products
- Ongoing communication of research efforts
- Waysides and site bulletins

