

Glacier National Park: Going-to-the-Sun Road Rehabilitation



Using ITS to stretch resources, manage congestion and sustain visitation

...During the Going-to-the-Sun Road Reconstruction



National Rural ITS Conference

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GTSR Reconstruction: Using ITS to support construction, stretch resources and sustain visitation



Agenda

- **Project Update**
- **Mitigation Concept to include ITS concept and functional components**
 - **Construction including work zone ITS**
 - **Transit including Transit ITS**
 - **Tailoring ITS to provide information to visitors**
 - **Transit and ITS hub update**
- **Discussion and Questions**

Going-to-the-Sun Road Rehabilitation 2007 and Beyond: summary



- **2007 Construction** will begin between the Loop and Haystack and recent funding confirmation reassures sequencing the next several phases of work
- **Mitigation** to be operational to support Phase VI – spring 2007
- **2007 Mitigation effort** will include the Apgar Transit Center, Transit Visitor Information
- **System improvements and refinement** will continue as construction progresses

Going-to-the-Sun Road 2007: Intelligent Transportation System (ITS)

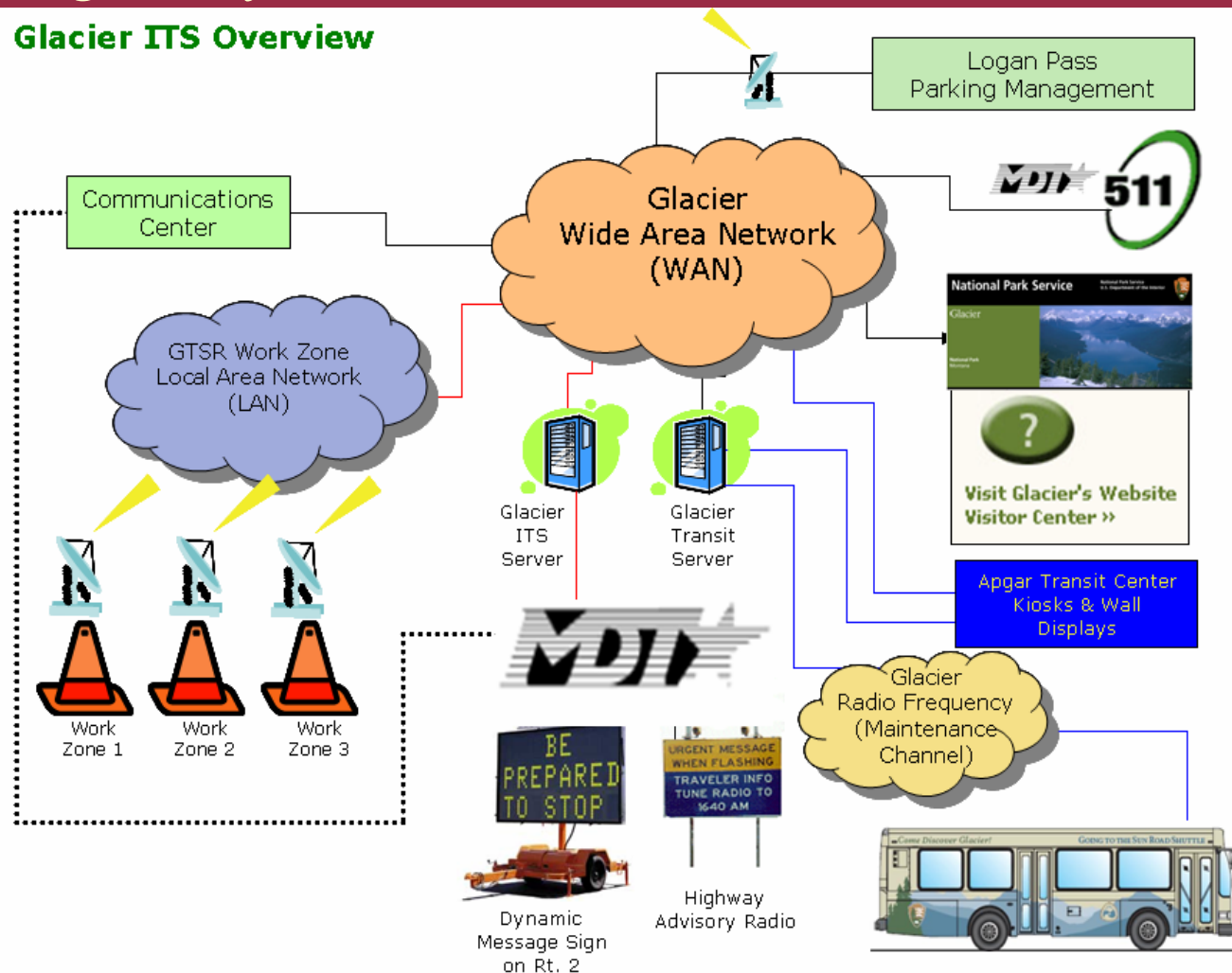


Providing timely and coordinated information from work zone to park operations, gateway communities and visitors

Primary functional areas

- Work zones
- Transit system
- Apgar and St Mary Transit Centers
- Traffic Management, operations & safety
- Gateway Communities & Visitors

Glacier ITS Overview



Going-to-the-Sun Road: ITS in the Work Zones



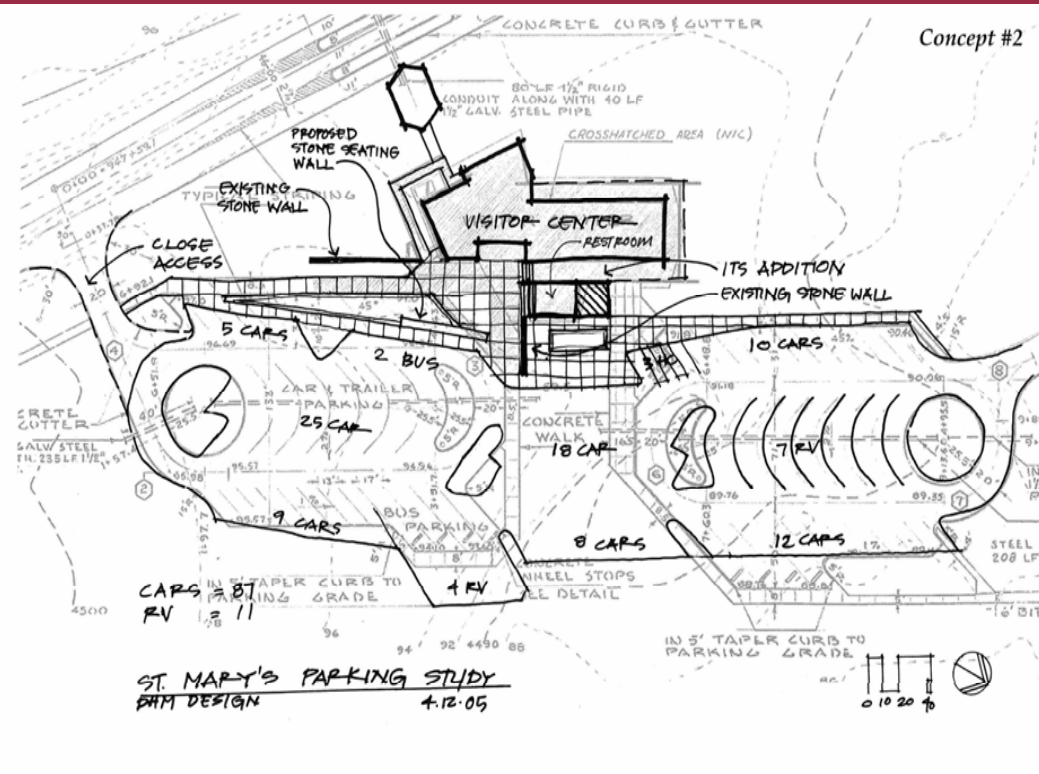
- **Functions**

- **Validate key wireless links and leverage existing digital communications infrastructure for work zone (WZ) and road linkages to ITS hub**
- **Integrate WZ components into normal traffic control**
- **Provide timely voice, video and emergency linkage from the WZs to the hubs**

- **Components**

- **Wireless communications network**
- **Smart signals**
- **Traffic Monitoring**
- **Audio and video feeds to hubs**

Going-to-the-Sun Road: Upgrading the Entrance Stations, & Transit Stops through ITS linkages



◀ St. Mary Visitor Center to Transit Center modifications to provide visitor information as well as road status

•Transit Stops information may be provided in the future

•West Glacier Entrance Station automated lane, visitor data collection, and improved signage including status updates

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



Phase I (07):

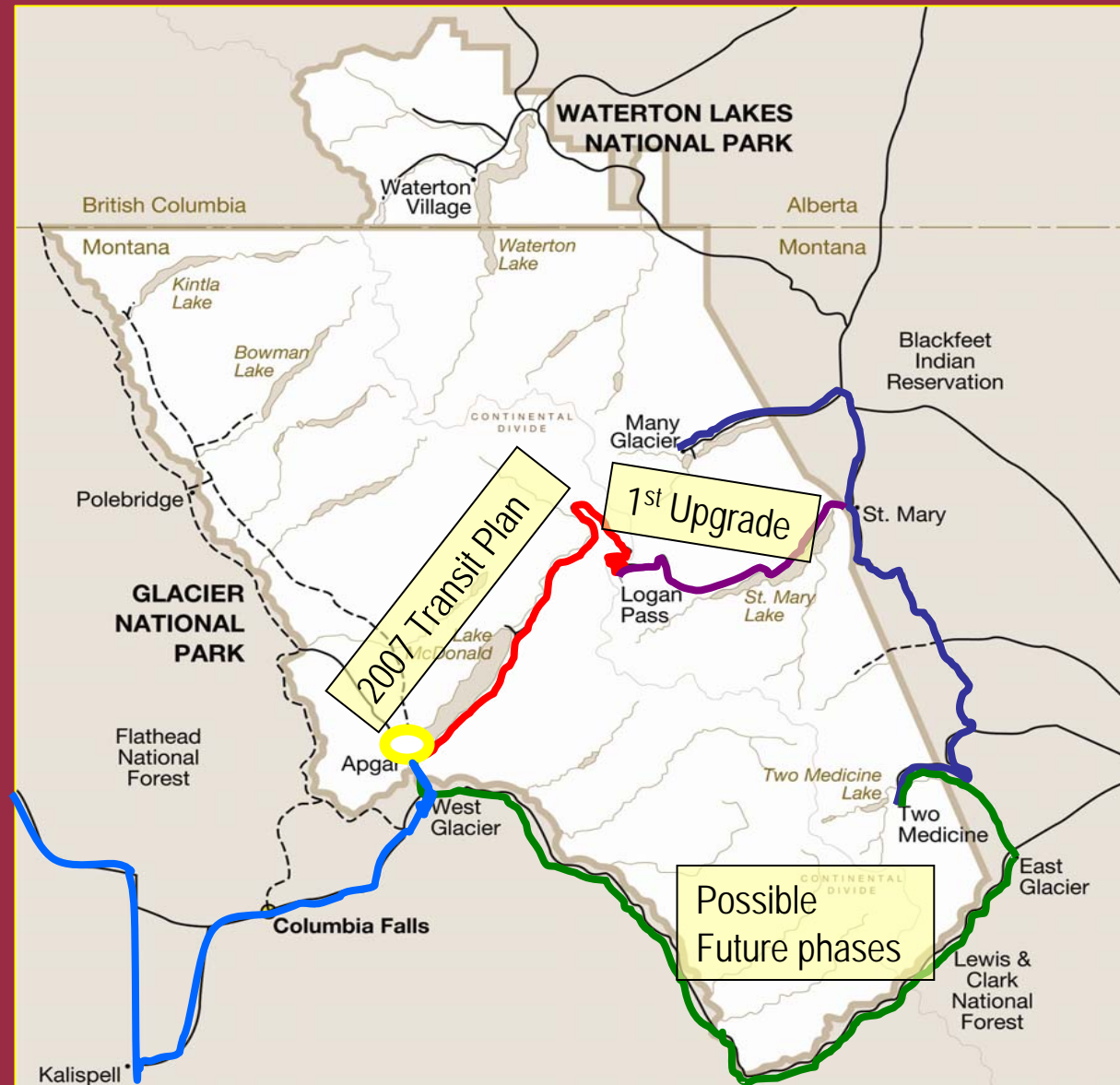
- Fish Creek to Logan Pass
- 15 minute headway
- Adjust existing hiker shuttle to support east side locations

Phase II (08):

- Full GTSR coverage
- Alpine & 30 foot buses
- Headways
 - Alpine, 15 minute
 - 30 foot buses, 30 minute

Outside the park transit to grow as local requirements grow

- Green & blues



Going-to-the-Sun Road Mitigation: Transit Vehicles



Alpine Route (2007)

- Dodge / Daimler - Chrysler Sprinter
- Medium Duty, 7 year life
- 22' L x 78" W x 103" H
- 12-passenger
- ADA rear lift
- Bio-diesel

The Douglas Group/DEA
Schematic Design Conceptual Sketches
November 11, 2005 25056.00

Glacier National Park: Transit System Plan
Option C1: Graphic Wraps for Alpine Route Sprinter



Other Routes (2007 (+))

- Gillig or Optima
- Heavy Duty Transit, 12 year life
- 30' L x 100-102" W x < 124" H
- 28-passengers, plus standees
- Low-Floor, ADA ramp
- Bio-diesel



Going-to-the-Sun Road Mitigation: Transit onboard ITS



Both Alpine and other buses to have common ITS support capabilities

• Functions

- Computer aided Dispatch
- Automatic Vehicle location
- Automatic Annunciator
- Automatic Passenger counting
- Radio

• Components

- Motorola XTL-5000
- Mobile Data Terminal
- Automatic Passenger counter
- Automatic Announcement
- Interior bus signs (30' buses may also have exterior signs)

Going-to-the-Sun Road Rehabilitation: Partnering to stretch funds and opportunities in several directions



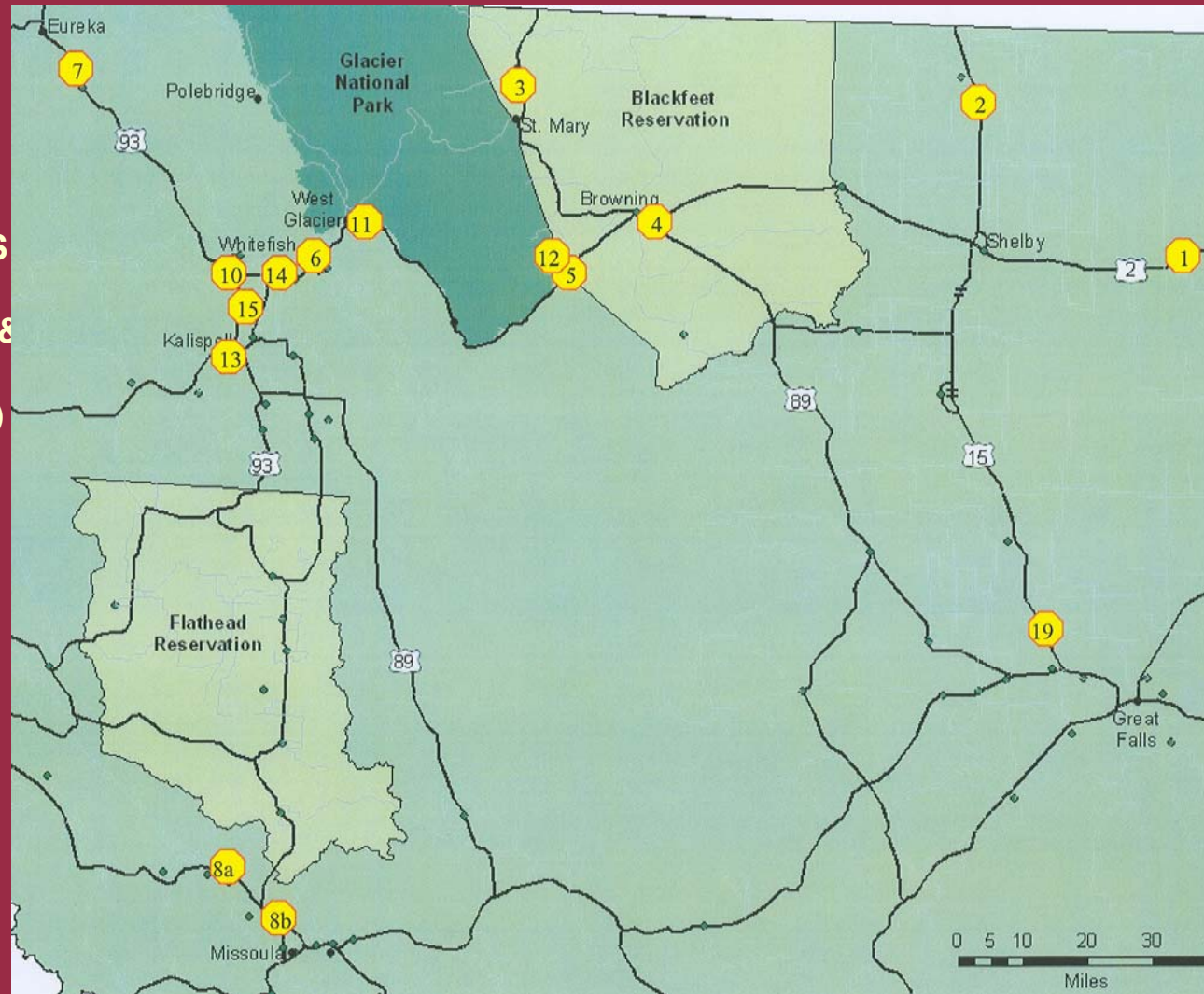
- **Tri-Party (NPS, Montana & Flathead County Cooperative Agreement:**
 - Further partnership with Blackfeet Transit being developed
 - Initial priority is meeting GTSR Rehabilitation requirement
- Off season uses must meet Federal Transit Administration (FTA) eligibility requirements, some candidates could be:
 - Flathead, Glacier Counties
 - Montana Universities
 - Meeting off season Montana requirements



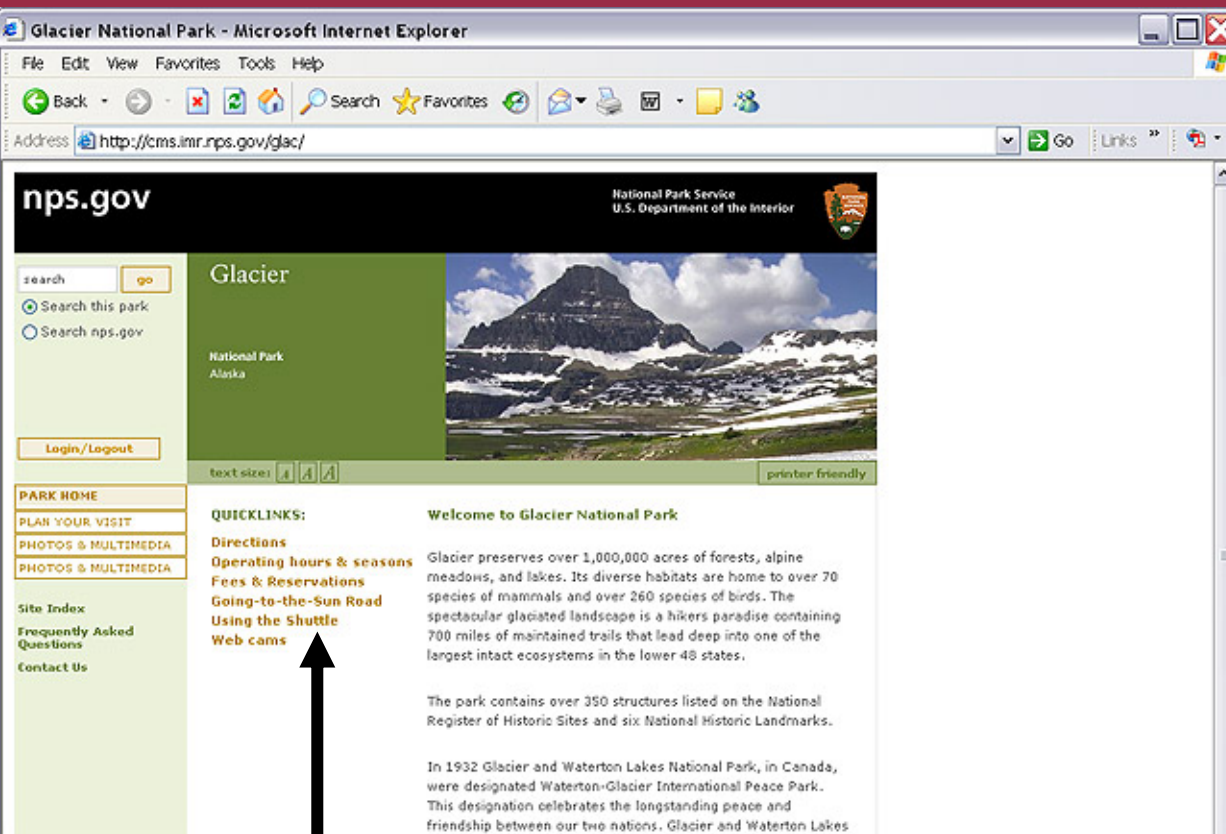
Going-to-the-Sun Road: Draft Visitor Information outside the park - a variety of modes tailored to locations



- 1) Bear Paw Battlefield National Monument Web Kiosk (new)
- 2) I-15 Sweet Grass Visitor Center web kiosk (new)
- 3) Babb (HWY-89) DMS w/ HAR (both new)
- 4) Browning (HWY 2 & 89 Int.) DMS & HAR (new)
- 5) East Glacier (HWY 2 & 49) DMS & HAR (new)
- 6) Columbia Heights (Hwy 2 & 206) DMS & HAR (new)
- 7) Eureka (93) DMS (new)
- 8a/b) Missoula (Hwy 90 E & W of Hwy. 93 turn off) DMS & HAR (both new?)
- 9) Great Falls (I-15N) DMS & HAR (both new?)
- 10-12) Whitefish, West Glacier, & East Glacier Amtrak (new Kiosks)
- 13-14) Kalispell & Columbia Falls Chamber of Commerce Sites (new Kiosks)
- 15) Kalispell Glacier Airport (new Kiosks)



Going-to-the-Sun Road Mitigation: Glacier Web site (www.nps.gov/glac)



Enabling Visitors:

- 1) World-wide trip planning
- 2) Local, real-time updates
- 3) A variety of information to ensure visitors continue to come to Glacier
- 4) Enhancing their visit when they arrive

- Quick Links on the Home Page
- Trip Planning
- Going-to-the Sun Road Project
- Using the Shuttle and other information tools
- Park and Road History

Going-to-the-Sun Road Mitigation: Using ITS to Communicate to the Public



Going-to-the-Sun Road



Enjoy unparalleled mountain vistas like this view of the east tunnel and Going-to-the-Sun Road Mountain, just one of many engineering marvels on this National Historic Landmark.

Results of planning and citizen involvement

After years of planning and public involvement, the Going-to-the-Sun Road is receiving much-needed improvements. Road rehabilitation began in 1988, but work in the alpine area continues.

During the summer (mid-June to mid-September) expect short delays while 'shared use' of the road is maintained. A one-way trip across the entire road should take a minimum of two (2) hours.

One-way trip schedule (Mid-June to Mid-Sept.):

- Weather and road conditions permitting, the entire 50-mile road is open for two-way motorized traffic
- During peak travel hours (10 a.m. – 3 p.m.) delays will be kept to a maximum of 30 minutes
- Before and after peak travel hours (8 – 10 a.m. and 3 – 8 p.m.) up to 1-hour delays may occur

Mid-Sept. to Mid-June schedule:

To allow accelerated road work during shoulder and winter seasons, the following schedules apply:

- Portions of the alpine road may not be open for motorized vehicles
- Logan Pass will be accessible for vehicles from at least one side, except when closed to motorized vehicle use because of weather
- Non-motorized access will be allowed on segments that are not open for motorized vehicle traffic when weather permits

New Services Coming in 2007



Going-to-the-Sun Road Shuttle



Apgar Transit Center

Learn more about the Going-to-the-Sun Road from any of the following places:

Throughout Montana, dial 511:
Select option '5' for 'Glacier Tourist Information'



Check on-line:
www.nps.gov/glac/sunroad/whatsup.htm

Call park headquarters: 406-888-7800



- ITS sources provide accurate inputs to communications products
- Interim fact sheet – prior to results of messaging survey
- Flyers available in July:
 - Visitor centers lobbies
 - Area businesses in gateway communities
 - Hotels, resorts
- E-Blast map and new web page also being developed for 2006
- MT 511 is working well,
 - cost effective partnership with MT Department of Transportation
 - In state simply dial 511
 - Out of state callers dial 1-800-226-7623
 - Select option 5 for Glacier National Park road information

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

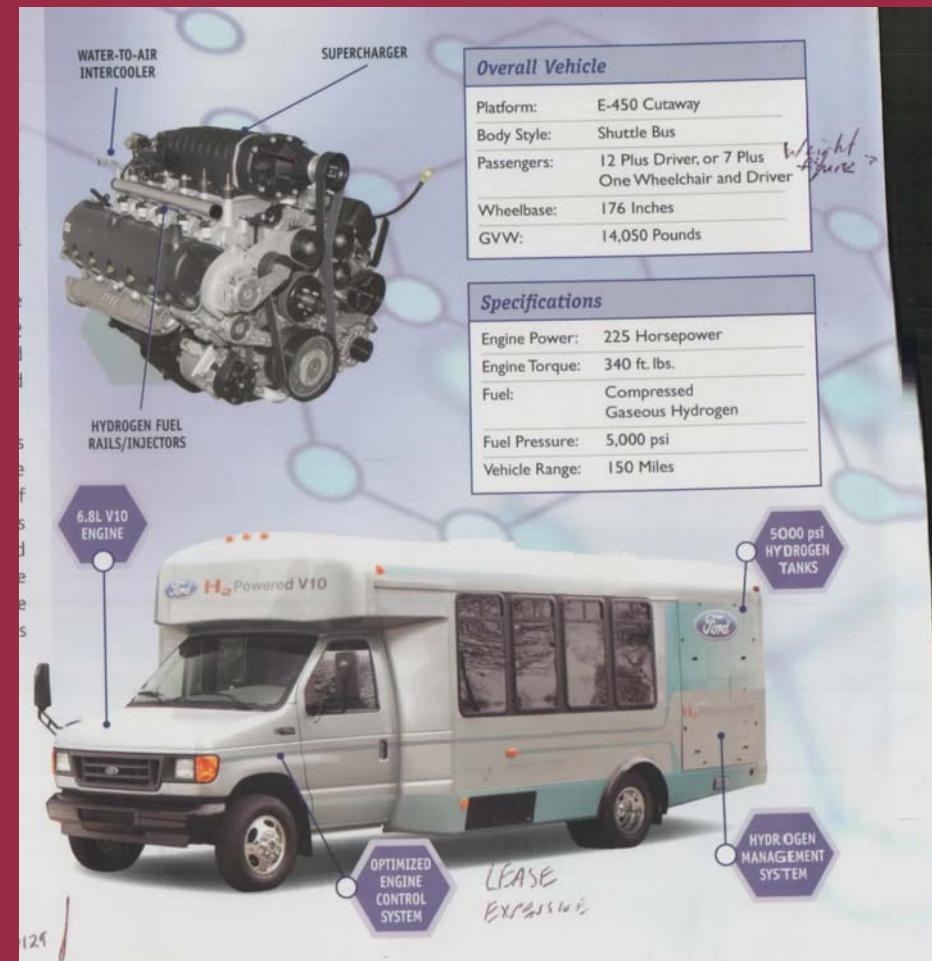


Glacier National Park 2015(+): Looking way ahead to after the rehab is complete



Value added for Glacier that meets Organic Act and Park General Management Plan goals

- Enhanced visitor experience and reduced resource impacts
- Continued Partnership initiatives, strengthened Gateway Community relationships
- Glacier and Montana as venues for leading edge low emissions demonstrations
- Lessons learned that become models for meeting other similar construction and congestion challenges across America



Current Ford Hydrogen Bus prototype

Going-to-the-Sun Road Rehab: Using ITS to stretch resources, remove congestion and sustain visitation



Discussion, Feedback, Questions?