

## Design Concepts Assessment

South Rim Canyon View Information Plaza & Mather Point





# Program

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**South Rim Canyon View Information Plaza & Mather Point  
Grand Canyon National Park**

April 4, 2008  
Prepared by DHM Design

**Program**

<b>TRANSPORTATION: PARKING</b>		<b>Number</b>	<b>Size/Width</b>	<b>Comments</b>
Vehicular Day Use		900 Total		3-bay parking lots, 192' wide 200 cars per pod (Phase I - 600 Vehicle spaces)
	Standard Automobile	820	9' x 18'	Informal layout desired, less than 5% slope preferred
	RV Parking Spaces (pull-through)	32	45' x 12'	
	RV Parking Spaces (back-out)	8	20' x 15'	
Accessible Parking Spaces				
	Standard Automobile	10	9' x 18'	Car - 5' wide isles, 1.75% grades or less
	Vans/Automobile	40	45' x 12'	Van - 12' wide isles, 1.75% grades or less
	RVs	10	20' x 15'	1.75% grade or less
Tour Bus Parking		40	45' x 15'	Pull-through spaces (Phase 1 - 20 spaces). Drop off near rim - within 400' walking distance. 110 vegetative buffer to minimize impact to soundscape.
Employee Parking		15	9' x 18'	Located north of existing visitor center.
Emergency Vehicles, Administration and/or Ranger				Emergency vehicles will utilize the shuttle bus stop and the parking area adjacent to the proposed bike facility.
<b>TRANSPORTATION: ROADS AND DRIVES</b>		<b>Size/Width</b>	<b>Comments</b>	
Re-aligned South Entry Road				
	Design Speed			Lower design speed to 25 mph
	Drive Lanes	12' Wide		
	Left Turn Lanes	11' Wide		Stacking distance is 100 feet.
	Shoulder	2' to 4' wide (both sides)		
	Inside Turning Radius-cars	35' R		
	Inside Turning Radius - tour and shuttle buses	40' R		
	Horizontal Curves	350' R		Suggested Radius for 25mph design speed.
Parking Lot Bays				
	2-bay lots	140' wide		Two-way system with 24' wide drive lanes, incorporates RV parking.
	3-bay lots	192' wide		Two-way system with 24' wide drive lanes, incorporates RV parking.
Drop-off Areas				
	Shuttle Buses	30' inside turning radius minimum.		Accommodates 5 shuttle bus stops at transit pavilion with 4 additional shelters.
	Tour Buses	40' inside turning radius minimum		Accommodates 5 bus pull-off areas near the rim at Mather Point.
Service Access				
	Trash/Recycle pads	6' x 8'		Placement need to accommodate ease of truck access.
	Emergency/Maintenance	N/A		Utilize pre-determined emergency routes.
ITS - Intelligent Transportation Systems		N/A		Additional dynamic visitor information would be offered about congestion and transit choices to be located at the entrance to proposed parking bays.

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STRUCTURES	Number	Size/Width	Comments
Bike Rental Facility	1	TBD	
Bicycle Racks	12	3' x 9'	
Service Access	N/A	N/A	Through southern parking lot adjacent to the rental facility
Trash/Recycle pads	1	6' x 8'	
Theater	1	TBD	Seats up to 250 visitors, provides 2 shows per hour, the proposed location is to be attached on the east side of the visitor center.
Service Access	N/A	30' wide drive lane	Through tour-bus limited access road north of the visitor center.
Trash/Recycle pads	1	6' x 8'	HVAC Facilities will need to be upgraded with addition of the theater.
Tower feature/icon	1	TBD	
Emergency/Maintenance	N/A	30' wide drive lane	Emergency access will be routed through the tour-bus limited access road north of the visitor center.
Vault Toilet	1		Locate vault toilet adjacent to the tour bus drop-off and in close proximity to the north shuttle bus drop-off. Maintain low visibility from rim. Added assumption generated at the VA session. The criteria was to meet the demand for one tour bus of 40 people in 30 minutes considering max of seventy-five percent using the facility or 30 people, eight stalls turning over every 6 minutes on average accommodates 40 people in thirty minutes. The additional capacity allows for misc. trail users.
SUSTAINABLE PRACTICES	Design Criteria		Comments
Maintain historic flows off-site.	References 1. Urban Storm Drainage Criteria Manual, Volume 3 Best Management Practices. Urban Drainage and Flood Control District Denver Colorado. September 1999, revised October 2007. 2. Coconino County Drainage Design Criteria, Coconino County Public Works Department, January 2001. 3. Highway Drainage Design Manual – Hydrology, Arizona Department of Transportation, Report No. FHWA-AZ93-281. Prepared by NBS/Lowry Engineers and Planners, Inc., March 1993. 4. Storm Water Policies and Standards, City of Phoenix. March 2004 5. Drainage Design Manual for Maricopa County, Arizona, Volume 1 Hydrology and Volume 2 Hydraulics. Engineering Division of Flood Control District of Maricopa County. January 1995 and January 1996. 6. City of Flagstaff Stormwater Management Design Manual. City of Flagstaff Engineering Division, Stormwater Management Section. July 2000.		Storm drainage will be handled on the surface as much as possible with the goal of protecting the downstream channel from erosion and damage from increased flows generated by new impervious surfaces associated with proposed pavement and the recent CVIP complex. See Civil Engineering, Storm Water Management Plan. Targets for detention storage are based on meeting the 100 year volumes stated in Coconino County guidelines. The preliminary water quality treatment goals used for schematic design are based on Denver area criteria and guidance using Best Management Practices (BMPs). Providing permanent BMPs meets federal requirements associated with the Clean Water Act. Water quality areas are sized to retain and slowly release volumes calculated based on approximately the 1/2" from paved surfaces. Features may include infiltration basins, vegetated swales, or level spreaders.
Promote infiltration methods.			a. Detention: reduce runoff peaks from the developed areas to match that of historic/existing runoff b. Water Quality treatment: provide retention and slow release of water quality capture volume (WQCV)
Balance design objectives with environmental factors to minimize impacts.			The nature of this project is primarily site oriented. The goal is to minimizing total pavement, reutilize existing paved areas, encourage walking and use of transit, preserve rare and endangered plants and accommodate stormwater management goals. Minimizing pavement through efficient layout is emphasized because of the multiple benefits including minimizing disturbance, new materials used, and heat island impacts.
Drainage Strategies			Strategies were refined considering overall visitor experience and natural resource protection including proposing shallow, dispersed surface swales, minimizing structure sizes, and bioengineering
Treatment Swales	0.5 % to 2% slope, 12" deep, 2' wide bottom, side slopes 3:1 max (5:1 or less preferred) with smooth transition to existing.		Drainage design is site specific and may vary from site to site.
Treatment Basins	0.5% to 1% bottom, 12 - 30" deep, side slopes 3:1 max (5:1 or less preferred) Provide 12% max access ramp for maintenance machinery.		Provide 12% max access ramp for maintenance machinery.
Basin Profile	non-compacted existing soil, 12" gravel layer, filter fabric, 6" topsoil, grass seed and plugs.		Drainage design is site specific and may vary from site to site.
Other Sustainable Strategies			
Minimize impervious pavement	The nature of this project is primarily site oriented. The goal is to minimize total pavement, reutilize existing paved areas, encourage walking and use of transit, offset drainage impacts and preserve rare and endangered plants.		The nature of this project is primarily site oriented. The goal is to minimize total pavement, reutilize existing paved areas, encourage walking and use of transit, offset drainage impacts and preserve rare and endangered plants.
Local and recycled materials	Explore the potential to use recycled road base, asphalt and concrete materials, fly ash and slag add mixtures, on-site harvested wood, stockpiled boulders, and local or recycled furnishings		Explore the potential to use recycled road base, asphalt and concrete materials, fly ash and slag add mixtures, on-site harvested wood, stockpiled boulders, and local or recycled furnishings



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<b>WAYFINDING/ORIENTATION</b>		<b>Number</b>	<b>Size/Width</b>
<b>Comments</b>			
Pedestrian			Improve the existing wayfinding opportunities within the CVIP core and out to Mather Point to include universal symbols for foreign visitors, clearer visibility and appropriate text sizes, recognizable you are here signs, distances to rim and Mather Point, bicycle access and routes.
Visual landscape Icon - Tower	1	10' square x 30' tall	
Directional column with seatwall	6	18" high seatwall, 9' high column with sign element	Wayfinding components would be updated and will utilize vernacular natural stone material and establish consistent graphics and unified themes.
Visual landscape Icons - Columns	5	4' square x 9' tall	
CVIP/Information Signs	6	Based on existing sign design	
	N/A	N/A	Signs, icons or graphic systems would help visitors make routing decisions to parking areas, shuttle bus stops and other points of interest or attractions.
Shuttle Bus, Tour Bus, Automobile			
<b>INTERPRETATION</b>		<b>Comments</b>	
Interpretative Signage		The staff will define the type, location and content of the interpretive signage that will support the existing story panels. Includes new interpretive information at the Rim access and arrival points.	
<b>LANDSCAPE RESTORATION</b>		<b>Comments</b>	
Revegetation/Restoration		Restore historic landscape character with native plants in areas that are bare or have been denuded. The existing vegetation is to be preserved and protected wherever possible. The revegetation plan proposes zoned planting types so that the NPS may begin growing nursery plant materials in anticipation of project construction in 2009. The revegetation plan aims to stabilize disturbed areas with appropriate vegetation, restore appropriate habitat, blend the improved areas with surroundings, and provide buffering to views of parking. The effort will emphasize re-establishing the topsoil mantle by working with salvaged rock, conserved duff and existing topsoil layer with the native seed bank to closely resemble adjacent undisturbed areas. Where road segments are removed, grading will include re-contouring and revegetation. The intent includes designing more intensive planting at Mather Point in areas where the road will be removed to compliment pedestrian areas. The plan will emphasize grasses, forbs, and shrubs complimentary to the abundant pinion juniper forest that dominates the site. The National Park Services plans to prepare establishment and maintenance specifications that will address techniques for enhancing establishment rates and combating invasive species. Temporary irrigation will be considered as a strategy to speed growth and reduce hand watering.	
Landscape Improvements		The existing vegetation is to be preserved and protected wherever possible. All Landscape improvements are to follow the historic cultural landscape report guidelines.	
<b>TRAILS</b>		<b>Size/Width</b>	<b>Material</b>
<b>Design Criteria/Comments</b>			
Primary Pedestrian Walkway	20' wide	Asphalt	4.75% grade or less
Secondary Trails between programs	8' min.	Asphalt	4.75% grade or less.
Rim Trail at Mather Point	15' min.	Asphalt	4.75% grade or less. Widen rim trail to accommodate more people between program elements.
Bike Trail	9 min.	Asphalt	Delineate with signage and designate a route around CVIP that allows access to the rim.

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GATHERING/WAITING AREAS (Approximate Sizes)	Size	Number	Comments
Mather Point			
East Viewing Point	600 SF		Accommodates up to 112 people, informal seating in a dispersed layout, 4' by 4' area per person.
West Viewing Point accessibility	1800 SF		Accommodates up to 40 people, informal seating in a dispersed layout, 4' by 4' area per person.
Informal Kiosk/Historic Information .	4120 SF		Accommodates up to 257 people, informal seating in a dispersed layout, 4' by 4' area per person.
Amphitheater	3575 SF		Accommodates up to 220 people, informal seating in a dispersed layout, 4' by 4' area per person.
Accessible Viewing Area	1400 SF		Accommodates up to 90 people, informal seating in a dispersed layout, 4' by 4' area per person.
CVIP			
Bus Drop-off	3000 SF		Accommodates up to 190 people, informal seating in a dispersed layout, 4' by 4' area per person.
Automobile Drop-off adjacent to the rim	2750 SF		Accommodates up to 170 people, informal seating in a dispersed layout, 4' by 4' area per person.
Shuttle Bus Drop-off			
Transit Pavilion	3200 SF	1 shuttle bus stop	Accommodates up to 200 people, informal seating in a dispersed layout, 4' by 4' area per person.
North Side of Turn Around	3900 SF	2 shuttle bus stops	Accommodates up to 250 people, informal seating in a dispersed layout, 4' by 4' area per person.
South Side of Turn Around	3900 SF	2 shuttle bus stops	Accommodates up to 250 people, informal seating in a dispersed layout, 4' by 4' area per person.
Theater arrival area	1750 SF		Accommodates up to 110 people, informal seating in a dispersed layout, 4' by 4' area per person.
Visitor Icon Tower	1400 SF		Accommodates up to 85 people, informal seating in a dispersed layout, 4' by 4' area per person.

Note: Gathering & waiting areas can overlap programmatically.

SITE AMENITIES	Size/Width	Number	Comments
Amphitheater	18" high x 30" deep	Seats 200 people max	Amphitheater is to be constructed out of harvested stone from previous construction projects in the Grand Canyon south rim.
Seating Opportunities			
Historic Log Benches	Maintain historic design	20	Maintain historic design
Stone Seat Walls	18"		Stone seat walls to be constructed from harvested stone form previous construction projects.
Stone Site Walls (Rim Edge Definition and Retaining walls)	18" to 30" tall		Stone site walls to be constructed from harvested stone form previous construction projects.
Additional Picnic Areas			
Re-utilize West Shuttle Bus Shelters	N/A	2	Relocate and reutilize the east shuttle bus shelters - keep one in current location and relocate the other at the north Mather Point shuttle bus stop.
Parking Areas			
2 picnic tables/area	20' x 35' (approx.)	9 picnic areas (18 picnic tables)	Share trash/recycling receptacles between picnic areas for easy maintenance.
3 picnic tables/area	30' x 40' (approx.)	3 picnic areas (9 picnic tables)	Share trash/recycling receptacles between picnic areas for easy maintenance.
Near the Rim			
6 picnic tables/area	30' x 70' (approx.)	2 picnic areas (12 picnic areas)	Share trash/recycling receptacles between picnic areas for easy maintenance.
Informal Seating at Arrival Areas	4' x 10'	12 benches	
Trash Receptacles/Recycling	4' x 6'	18 trash receptacles, 9 recycling	Share trash/recycling receptacles between picnic areas for easy maintenance.
Kiosk			Maintain the historic kiosk in its original location and upgrade sign graphics

Note: Benches and seat walls are to be dispersed along the Rim Trails and Secondary Trails.

MATHER POINT CULTURAL RESOURCES (existing conditions)	Comments
Historic Mather Point	<p>Mather Point has been the place for more than 50 years where most South Rim visitors get their first glimpse of the Grand Canyon.</p> <p>Preserve the curved stanchion railings along portions of the canyon rim</p> <p>Preserve the rim path's stone edging, aggregate surface material and alignment in proximity to the canyon rim</p> <p>Preserve split log benches along the rim path</p> <p>Preserve the vegetate islands between the existing parking area and the rim</p> <p>Preserve the 1962 information kiosk</p> <p>Preserve the Stephen Mather commemorative stone</p>

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**UTILITIES**

**Comments**

Parking Lot and Trail Lighting

Outdoor lighting will be low to medium ambient brightness levels providing for basic safety in parking lots and pedestrian lighting. Lighting will be designed to adhere to Dark-Sky guidelines to limit sky glow, light trespass and visible point sources of light outside the site. Trail lighting will include pedestrian bollards providing under 0.5 ft candle levels along pathways. Light fixture types will be coordinated with parks maintenance to follow park standards including use of LED fixtures where possible. Further study of parking lot lighting in the next phases of design will address the final parking lot pole heights, number and type of fixtures. Any new lighting would be compliant with 2004 Grand Canyon Nation Park Night Sky Protection and Exterior Lighting Policy and with mitigation measures as describe within the EA.

Site Drainage

Refer to sustainable practices and Civil Engineering for surface storm drainage.

Other Utilities

Other utilities will include providing water, sanitary service and other potential service connections for expanded building and restroom additions.

Water/Wastewater

**SAFETY**

**Comments**

Pedestrian

Provide a barrier for drop off conditions where safety is an issue only. Resolve safety conflicts at interface points between vehicular traffic and pedestrian traffic. Clearly define pedestrian and vehicular routes.

Search and Rescue

Plan to be developed by the park.

**MAINTENANCE**

General Notes:

1. Design of improvements to reflect ease of maintenance and durability in the context of a historic landscape.
2. Accessibility will be addressed with the construction of new trails, connections and where feasible.
3. Opportunities for picnicking shall be provided in a subtle manner. This could include conveniently placed flat rocks, outdoor furniture, etc.
4. Landscape Islands within the parking pods will remain large enough to be utilized for snow removal and storage and preservation of existing vegetation.
5. Pedestrian pathways will be all be constructed out of asphalt and will maintain a smooth edge to expedite the removal of snow.



# Contextual Analysis

South Rim Canyon View Information Plaza & Mather Point



# Contextual Analysis



## Park Purpose and Significance

The Grand Canyon South Rim provides a wealth of experience for first time visitors as well as those returning to take in the endless opportunities afforded at the canyon.

## Purpose of and Need for Action

There is a need to enhance the visitors' experience in addition to improving the arrival experience while alleviating congestion at the Canyon View Information Plaza and Mather Point. The first priority for this design effort is to ensure that visitors reach the rim and the second priority is to encourage visitors to utilize the facilities at CVIP to learn about the educational and recreational opportunities along the South Rim. In addition there is a need to improve private-vehicle parking to meet current and future visitor demands. A separate tour bus drop-off and parking area near the rim should be provided to accommodate current and future demand. The site improvement plan should address the safety risks for visitors due to conflicts between pedestrians, parked vehicles and moving traffic at Mather Point. Due to the nature and scale of the project, the visitor wayfinding system will require revitalization and reorganization. This will clearly delineate the circulation hierarchy of vehicular and pedestrian circulation, and define visitor transportation options.

## Guiding Principles

### Basic Design Philosophy

- Preserve and protect significant natural and cultural resources.
- Facilitate and strengthen the visitor wayfinding system.
- Enhance visitor understanding and appreciation of the natural environment along and at the canyon rim.
- Demonstrate sustainable development practices.

## Project Objectives

### Visitor Experience

- Enhance the visitor's experience.
- Improve the sense of arrival for visitors and establish the visitor center at CVIP as the primary location for orientation to the South Rim.
- Make main pedestrian routes accessible to all.
- Minimize intrusion on night sky, protect night sky as a resource along with natural soundscapes.

### Transportation

- Improve private vehicle and tour bus parking as needed to meet current and future visitor demand.
- Improve visitor access to the rim.
- Reduce safety risks near Mather Point due to conflicts with pedestrians, parked vehicles and moving traffic.

### Landscape Preservation and Restoration

- Restore non-designated areas at Mather Point that have been damaged by improper vehicle parking and social.
- Organize the site program on the site in a sensitive manner to minimize disturbance to existing vegetation and to retain significant plant species.
- Minimize disturbance to the natural and cultural environment, and rehabilitate areas damaged by social trailing.

### Wayfinding

- Use consistent graphics for parking areas and shuttle bus stops, and for improving vehicular circulation.
- Provide enhanced access to interpretive information so visitors gain a better appreciation for the values of Grand Canyon National Park.
- Provide visitors with the ability to plan their canyon experience by utilizing CVIP for trip planning, park orientation, and travel mode choices.

### Architectural & Site Elements Character

- Architectural elements shall be to the scale and character of the CVIP facilities and shall reflect the characteristics of the architecture found along the South Rim.
- Any built structure near the historic Mather Point view area should be placed in such a way that it does not interview with site historic vistas.

### Sustainable Technologies

- Natural drainage patterns will be maintained and run-off reduced through the use of sustainable technologies such as water infiltration areas, check dams and level spreaders.

**Visitor Experience:**

Existing Character

Proposed Character



The current CVIP facility is lacking a welcoming atmosphere and a “front door” experience for visitors.

Create a sense of arrival for visitors traveling by private vehicle or shuttle bus at the existing Transit Pavilion.

The architecture that comprises CVIP faces inward onto the plaza and shows the backs of the building to visitors who approach the facility from the rim. Design future architectural program and plaza to provide a “front door” experience.

Design future architectural program and plaza to provide a “front door” experience.



The only way visitors arriving by private vehicles can enter CVIP is to park and walk from the Mather Point parking lot.

Provide parking and drop-off areas adjacent to CVIP.



The tour bus drop-off area has no formal staging areas for pick-up and drop-off, and is confusing for visitors.

Provide tour bus parking close to the rim with a separate drop-off area and arrival plaza.



With the demolition of the existing Mather Point parking, visitors will be parking farther from the rim than before.

Develop a site plan strategy that provides close parking and drop-off areas near the rim and develop clear wayfinding elements.



The CVIP plaza is centrally located in the surrounding architecture and the separation between buildings makes it difficult for the visitor to determine where to go.

Maintain a minimum 500-foot length for parking bays as a comfortable walking distance to facilities.



The west shuttle bus stop cannot be viewed from the existing Kaibob Trail shuttle bus stop making transfers confusing.

Improve the wayfinding system to more clearly identify program facilities within the CVIP project site. Create one shuttle bus stop that serves all three shuttle bus routes.

Walking distances are great between CVIP and Mather Point visitor destinations.



**Site Furnishings:**

Existing Character

The existing east and west shuttle bus stop shelters provide little comfort during adverse weather or the summer heat.

Existing shelters are nestled within the trees along the path from CVIP to Mather Point and provide nice places to rest, view wildlife or take in the landscape.

Historic NPS benches at Mather Point have a rustic character.



Proposed Character

Reorient the shade structures and retrofit the architectural design to provide for group seating and picnic opportunities.

Provide more shelters close to the rim that provide vistas to the surrounding landscape and the canyon beyond.

Preserve the cultural design elements at Mather Point, create more seating opportunities along the edge utilizing the historic designs, and retain this feel or complement it with contemporary seating.

**Service Area:**

Existing Character

The existing maintenance facility is located in the heart of the historic arrival area for CVIP and turns its back on the "front door" of the project.

The service drive winds through the existing pinion-pine and juniper forest.

The rear of the visitor center is visible to visitors walking from Mather Point.



Proposed Character

Utilize architectural elements such as shade shelters in front of the building on either side of the entry plaza to frame the arrival sequence.

Re-use shuttle bus access drive and retain the existing vegetation, as much as possible, as a landscape buffer between the parking and the rear of CVIP.

Provide a "front door" experience for visitors traveling to CVIP from the rim by incorporating the proposed theater design.

**Existing Facilities:**

Existing Character



The transit pavilion, in its original conception, was seen as the “front door” to CVIP.



The existing visitor center facilities are underutilized due to the minimal transportation opportunities to reach CVIP.

The CVIP transit pavilion is a shell, and lacks seating and gathering areas.



The visitor center service area turns its back toward the rim.

The existing trail, winding through the existing pinion-pine and juniper forests, provides a pleasant walking experience.



Existing stone constructed landscape features and wayfinding signage at CVIP.



Proposed Character

Develop alternatives to welcome visitors to Grand Canyon National Park and Mather Point that re-establish and utilize the orientation of the pavilion.

Energize the visitor center with the introduction of the theater design, provide parking for personal occupancy vehicles and create drop-off areas adjacent to the facility.

Provide a plaza adjacent to the pavilion that allows for connectivity between the proposed site improvements. Enhance the welcoming features surrounding the pavilion.

Install screen walls as necessary to buffer the rear of the visitor center.

Utilize vegetation buffers of 40 to 70 feet to maintain a peaceful walking experience from the adjacent parking areas to the central pedestrian circulation between CVIP and Mather Point.

Utilize the design character of the existing CVIP signage and wayfinding, and create similar wayfinding features within Mather Point to visually link CVIP and Mather Point.

**Vegetation:**

Existing Character

Proposed Character



The CVIP existing re-vegetation efforts consist primarily of rabbit-brush and sage. In addition, pinion-pines and junipers were transplanted to the core of the facility.

Utilize planting zones to reflect the conditions of the new site plan and proposed water quality infiltration areas.

The existing service road acts as a dam for the CVIP site run-off. This causes the existing vegetation along the north side of the road to be susceptible to pests due the periodic inundation of water.

Homogenize re-vegetation efforts throughout the CVIP and Mather Point improvement areas.



The native vegetation surrounding the CVIP site is a dense pinion-juniper forest with some understory.

Employ sustainable technologies to improve water quality and allow drainage to leave the site in a controlled manner through the use of level spreaders and check dams.



Sensitive limestone bedrock and the Tusayan Flameflower inhabit the landscape north of CVIP within the development boundary.

Maintain and enhance the protection of the vegetation in the area.



Current sustainable development practices strive to preserve and protect the sensitive habitat surrounding CVIP.

Coordinate planning and design efforts to ensure the temporary parking lot is incorporated within the future parking lot development in order to minimize disturbance to the surrounding vegetation.



The vegetative cover north of the visitor center, looking towards the rim, is young and has large open areas where the limestone bedrock is at the surface.

Preserve, by the use of landscape buffers, enough distance between paving areas to ensure significant, quality vegetation cover improving both the visual and auditory experience for visitors.



The vegetative cover south and east of CVIP is more mature - The cover is dense with some understory plant material.

Ensure retention of important vegetative species (including significant trees) that are important in maintaining a quality landscape buffer. This will be achieved by field-verifying the layout of the parking areas during construction.





**Mather Point/The Rim:**

Existing Character

Proposed Character



Mather Point is unique in that visitors can walk beyond the rim edge and view the canyon.

Provide ABAAS access so all visitors can enjoy this unique experience.

The overlooks are often over-crowded removing the visitor's ability to peacefully take in the amazing canyon views.

Provide additional program elements along the rim such as an amphitheater, and an ABAAS accessible overlook to provide for viewing and educational experiences at Mather Point.



Interpretive signage dots the edge of the rim to point out views, trails, vegetation and other pertinent information to deepen the visitor experience.

Work with the park staff to facilitate and strengthen the interpretive themes along Mather point.



Existing cultural elements along the rim such as the kiosk and the Steven Tyng Mather memorial stone have historic significance to the experience of the visitor.

Preserve and enhance the areas surrounding the existing historical features to demonstrate to visitors the importance of the historical heritage along the rim.

Visitors are prohibited from throwing things over the edge of the rim.

Provide strategic, logical locations for trash collection to discourage visitors from discarding objects in inappropriate ways.



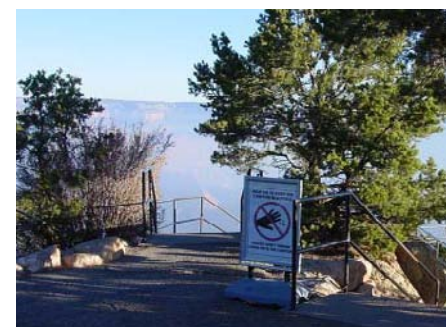
Snow removal is extremely difficult due to stone edging on trail.

Plan the new trails, with the appropriate width, to accommodate snowplows and minimize use of stone edging.



Existing rim trail along Mather Point from the east-overlook narrows down to a single file path.

Widen the rim trail in the Mather Point viewing area to accommodate the large volumes of visitors.



The pathways surrounding Mather Point provide little or no buffer between the existing parking lots, and have little pathway hierarchy or clear wayfinding signage.

Maintain a minimum of 40 feet vegetative buffer between proposed parking lots and pedestrian pathways, and create a trail hierarchy to suggest major and minor pedestrian routes.

**Mather Point/The Rim:**

Existing Character

There is no visual connection between Mather Point and CVIP due to the distance between the two attractions and the dense vegetative cover.

Proposed Character

Provide wayfinding signage that is fitting for the rim. It should clearly direct visitors to the rim, to CVIP, to the parking lots, and to the shuttle bus and tour-bus transportation areas. There should be no confusion about "how to get there, from here." Create a visual icon or "tower" of natural stone with complimentary historic character between CVIP and Mather Point that can also be seen from the proposed parking lot locations and that can be tied back architecturally to the visitor facility. The icon should be placed so that it doesn't detract from or obstruct canyon view.



The overlooks at Mather Point are not ABAAS accessible.

Design an ABAAS accessible pathway that leads from the edge of the rim to the tip of the east Mather Point overlook.



The paving surface along Mather Point and the rim trail are in disrepair and do not meet current ABAAS accessible standards.

Resurface the Mather Point trails to maintain a level slope and provide an accessible viewing area along the rim.



Historic NPS benches have been placed along the rim to take advantage of certain views of the canyon but the vegetation along the rim has overgrown and limits views of the historic vistas.

Selectively clear the vegetation along the rim edge to restore historic views to the canyon or consider relocating historic benches on Mather Point, as is appropriate, to maximize views and use. This limited vista clearing would be carefully executed so the impact to park resources would be minimized while the views would be maximized.





Roads, Drives & Circulation:

Existing Character

Proposed Character



The service access road is gracefully aligned through the pinion-pine and juniper forest, and buffers views of the backside of structures.

Maintain curved park-like design character for all proposed parking and road layout to ensure sweeping curves that visually shorten expansive views of paving surfaces.



The existing landscape island between the Mather Point parking lot and the South Entrance Road is well established and should be preserved.

Preserve the vegetation within the Mather Point parking lot and incorporate the existing vegetation within the proposed design plan.



The perimeter service road that currently circumvents CVIP follows the approximate realignment of the new South Entrance Road.

Reutilize portions of the existing service road to minimize construction cost.



The existing pinion-pine and juniper forest north of the CVIP service road is dense and frames the drive to create a sweeping park-like driving experience through the trees.

Maintain a minimum 40 feet of vegetation buffer between the realigned north side of the South Entrance Road and the proposed parking areas.

The bus drop-off and parking does not create a welcoming sense of arrival to the CVIP facilities.

Provide a pedestrian-friendly plaza area surrounding the existing Transit Pavilion that provides a safe separation between vehicles and pedestrians, and establishes an extension of the arrival into the landscape.



The busy South Entrance Road at the Mather Point parking area does not provide any clear or safe route, free of vehicular/pedestrian conflicts, to or from CVIP.

Minimize the need for visitors to walk across significant traffic routes within the CVIP proposed improvement area, and pull parking away from the rim edge to create a safe distance between the visitors at Mather Point and the parking lot areas.



The bike path connecting CVIP to the greenway multi-use path crosses in the middle of the service road.

Relocate the bike-path crossing to an intersection and maintain a separate bike-path that circumvents the proposed parking lot designs to minimize bike/vehicular conflicts.



The existing bus parking at the transit pavilion is back out only, far from the rim and has no formal area for visitor drop-off.

Place all three shuttle stops at one shuttle bus stop location to minimize confusion between route transfers.



During the summer months there is little protection for visitors from the hot sun.

Provide additional shelters along the proposed central pathway between CVIP and Mather Point, and create pedestrian rest-area pull-offs within the existing pinion-pine and juniper forest that provide seating and shelter.

The distance between the east shuttle bus stop and the west shuttle bus stop is confusing for visitors and makes transfers between routes difficult.

Place all three shuttle bus stops at one shuttle bus stop location to minimize confusion between route transfers.

### Roads, Drives & Circulation:

#### Existing Character

#### Proposed Character



The current seating configuration for seating at the shuttle bus stop shelter does not provide group-seating areas.

Retro fit the shelter design to provide adequate shelter from weather elements with minimal modifications.



The access road to the west shuttle bus stop is not differentiated from the other shuttle bus stop.

Reconfigure the seating area under the shelter to create seating that accommodates groups and families.



# Concept Design

South Rim Canyon View Information Plaza & Mather Point



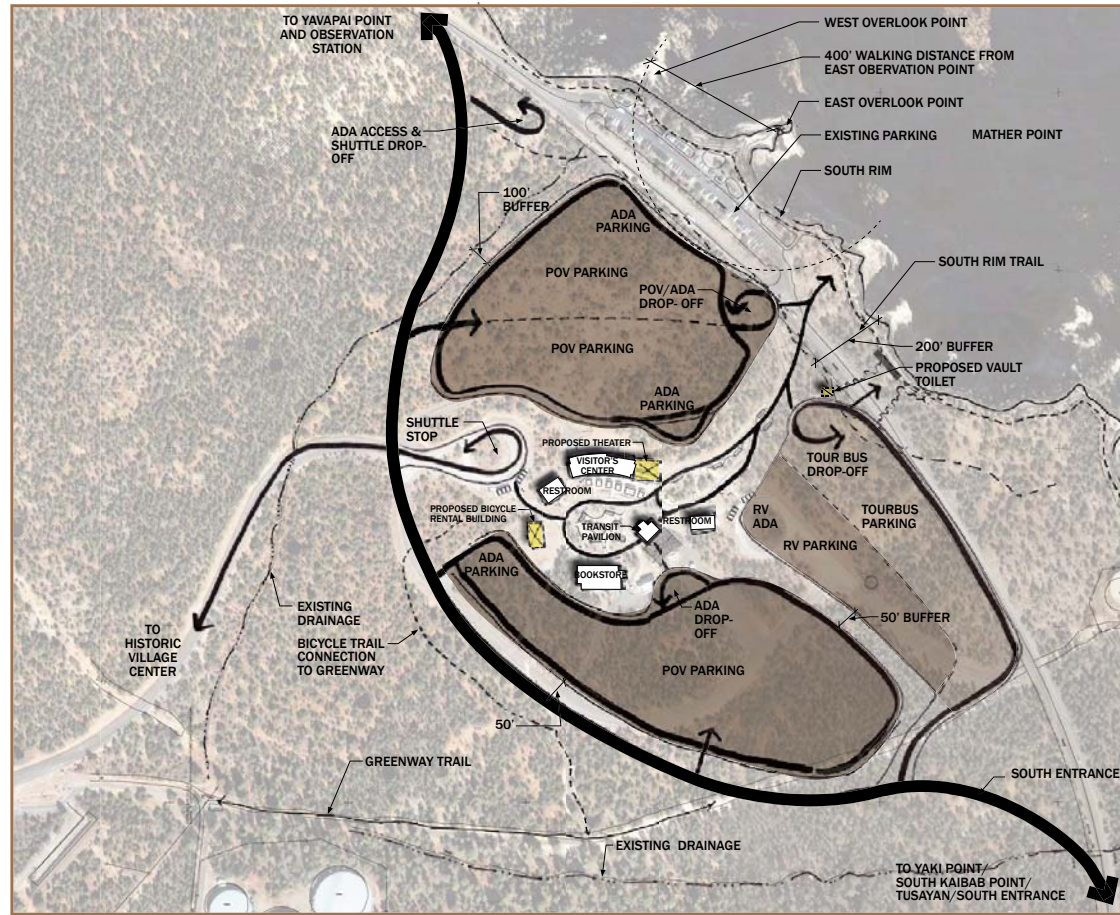


**Design Concept Diagrams**

During November and early December 2007, DHM Design staff initiated work on a site analysis and developed several diagrams in preparation for the December 11th, 12th and 13th CVIP Schematic Design workshop held at GRCA. These diagrams are the result of a collaborative effort during the workshop between park staff, representatives from the Denver Service Center, and the design team. The diagrams set up a framework that the design team utilized as a starting point from which to test each concept by laying out the site program to scale.

**Option A:**

Option A has two main drop-off points – tour buses at the rim and POVs north of the visitor center. The transit pavilion becomes a front door or landmark for visitor orientation at the POV parking. The east shuttle bus stop is re-utilized for RV parking. Adjacent to the rim is a multi-functional shuttle bus stop and serves ABAAS access, bringing visitors directly to Mather Point first.



**SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT**  
GRAND CANYON NATIONAL PARK

**OPTION A**

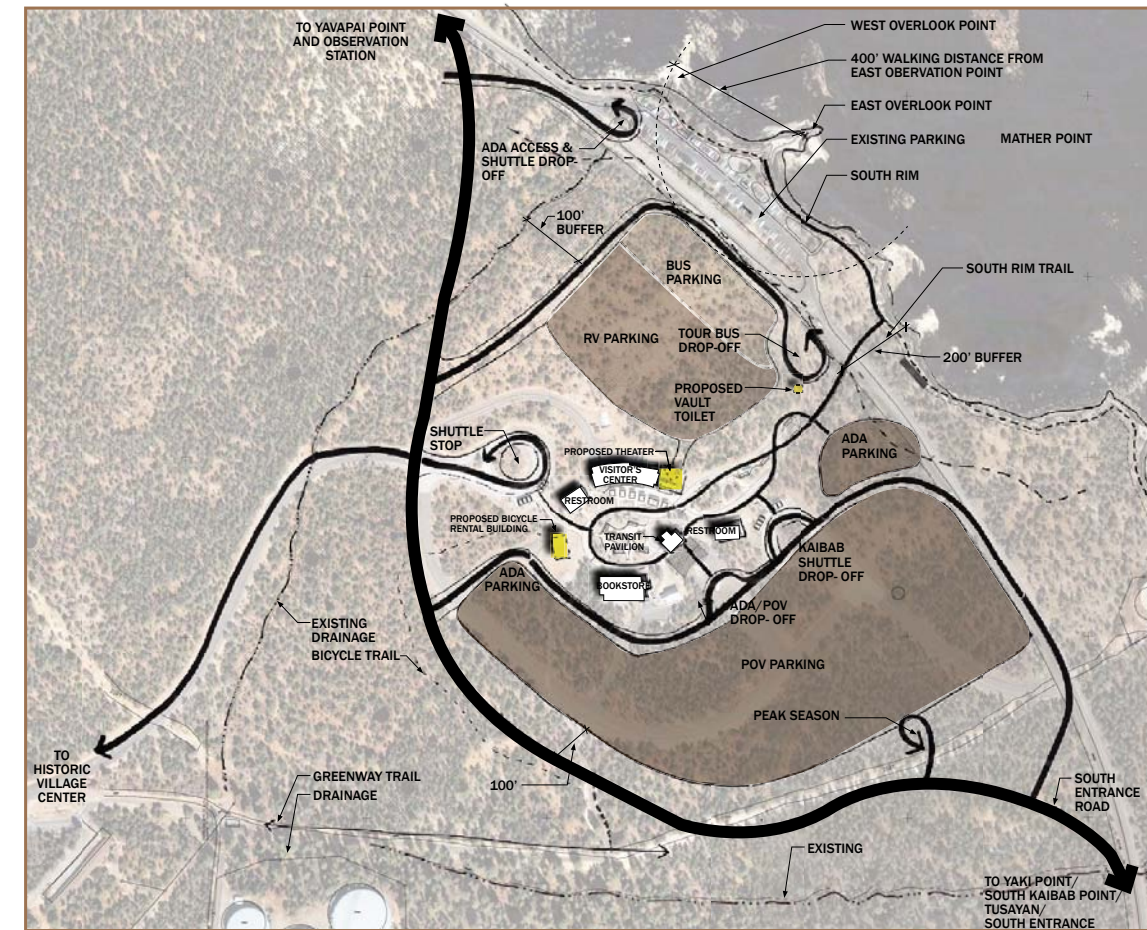
This approach allows visitors to arrive at the rim via a tour bus drop-off located northeast of CVIP or from the POV drop-off area associated with the parking area north of the visitor center. Both drop-off zones provide clear and easy access to the rim. Visitors have the option for drop-off at the transit pavilion or at the rim and park depending on the visitor's desired experience. The various modes of transportation feed into the existing pedestrian corridor. This corridor is the primary route for pedestrians with a smaller secondary route for the tour bus drop-off that can access the rim through an existing clearing in the vegetation.

- o The entry road utilizes portions of the existing alignment of the existing shuttle road.
- o The transit pavilion becomes a "front door" for personalized vehicles and it emphasizes the importance of the building as a landmark for visitor orientation.
- o This option maintains the west shuttle stop and reutilizes the east shuttle stop for RV parking.
- o The shuttle stop adjacent to the rim is a multi-function transit stop and serves ADA access, transit stop and potential stop for the Tusayan transit connection bring visitors directly to Mather Point first.
- o This plan maintains the existing pedestrian corridor and walkway.

**CONCEPT DIAGRAM**  
DECEMBER 7, 2007

**Option B:**

Option B allows visitors to park immediately upon entering the CVIP complex. Wayfinding is simplified by locating all POV parking on the southwest side of CVIP. As parking fills, a shuttle can transport visitors to the rim. Bus and RVs location is less visible from the rim and plaza area.



**SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT**  
GRAND CANYON NATIONAL PARK

**OPTION B**

This approach allows the park visitor to park immediately upon entering the visitor center complex. All the POV parking is located on the south west side of CVIP making wayfinding and orientation simple. Additional ADA parking is located adjacent to the rim to improve the universal experience for all. During peak flows as the front of the parking area fills up, guests can take a shuttle from the back portions of the parking lot directly to the rim. Tour bus guests will be able to directly access the rim north of the visitor center. The various modes of transportation feed into the existing pedestrian corridor. This corridor is the primary route for pedestrians with a smaller secondary route for the tour bus drop-off. This scheme locates the buses and RVs in an area that is less visible to users on the rim and the plaza area. The tour buses are now placed in a secondary position from where the visitors enter the visitor center site. The tour bus operators will be familiar with the route and can take the longer route to the north side of CVIP.

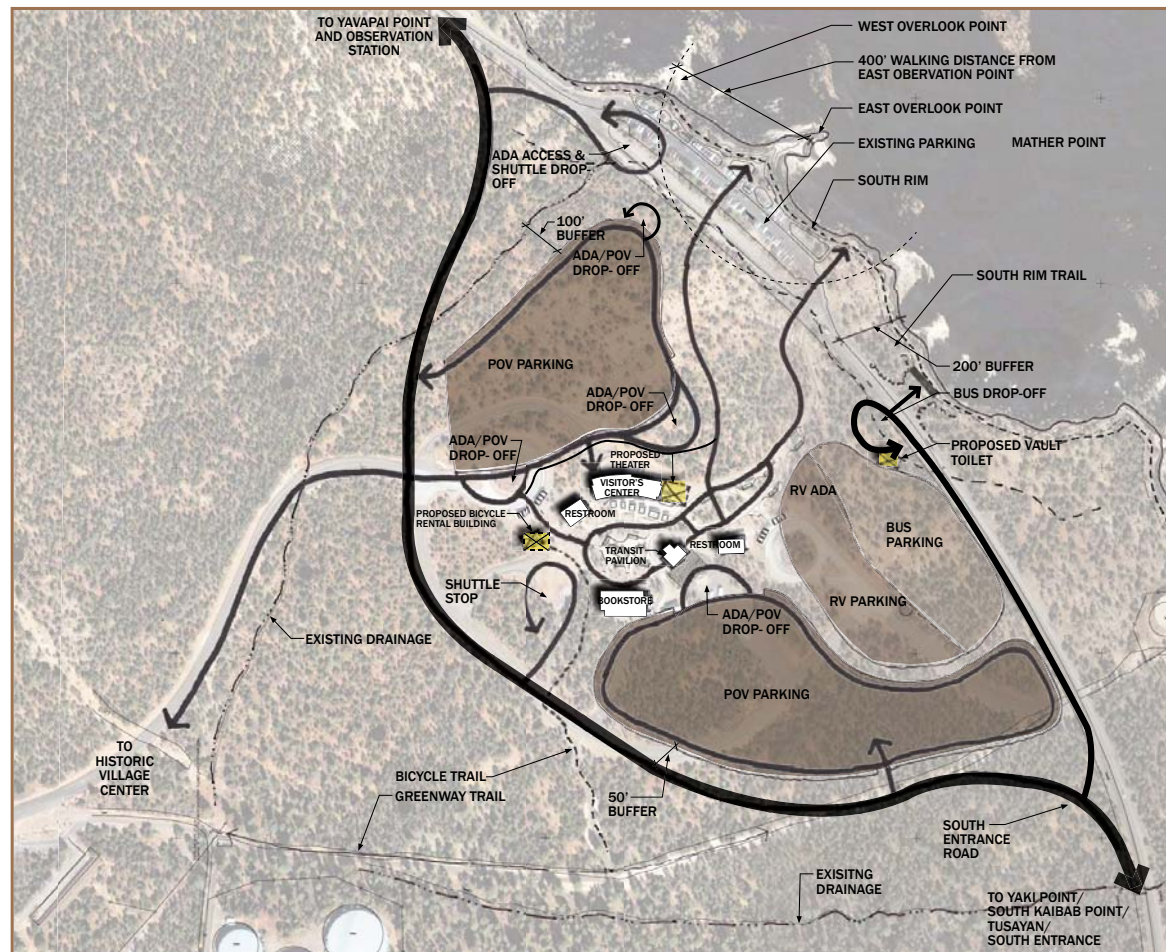
- o The shuttle road has been realigned to the south to create a more efficient parking layout south of the bookstore.
- o The transit pavilion becomes a "front door" for personalized vehicles and it emphasizes the importance of the building as a landmark for visitor orientation.
- o This plan maintains the two separate shuttle stop locations to the Village and to Kaibab.
- o The shuttle stop adjacent to the rim is a multi-function transit stop and serves ADA access; transit stop and potential stop for the Tusayan transit connection bring visitors directly to Mather Point first.
- o This plan maintains the existing pedestrian corridor and walkway.

**CONCEPT DIAGRAM**  
DECEMBER 7, 2007



**Option C:**

Option C, like Option A, has POV and tour bus drop-offs to allow visitors to arrive at the rim. The north POV parking lot is located close to the rim and provides the shortest walking distance to the rim. There are multiple pedestrian routes from the various transportation modes within the CVIP area. A path associated with the tour bus drop-off helps to disperse and reduce visitor congestion. This plan preserves open space and buffers the visitor walk to the rim.



**OPTION C**

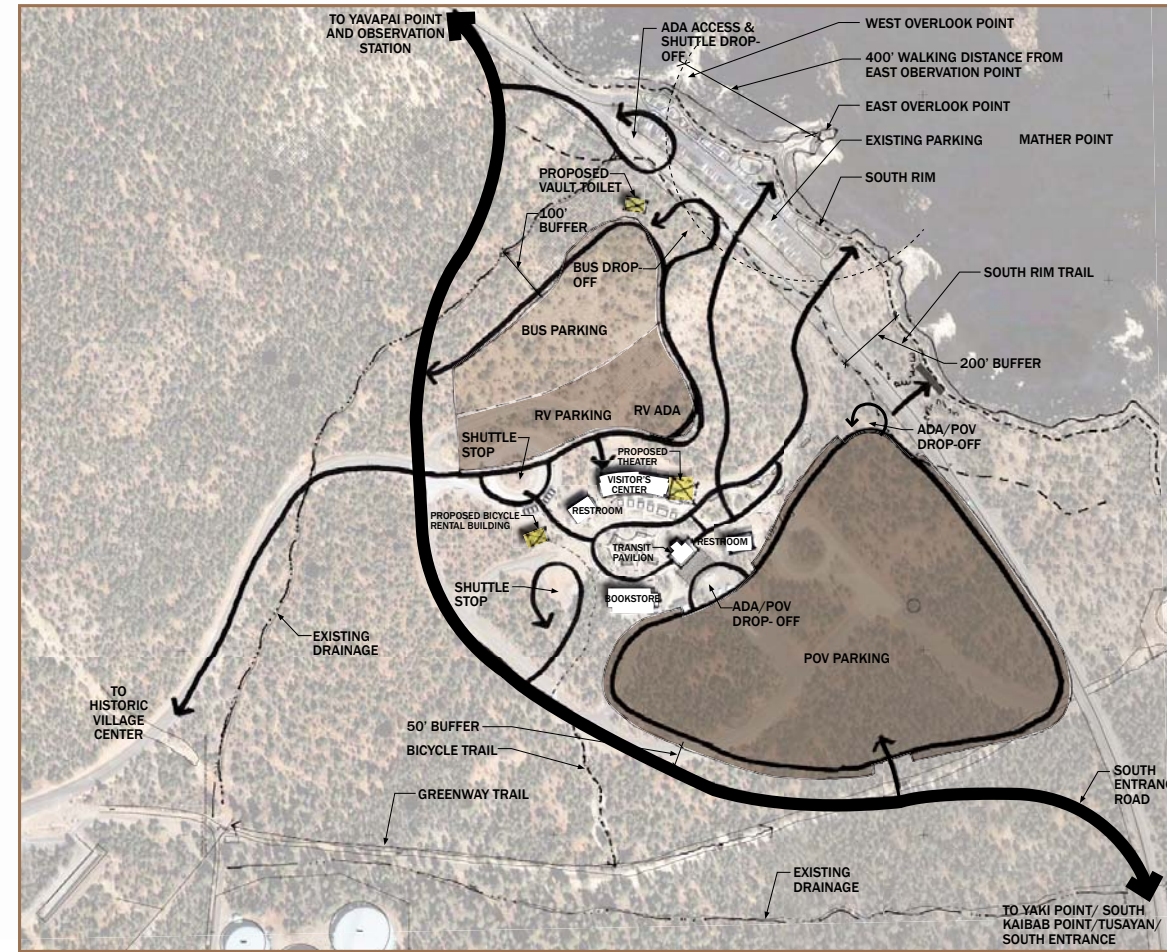
This approach is similar to Option A in that it allows the visitor to arrive at the rim either by a personal vehicle drop-off area or by the tour bus drop-off. Both drop-off zones provide clear and easy access to the rim. The north POV parking lot is close to the rim and provides the shortest walking distance to the rim for park guests. This plan provides multiple pedestrian routes to travel from the various transportation modes within the CVIP area. Two primary paths provide direct access to the rim and connect the visitor back to CVIP. These pedestrian walkways serve as a way to easily and safely guide visitors from both the west POV parking area and the Bus/RV parking and vehicle drop-off at the transit pavilion to the rim. A secondary path is associated with the tour bus drop-off and further helps to disperse and reduce visitor congestion.

- o The park entry road utilizes portions of the existing alignment of the shuttle road.
- o The transit pavilion becomes a "front door" for personalized vehicles and it emphasizes the importance of the building as a landmark for visitor orientation.
- o This plan relocates the west shuttle stop adjacent to the bookstore and reuses the west shuttle stop for a POV drop-off area.
- o The shuttle stop adjacent to the rim is a multi-function transit stop and serves ADA access, transit stop and potential stop for the Tusayan transit connection bring visitors directly to MP first.
- o This plan also allows multiple pedestrian routes to the rim that disperse the volume of visitors coming from the various modes of transportation.
- o Preserve significant open space and fully buffer the visitor walk to the rim.

CONCEPT DIAGRAM  
DECEMBER 7, 2007

**Option D:**

Option D is similar to Option B with the RVs north of CVIP and the POV parking to the southeast. Buses and RVs are strategically located for less visibility from the rim and the plaza area. Wayfinding is simplified by locating all POV parking on the southwest side of CVIP and ABAAS parking is located adjacent to the rim. There are multiple pedestrian routes from the various transportation modes within the CVIP area. Two primary paths provide direct access to the rim and connect the visitor back to CVIP.



**OPTION D**

This option is zoned similar to Option B with the RVs north of CVIP and the and POV parking to the southeast. This scheme locates the buses and RVs in an area that is less visible to users on the rim and the plaza area. The tour bus operators will be familiar with the route and can take the longer route to the north side of CVIP. All the POV parking is located on the south west side of CVIP making wayfinding and orientation simple. ADA parking is located adjacent to the rim to improve the universal experience for all. This plan provides multiple pedestrian routes to travel from the various transportation modes within the CVIP area. Two primary paths provide direct access to the rim and connect the visitor back to CVIP. These pedestrian walkways serve as a way to easily and safely guide visitors from both the west POV parking area and the Bus/RV parking and vehicle drop-off at the transit pavilion to the rim. A secondary path is associated with the tour bus drop-off and further helps to disperse and reduce visitor congestion.

- o Reutilize the existing shuttle road corridor and slightly modified to provide a more park like drive experience.
- o The transit pavilion becomes a "front door" for personalized vehicles and it emphasizes the importance of the building as a landmark for visitor orientation.
- o This plan relocates the west shuttle stop adjacent to the bookstore and reuses the west shuttle stop for a drop-off area. This area can better accommodate a shuttle stop as it is inefficient for parking layout.
- o The shuttle stop adjacent to the rim is a multi-function transit stop and serves ADA access; transit stop and potential stop for the Tusayan transit connection bring visitors directly to MP first.
- o This plan also allows multiple pedestrian routes to the rim that disperse the volume of visitors

CONCEPT DIAGRAM  
DECEMBER 7, 2007

SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT  
GRAND CANYON NATIONAL PARK

SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT  
GRAND CANYON NATIONAL PARK





### Design Concepts

During late December 2007 and early January 2008, DHM revised the three Concept Diagrams to address comments from the GRCA staff, and reflect the design team's findings while at the site during Workshop Number One. DHM continued to develop these alternatives as the range of Schematic Design Alternatives and presented them to park staff at Workshop Number Two, the week of February 4, 2008. DHM also provided detailed grading studies, site sections, sustainable site solutions, and cost estimates for each alternative.

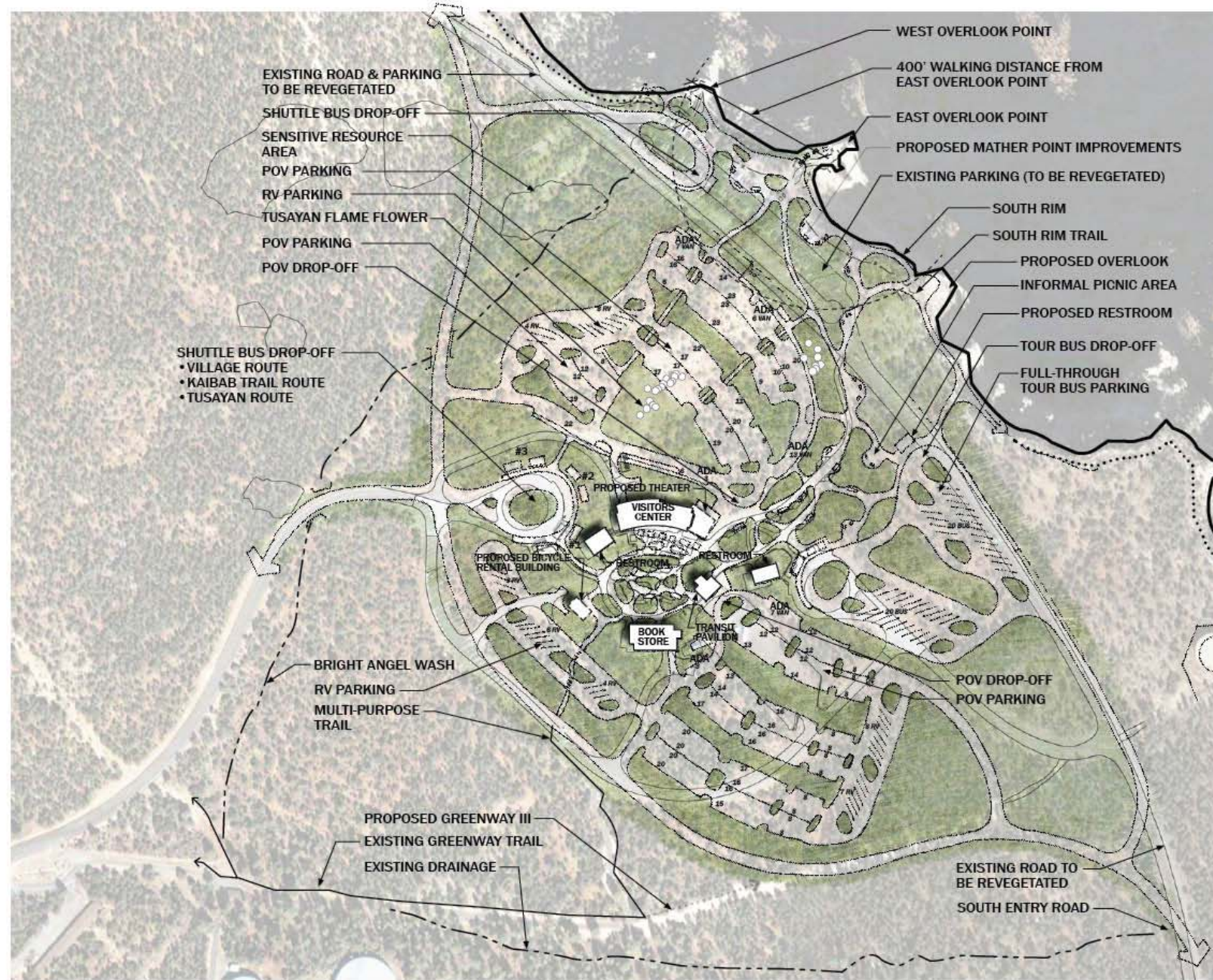
#### Option 1

The new South Entrance Road would reutilize a portion of the existing shuttle bus road while continuing to maintain a park-like driving experience. A minimum 40 to 50 foot buffer of existing vegetation would be maintained on the north side of the road.

This approach explores placing the tour bus drop-off and all 40 tour bus pull-through parking spaces northeast of CVIP. The tour bus parking has a separate exit off the new proposed South Entrance Road keeping high pedestrian traffic separate from traffic created by people exiting their parked vehicles. The tour bus visitors have easy access to the rim from the drop-off area. A proposed vault toilet, shade structures, and picnic seating areas are located near the tour bus drop-off area. The proposed tour bus facilities reutilize the existing east shuttle bus drop-off shelters and paving area.

The plan also reutilizes the existing west shuttle bus stop for all three stops for the Village Route, Tusayan Route and the Kaibab Trail Route. Additional shade structures will be constructed for the additional shuttle bus stops. The east shuttle bus stop will be re-utilized for a second tour bus drop-off and parking area. A second shuttle stop will be provided at the rim and will reutilize some of the disturbed areas at the Mather Point parking and the South Entrance Road. Pedestrian routes will feed from these proposed parking areas onto a main pedestrian path that leads to the rim and the Mather Point overlooks. Additional shade structures and picnic areas are provided along this path.

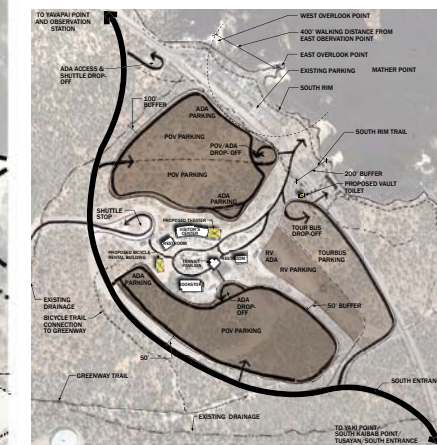
POV parking is divided into two lots with a parking area north of CVIP. A drop-off area is provided close to the rim and the overlook points, with an additional drop-off near the visitor center. A second parking area is located southeast of CVIP and provides a drop-off area at the transit pavilion. ABAAS parking spaces for cars, vans and RVs are provided in both parking areas adjacent to CVIP, the rim, and the proposed theater. Pull-through RV parking has been divided between the two lots.



### OPTION 1

**PARKING SUMMARY:**

PRIVATE OCCUPANCY VEHICLES:	820
ACCESSIBLE PARKING:	
CARS:	10
VANS:	30
TOTAL POV PARKING:	860
RV PARKING:	30
ACCESSIBLE RV PARKING:	10
TOTAL RV PARKING:	40
TOTAL PARKING:	900
TOUR BUS PARKING:	40



Concept Diagram A

## SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT

GRAND CANYON NATIONAL PARK



CONCEPT DIAGRAM  
JANUARY 8, 2007



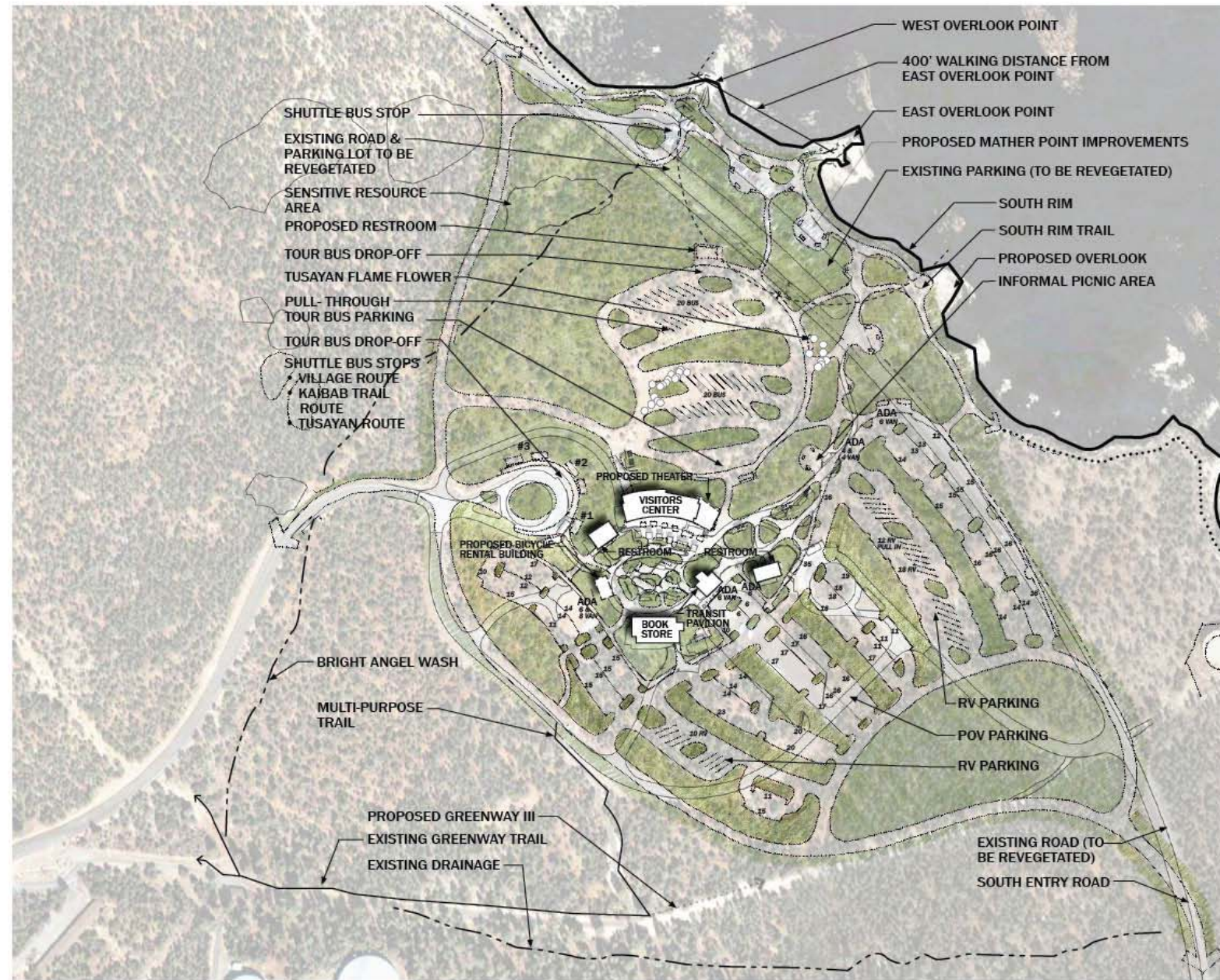
**Option 2**

Option two reutilizes a portion of the existing shuttle bus road for the South Entrance Road while it continues to maintain a park-like driving experience. Access to POV parking is off an interior loop road minimizing parking access points along the South Entrance Road. A minimum 40 to 50 foot existing vegetative buffer is maintained between the road and CVIP.

This approach explores placing the tour bus drop-off and all 40 tour bus pull-through parking spaces north of CVIP. Tour bus pedestrian traffic is separated from the pedestrian traffic generated from the POV lot and provides direct access from the tour bus drop-off to the rim. A second tour bus drop-off is located adjacent to the visitor center near the proposed theater site. A proposed vault toilet has been located near the tour bus drop-off area along with shade structures and picnic seating areas.

All POV parking is located to the south and east of CVIP. Access to the parking is by a loop road that feeds off the realigned South Entrance Road (with a drop-off and accessible parking located in front of the transit pavilion). A bay of cars and a bay of RV pull-through parking has been located closest to the rim. Additional POV parking to the south feeds the visitors more directly into the CVIP area. Accessible parking has been provided along the rim, at the transit pavilion and adjacent to the bookstore. Pedestrian routes will feed from these proposed parking areas onto a main pedestrian path that leads to the rim and the Mather Point overlooks. Additional shade structures and picnic areas are provided along this path.

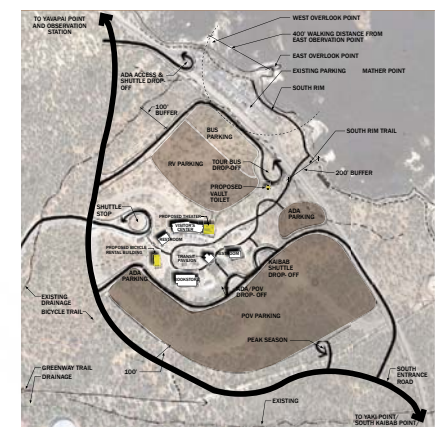
The plan re-utilizes the existing west shuttle bus stop for all three stops for the Village Route, Tusayan Route and the Kaibab Trail Route. Additional shade structures will be built for the additional shuttle bus stops. A second shuttle bus stop will be provided at the rim and will reutilize some of the disturbed areas at the Mather Point parking and South Entrance Road.



**OPTION 2**

**PARKING SUMMARY:**

PRIVATE OCCUPANCY VEHICLES:	820
ACCESSIBLE PARKING:	
CARS:	10
VANS:	30
<b>TOTAL POV PARKING:</b>	<b>860</b>
RV PARKING:	30
ACCESSIBLE RV PARKING:	10
<b>TOTAL RV PARKING</b>	<b>40</b>
<b>TOTAL PARKING:</b>	<b>900</b>
<b>TOUR BUS PARKING:</b>	<b>40</b>



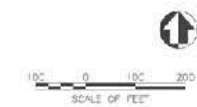
Concept Diagram B

**SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT**

GRAND CANYON NATIONAL PARK

**CONCEPT DIAGRAM**

JANUARY 8, 2007





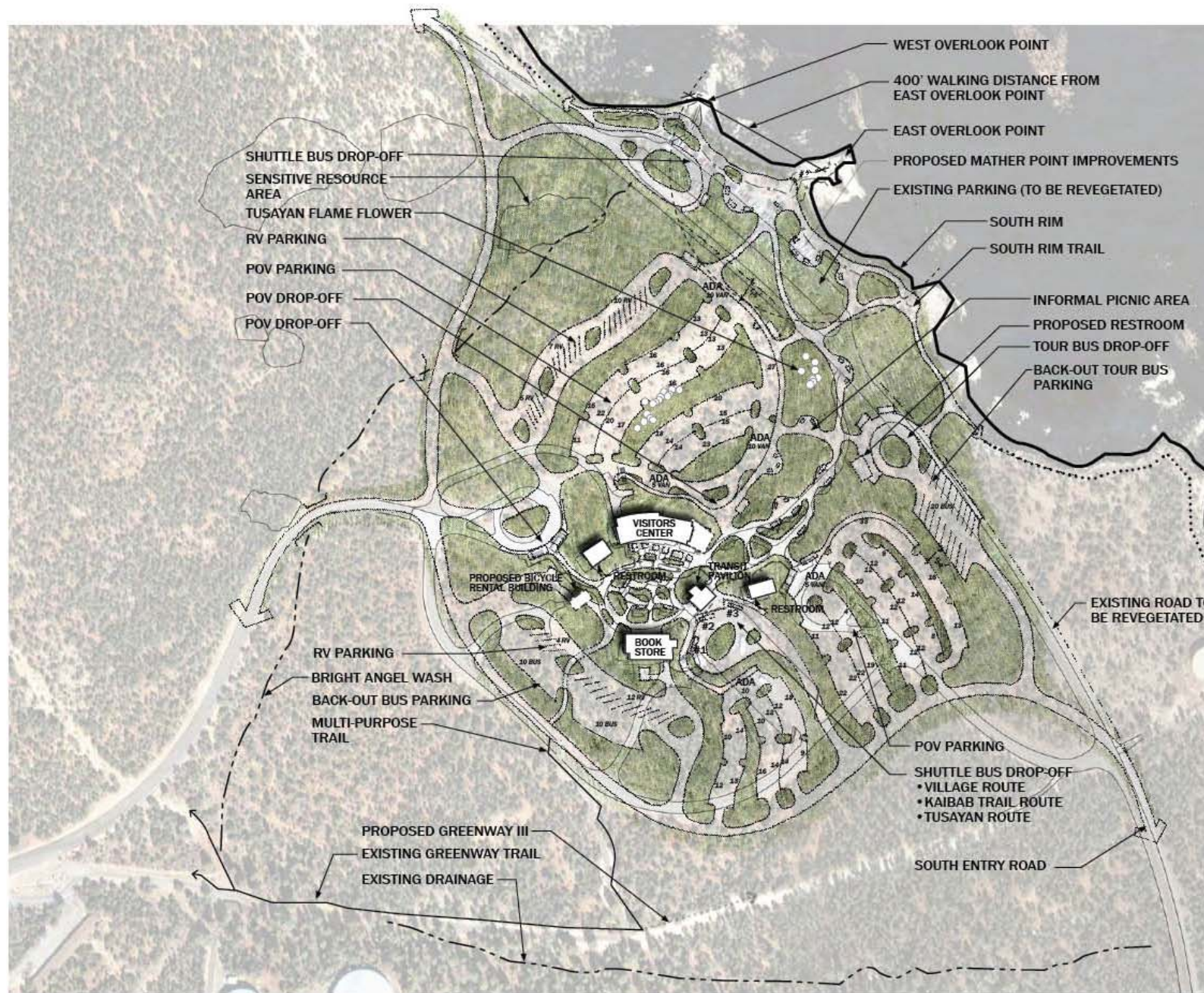
**Option 3:**

This option re-utilizes a portion of the existing shuttle bus road for the proposed South Entrance Road while maintaining a park-like driving experience. The road alignment has been pulled closer to CVIP and access to the parking area is located directly off the re-aligned South Entrance Road. A minimum 40 to 50 foot existing vegetation buffer is maintained between the road and CVIP.

This approach locates the tour bus drop-off and 20 back-in tour bus parking spaces northeast of CVIP with an additional 20 back-in tour bus parking spaces south of the bookstore. Visitors can be dropped off at the rim or at CVIP based on the visitor program. Parking south of the bookstore also allows visitors to walk back to the bus from the rim through CVIP on a downhill slope. A proposed vault toilet is located near the tour bus drop-off area along with shade structures and picnic seating areas.

The POV parking is divided into two areas north and southeast of the visitor center with one drop-off area near the rim and the other adjacent to the visitor center. Parking for 25 pull-through RVs is included in the parking area north of CVIP and an additional 15 RV parking spaces are combined with the tour bus parking south of the bookstore. Accessible parking spaces for cars, vans and RV are provided in both parking areas adjacent to CVIP, the rim, and the proposed theater. Pedestrian routes will feed from these proposed parking areas onto a main pedestrian path that leads to the rim and the Mather Point overlooks. Additional shade structures and picnic areas are provided along this path.

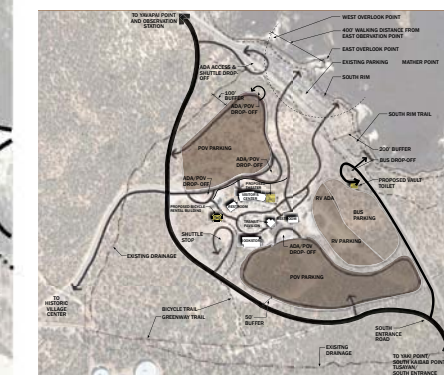
The shuttle bus drop-off area is located at the transit pavilion for all three shuttle bus stops for Village Route, Tusayan Route and Kaibab Trail Route. A second shuttle bus stop is provided at the rim and reutilizes some of the disturbed areas at the Mather Point parking and the South Entrance Road. The existing shuttle bus drop-off areas are reutilized for parking and additional drop-offs.



**OPTION 3**

**PARKING SUMMARY:**

PRIVATE OCCUPANCY VEHICLES:	820
ACCESSIBLE PARKING:	
CARS:	10
VANS:	30
<b>TOTAL POV PARKING:</b>	<b>860</b>
RV PARKING:	30
ACCESSIBLE RV PARKING:	10
<b>TOTAL RV PARKING</b>	<b>40</b>
<b>TOTAL PARKING:</b>	<b>900</b>
TOUR BUS PARKING:	40



Concept Diagram C

**SOUTH RIM CANYON VIEW INFORMATION PLAZA & MATHER POINT**

GRAND CANYON NATIONAL PARK

**CONCEPT DIAGRAM**

JANUARY 8, 2007

