

North Rim

National Park Service
U.S. Department of the Interior
Grand Canyon National Park



Development Plan

September 2006

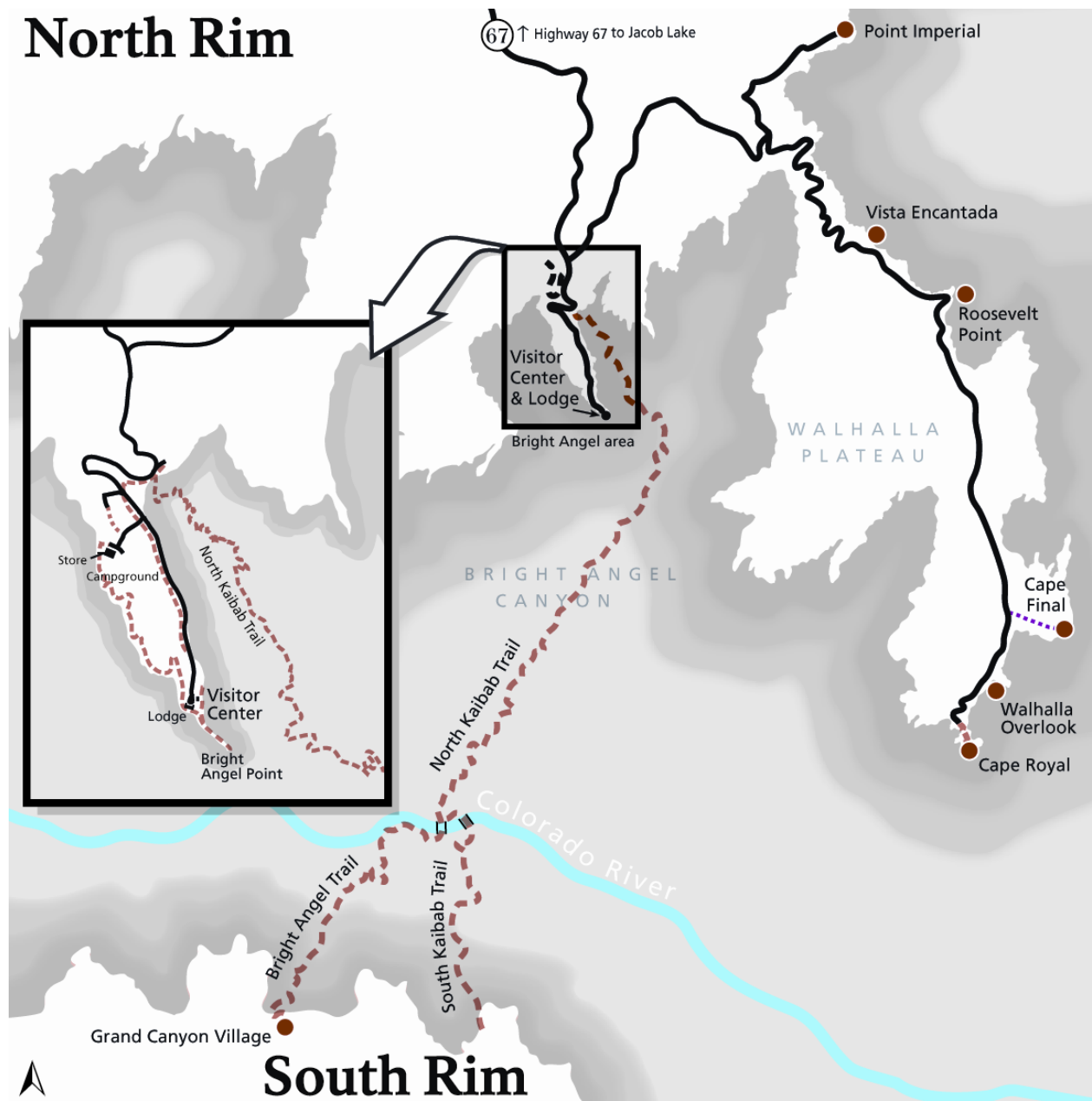


Figure 1. Planning Area, North Rim Development Plan, Grand Canyon National Park

Executive Summary

The North Rim Development Plan outlines a number of enhancements in visitor services, structure utilization, employee housing, and vehicular/pedestrian circulation for the North Rim Unit of Grand Canyon National Park. A Finding of No Significant Impact (FONSI) for the implementation of these actions was recommended by the Science Center Director of Grand Canyon National Park (9/6/05) and Superintendent of Grand Canyon National Park (9/7/05). The Intermountain Regional Director approved the FONSI on September 16, 2005.

The North Rim Development Plan also includes the mitigation measures outlined in the FONSI and Programmatic Agreement developed as part of the NEPA and NHPA compliance completed for the plan and an estimate of the implementation costs for all plan components. The appendix includes an analysis of visitation and transportation, recommendations for employee housing, and a more detailed breakdown of building rehabilitation needs and costs.

Table of Contents

Purpose.....	1
Need	1
Planning Framework.....	5
Development Plan Components	7
Recommended Development Plan Components Outside Park Boundaries.....	7
North Rim Entrance Station Area	8
North Rim Entrance Road.....	8
Bright Angel Peninsula-General	10
CC Hill.....	12
Headquarters Area	14
Campground Area	16
Concessionaire Area	18
Lodge Area.....	20
Mitigation Measures.....	27
Estimate of Implementation Costs	35
Appendix	39
Appendix 1. Visitation and Transportation Analysis.....	41
Appendix 2. Employee Housing Recommendations.....	53
Appendix 3. Building Rehabilitation Needs.....	59
Appendix 4. References	147
Appendix 5. Planning Participants	149

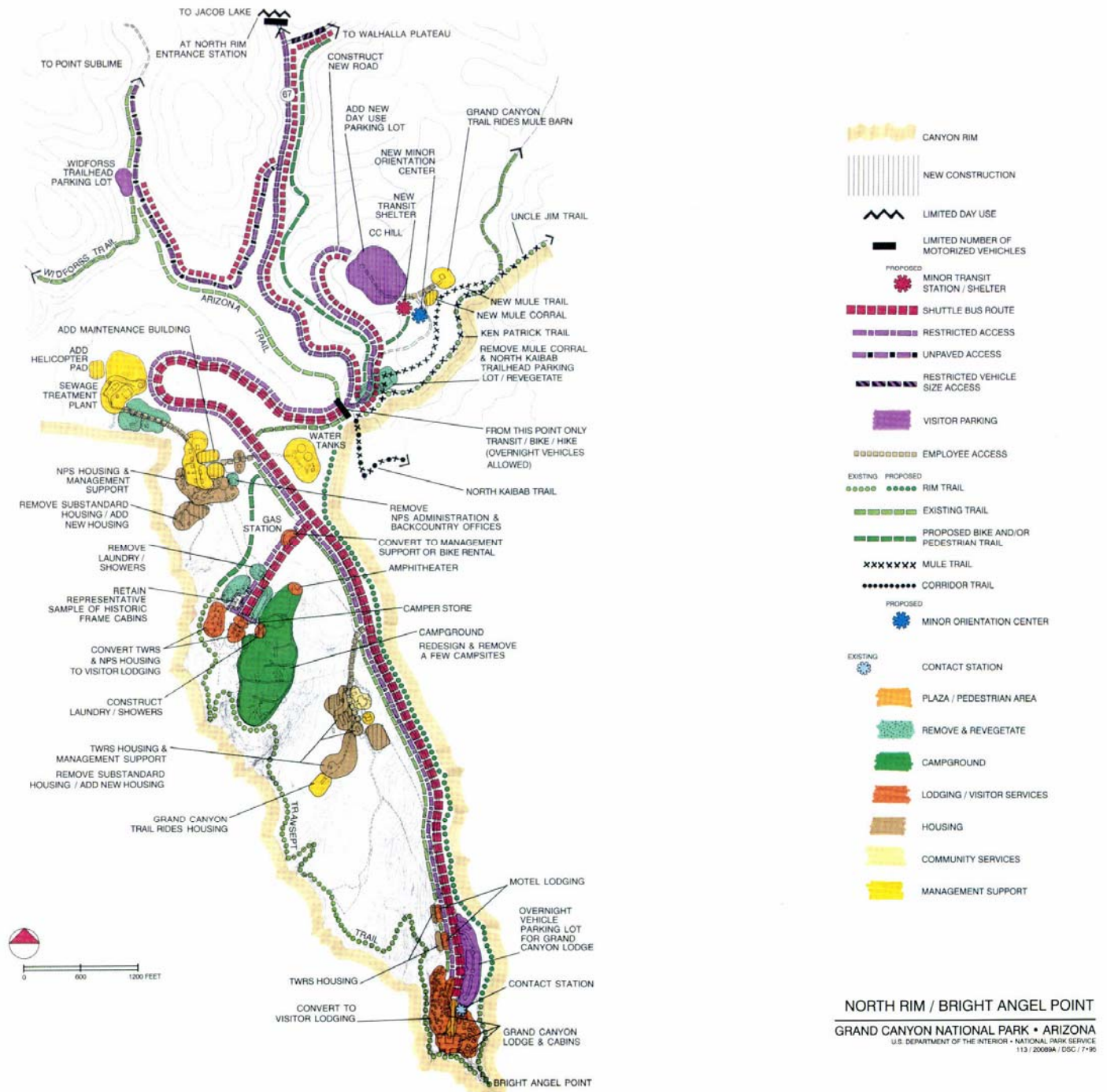


Figure 2. 1995 General Management Plan Components for Bright Angel Peninsula.

Note: TWRS was the hospitality concessionaire for lodging and food service during the writing of the 1995 GMP. Xanterra is the current concessionaire for lodging and food service. Canyon Trail Rides is the current concessionaire for mule rides.

Purpose

The Development Plan was initiated by Grand Canyon National Park management for the purpose of further refining the 1995 General Management Plan direction for transportation, visitor orientation/interpretation, structure utilization and employee housing. The principal study area includes the five development nodes on Bright Angel Peninsula: CC Hill, North Rim NPS Headquarters, Campground, Concessionaire Housing, and Visitor Lodging areas. The boundary of the study area also extends to include Lindbergh Hill, North Rim entrance station, and Arizona State Highway 67 road corridor, which traverses through the Kaibab National Forest between the north boundary of the park and Jacob Lake, Arizona.

Need

The North Rim Unit of Grand Canyon National Park provides a unique park experience in a highly scenic natural environment isolated from major population centers. Visitors can enjoy spectacular views of the Grand Canyon, backcountry trails, rustic lodging facilities, and campground in a ponderosa pine forest setting. While over 4 million people visit Grand Canyon National Park every year, less than 10% of the park's annual visitation is recorded at the North Rim. The north rim side of the canyon provides a low key, slow paced, rustic park experience in contrast to the more highly developed and modernized South Rim area.

The National Park Service (NPS) at Grand Canyon National Park is operating under the direction of the 1995 General Management Plan (GMP) for Grand Canyon National Park. The GMP provides fairly general and programmatic direction and guidance for resource management, visitor use, and general development intended for the next 15 years. The vision for the North Rim of Grand Canyon is to maintain a low key, uncrowded atmosphere that offers visitors opportunities to be intimately involved with the environment. Some of the key management issues specific to the North Rim identified in the GMP include:

- Visitor information and regional orientation before visitors reach the park is inadequate.
- Many visitors favor the current low-key experience, but there is concern that this experience could be lost with increased visitation.
- Traffic flow is poor and signs are confusing in particular areas. There is not enough parking on Bright Angel Point.
- Orientation and information services are inadequate.

Several development projects identified by the General Management Plan for the Bright Angel Peninsula area of the North Rim Unit have been initiated with design and/or construction efforts currently underway. (An outline of the overall planning components for the Bright Angel Peninsula is illustrated in *figure 2*.) Major projects programmed or recently completed include a new emergency services and wild land fire facility, reconstruction of the administration building, replacement of the campground registration kiosk, rehabilitation of the campground roads, rehabilitation of area comfort stations, construction of a new 44-unit dormitory for housing concessionaire employees, rehabilitation of 15 recreational vehicle spaces for housing concessionaire employees, rehabilitation of exposed frame cabins, establishment of an incident command post on Lindbergh Hill for wild land fire response, and rehabilitation of the North Rim water system. These projects are considered consistent with the General Management Plan and will be treated as existing conditions for the purposes of this planning effort. Significant portions of other development work remains to be initiated, specifically the General Management Plan direction for transportation, visitor orientation and interpretation, structure

utilization and employee housing. These areas require a more focused analysis of the development needs and assessment of environmental impacts before major program changes identified in the General Management Plan can be implemented. Current issues and conditions prompting a more detailed examination of implementation needs for each of these planning directions are outlined below:

Visitor Services

Beyond the entrance station, the Visitor Center (contact station) in the Grand Canyon Lodge area is the first formal orientation facility encountered by the visitor. This creates quite a draw to an already crowded area of the North Rim. The park recognizes that improvements in orientation prior to arriving at the Visitor Center are needed, in order to provide a low-key uncrowded atmosphere on the North Rim. This includes the consideration of the GMP vision for improvements at the Kaibab Plateau Visitor Center at Jacob Lake, Arizona and the potential for orientation and enhanced interpretation between Jacob Lake and the Visitor Center.

The developed area of the North Rim is a seasonal operation, open approximately from mid-May to mid-October annually. The Grand Canyon Lodge offers a unique visitor experience, as it is perched on the edge of the rim. The Lodge is currently operated by Xanterra Parks and Resorts. As on the South Rim, demands for lodging and camping accommodations far exceed supply. Overnight facilities are full most of the time. Food service, also currently operated by Xanterra Parks and Resorts, is provided in four locations. The Grand Canyon Lodge dining room is a full-service restaurant. There is a cafeteria (Café on the Rim) at the Lodge that offers limited food service and convenience foods morning until evening. The bar offers alcoholic beverages and snack foods in the evening, and coffee and pastries in the morning. Demands for both lodging and food service opportunities exceed current capacity.

Transportation & Circulation

The 1995 GMP proposed a transit system for the North Rim to alleviate traffic congestion at the terminus of Bright Angel peninsula. Under the GMP direction, the transit system would require mandatory ridership for all day visitors to Bright Angel Point, unless they wished to hike or bike to their destination. Overnight guests would receive a pass to drive to their lodging or campsite and park, and would then have to use the transit system for other excursions on the peninsula. Transit service to Walhalla Plateau would be encouraged for all visitors although it would be optional for visitors traveling in vehicles less than 22 feet long. An orientation center, staging area and transit center would be developed on CC Hill (*figure 2*).

During the period 1970 through 1989 total visitation to the park had increased by an average of 4% a year. Based on these trends, visitor use and transportation studies predicted continued growth rates for future years. Traffic was projected to increase 20% over the next twenty years for the peak use month of July. In the 1995 GMP, visitation to the North Rim of Grand Canyon was projected to increase by 16.5% from 1993 to 2010 (436,000 to 508,000 visits per year). Since the completion of the GMP, the park has experienced declining visitation rates. As part of this development planning effort, visitation projections were reevaluated to determine the feasibility of implementing a transit system at this time.

The Lodge area road and parking area was originally designed in the late 1930's to accommodate the dimensional requirements of period automobiles and 20-30 passenger touring vans. Today, while the automobile is the favored mode of transportation for a majority of North Rim visitors, the touring van has evolved into a much larger scale, 55-passenger tour bus or travel trailer. The cul-de-sac at the terminus of the lodge entry road is easily congested when

tour buses find their way into this area to drop visitors off at the Lodge entry. Bus traffic creates a safety concern for pedestrians who are circulating between guest cabins, restaurant, lounge, curio shop and post office, all of which surround this terminus. In addition, early bus tour arrivals (often prior to 6 a.m.) disturb guests in cabins adjacent to this roadway. Improvements in traffic circulation are needed in this area that is compatible with the cultural landscape.

The North Kaibab Trailhead area currently experiences overflow conditions on a consistent basis. During peak use, the lot currently fills to capacity and overflow parking is accommodated in the grass area adjacent to the entrance road shoulder, which creates an unsafe situation. The 1995 GMP relocated the trailhead parking area to the transit staging area on CC Hill.

The 1995 GMP includes the development of a rim trail to connect CC Hill, Grand Canyon Lodge and the Transept Trail, in order to encourage visitors to hike and bike these areas (*figure 2*). The existing Bridle Trail currently connects these areas to some extent, but is a narrow footpath, often very steep in areas, and is not accessible for people with disabilities, nor is it suitable in all areas for bicycles. The GMP also includes the development of a Greenway Trail on Walhalla Plateau to link Point Imperial and Vista Encantada, but this is not being evaluated for implementation at this time and as it will require a more focused planning effort.

Structure Utilization

There are five historic structures located in the North Rim Headquarters area that currently support emergency services and wildland fire function. These functions will be relocated to the new Emergency Services/Wildland Fire facility once construction of this new complex is complete. Options for adaptively reusing these vacated structures are needed. A need was also identified to explore the most appropriate use of the trail crew bunkhouse in the Headquarters Area and to evaluate the feasibility of relocating the auto repair shop function for NPS from its existing location within the Concessions Area to a location within the Headquarters area. This would consolidate functions and has the potential to create a more efficient park operation.

The laundry/shower building in the Campground Area was identified in the GMP as undersized for projected visitation and the GMP recommended that a new laundry/shower facility be constructed within the campground. The existing building is also in need of rehabilitation. The historic log restroom near the Camper Store is currently being used for storage. Since this structure is historic and located within the campground, the park wanted to evaluate if there was a more appropriate use for this building, such as a laundry/shower facility or for interpretive display space. The backcountry permits office is currently located in the administration building in the Headquarters Area and gas service for the public is provided at the gas station in the campground area. The GMP relocates the backcountry permit function with the transit staging area proposed on CC Hill and removes gas service from the peninsula. The park requested a re-evaluation of the validity of these GMP recommendations.

The GMP proposes relocation of the NPS auto shop function, currently in the Concessionaire Area, to a new structure in the Headquarters Area. In addition, the mule barn currently used by the concessionaire is in need of repair. The principal use of this mule barn was discontinued when the mule staging area for concessionaire trail rides was moved from this area to CC Hill, and now the concessionaire uses it primarily for isolation of sick animals and for storage. The ownership of the building and whether it is eligible for listing on the National Register of Historic Places is not entirely clear at this time. A determination of its eligibility, ownership and whether the current use is the most appropriate is needed.

Employee Housing

The GMP direction for housing was used as a basis from which to initiate an evaluation of current employee housing needs for the North Rim. The GMP identified the need to construct a number of new employee housing units to replace a number of substandard units, units proposed for conversion to visitor lodging, units needed for projected staff increases, and units needed to eliminate triple bunking. A duplex, four-plex, six-plex and eight-plex were constructed in 1999. Under this current planning effort, two areas on Bright Angel peninsula were identified for future housing development: The NPS Headquarters Area and the Concessionaire Area. The need for housing at Jacob Lake was also considered. Two more recent housing plans have been completed for the North Rim since the completion of the GMP (ARC 2000 and NPS 2002b). Several conditions were identified by park staff during this development planning effort that required a re-evaluation of the conclusions reached in these two reports including the fact that the reports were based on 1998 employment records and that two major NPS-wide programs that have an impact on housing demand (National Fire Initiative Program and the Recreation Fee Demonstration Program) were not anticipated or considered during the recent housing assessments, and both have resulted in the hiring of additional (either temporary or permanent) staff for the North Rim.

North Rim staff has also identified a need for the designation of a seasonal camping area for NPS employees and volunteers working for short periods of time on the North Rim. Currently there are loose parameters regarding this activity on the North Rim and camping sites have been set up throughout the NPS Headquarters Area during the summer months by employees and volunteers conducting field work or other duties for short periods of time. Camping is an appropriate way to accommodate employees and volunteers working for short periods, but a consolidated area with appropriate temporary facilities is needed to minimize impacts on the landscape and provide appropriate accommodation (potable water and sewage disposal). There is a need to eliminate this sporadic and dispersed camping from the Headquarters Area and to consolidate this use into a more appropriate location.

Planning Framework

The planning framework for the North Rim Development Plan effort was guided by the GMP vision for the North Rim, specifically to provide a low-key, uncrowded atmosphere that offers visitors opportunities to be intimately involved with the environment. Specific objectives for the development planning effort included:

1. Preserve the rustic character of the North Rim.
2. Improve distribution of visitor use on Bright Angel Peninsula.
3. Encourage visitor use of Walhalla Plateau.
4. Improve visitor orientation/information services outside the park through agency partnerships.
5. Improve visitor orientation and interpretation services within the park.
6. Improve pedestrian and vehicular circulation at Bright Angel Point.
7. Evaluate employee housing needs and the best use of existing structures, including those related to visitor facilities and support functions.

These objectives were used to evaluate and compare the merits of each alternative solution generated through the planning process. A FONSI, Programmatic Agreement with the Arizona SHPO, Environmental Assessment, Draft Development Plan, and Choosing by Advantages Report, and Building Condition Assessment were prepared to document the data collection, analysis, alternatives development, impact analysis, and rationale for decision-making resulting in the approved development plan (ref: North Rim Development Plan including NEPA and NHPA compliance record). The plan proposes a “light touch” approach to addressing the purpose and need for action and meeting the objectives of the project, with special focus on improving existing infrastructure, programs, and services over introducing new facilities into the area.

Development Plan Components

A majority of the plan components focus on improvements in visitor services, structure utilization, employee housing, and vehicular and pedestrian circulation within the Bright Angel Peninsula area of the North Rim Unit, Grand Canyon National Park. Major action items are listed in *figure 4* and are further described by development area in the sections that follow. The development plan also includes a number of enhancements along the North Rim entrance road and recommendations for visitor orientation enhancements outside of the park boundary.

Recommended Development Plan Components Outside Park Boundaries

While lands outside of the park boundary are not under NPS jurisdiction, the relationship of the Kaibab Plateau Visitor Center in Jacob Lake, Arizona and the scenic roadway, Highway 67, between Jacob Lake and the park entrance present a unique opportunity to enhance visitor orientation and expectations for the north rim unit prior to entering the park. The 1995 GMP described a vision for the Kaibab Plateau that has been partially implemented, through cooperation with the U. S. Forest Service (USFS). This North Rim development planning effort includes the consideration of additional improvements in this area.

Kaibab Plateau Visitor Center, Jacob Lake – Implementing enhancements at this location will require the initiation of a partnership planning effort between the NPS and the USFS. While cooperative efforts between NPS and USFS for operation of this visitor center are on-going, efforts will be strengthened. Specific issues that will be addressed include an evaluation of the need for, and the feasibility of, expanding the visitor center or reconfiguring existing space; exploring options for improving the visitor center parking area to address drainage problems, accessibility issues, and the need for a different configuration; developing appropriate displays and orientation information for the existing 24-hour kiosk; and exploring options for improving road signage and road configuration in the area to improve visibility of the visitor center and access to it (USFS has been working with the Arizona Department of Transportation on this issue).



Kaibab Plateau Visitor Center at Jacob Lake.

Highway 67 Corridor - Other options under consideration by the USFS and NPS for enhancing orientation and interpretive opportunities along Highway 67 from Jacob Lake to the park include implementing a Traveler Information System (TIS) that will use a local radio station to broadcast regional information, implementing an auto tour or pamphlet identifying points of interest, and improving road signage.

North Rim Entrance Station Area

Establish Orientation Kiosk - An un-staffed orientation kiosk and pull-out south of the entrance station will be established. The kiosk will provide information about the Walhalla Plateau to encourage visitors to travel the road to Cape Royal and Point Imperial, and provide other pertinent information on services and opportunities on Bright Angel peninsula. The kiosk will be located on the west side of the road, just south of the entrance station, to provide visitors with an opportunity to become oriented to this area of the park immediately upon entry. The site selected will minimize new ground disturbance and provide easy 24-hour access for visitors. The paved, parallel parking pull-out will accommodate 2 to 3 standard size vehicles and one oversized vehicle.

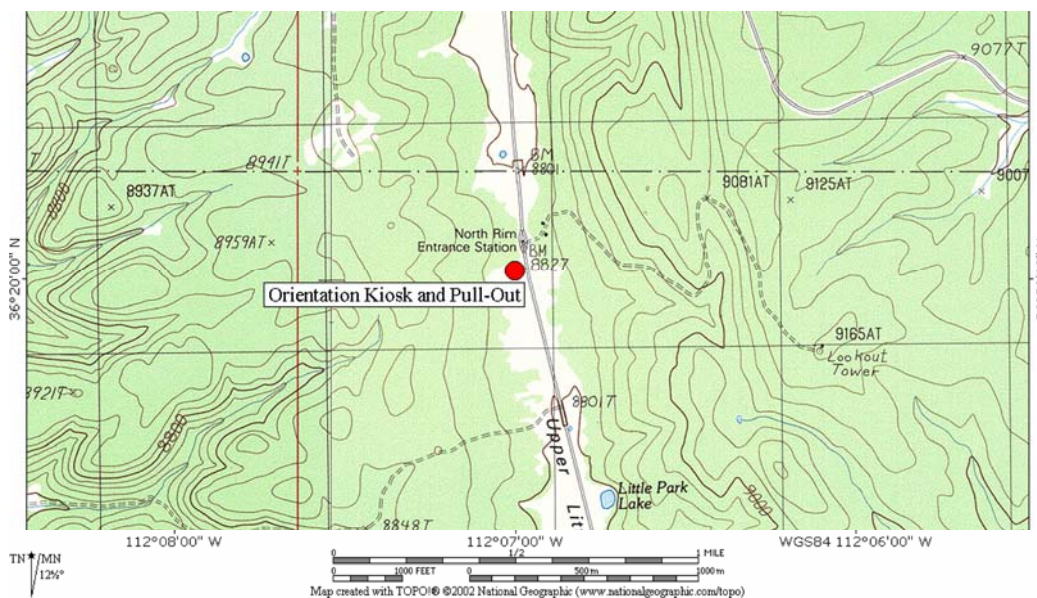


Figure 3. Development Plan Component, North Rim Entrance Station

North Rim Entrance Road

Enhance Visitor Orientation – Improvements to existing road signage throughout the North Rim road system will be guided by the preparation of a sign plan. Implementation of a Traveler Information System (TIS) along the same road network, as well as adding an auto tour with "Points of Interest" from the North Rim entrance station to Walhalla Plateau scenic overlooks and Bright Angel Peninsula will be programmed. A driving tour pamphlet will be developed to test appropriate locations for pull-offs.

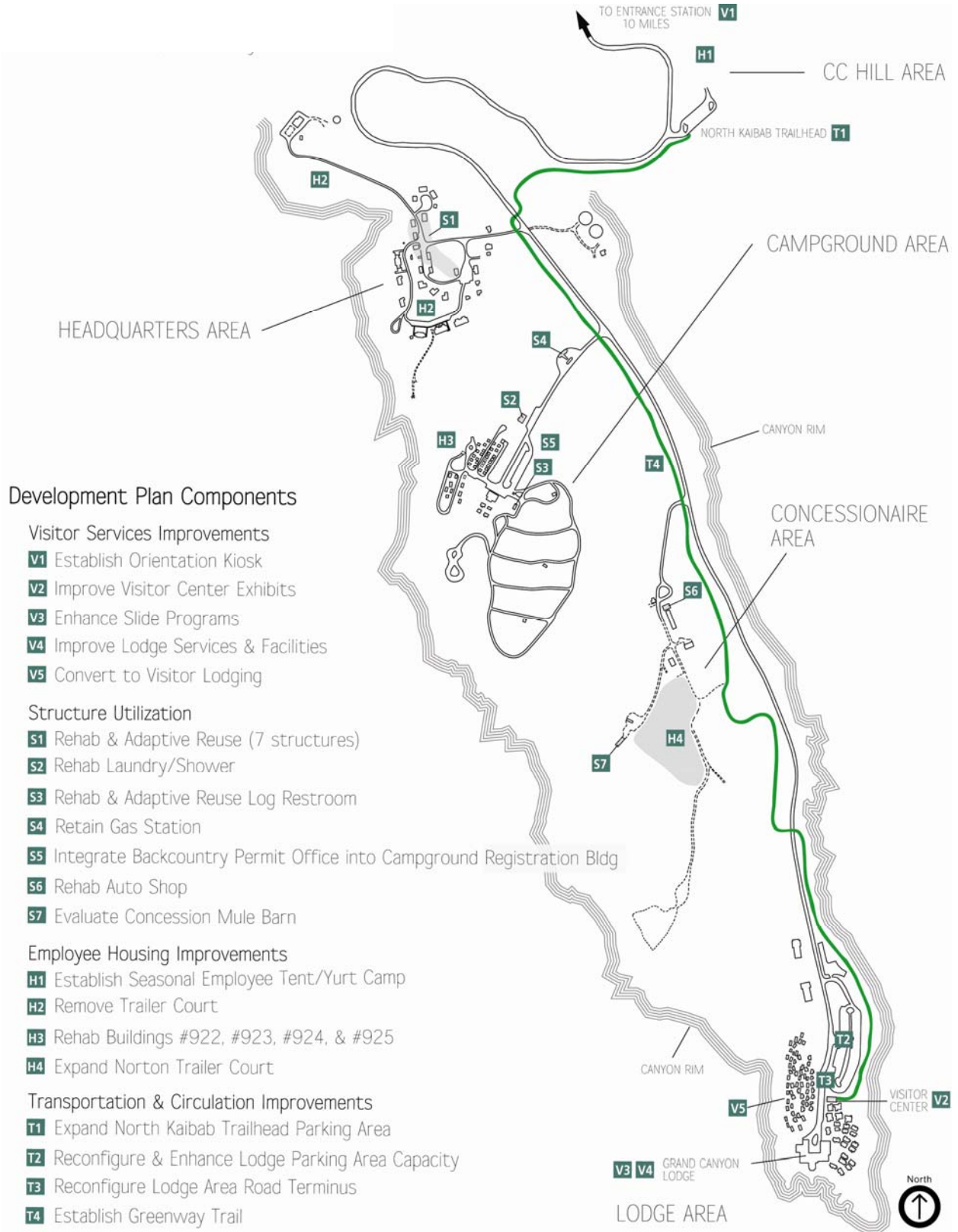


Figure 4. Development Plan Components, Bright Angel Peninsula

Bright Angel Peninsula-General

Enhance Interpretive Opportunities Along Area Trails – A sign plan will be prepared to outline recommendations for improving directional and informational signs along area roads and trails. This would also include enhancing interpretive messages along area trails.

Establish Greenway Trail – A North Rim segment of the Greenway Trail will be established connecting Kaibab Trailhead and Grand Canyon Lodge. This approximately 2-mile long multi-use trail would follow the alignment of the existing Bridle Trail. The Greenway Trail would improve this existing trail, using its current alignment, and it would be designed for multiple uses including pedestrians, bicyclists and equestrians. It would be no more than 8 feet wide, which would equate to increasing the existing width up to approximately 2 additional feet in some areas. Reducing the existing width, in areas where it is currently greater than 8 feet, would not occur. In other words, no newly constructed trail segment would have a width greater than 8 feet, but if the existing width is already greater than 8 feet, efforts would not be used to reduce the existing width. Constructed trail width would also vary according to the terrain and the presence of trees and would be narrowed below 8 feet as needed in places to avoid having to remove trees. The trail would not be paved but a soil hardener would be used to provide a more even surface, minimize erosion and reduce the need for maintenance. The trail would be designed to meet current accessibility standards from the Headquarters Area to the Lodge Area. The existing steep section of trail from the North Kaibab Trailhead up to the headquarters area does not meet current accessibility standards.

There is only one area where the Greenway alignment will need to veer substantially off of the existing Bridle Trail alignment. This new trail section, approximately 0.2 miles in length, will be constructed approximately 300 feet from the existing trail in an area of steep terrain just south of the Concessionaire Area. In order for the trail to meet current accessibility standards, a long switch back is necessary in this area to minimize the steepness of the trail. Several pull-outs for wheelchairs will also be necessary in this section where the grade dictates. Pullouts will be approximately 20 feet long by 10 feet wide and will simply be a wide, flat spot in the trail where wheel chair users could stop and rest as necessary.

Although tree removal will be avoided as much as possible, there are two areas where removal of some trees will be unavoidable; one is the switch back area described in the above paragraph where 3 – 8 small aspen trees, less than 6 inches dbh, will be removed, and the second is an area of thick oak saplings, just before the trail enters the Lodge area, near the Visitor Center. In this 40 – 50 foot long section of trail, several small oak trees will need to be cleared to provide enough width for the trail. While it is possible that an occasional ponderosa pine or white fir tree may require removal for construction of this trail, this removal will be minimized as much as possible. No trees over 12 inches dbh will be removed. Some rock lining will be necessary along portions of the trail for steep areas where the terrain dictates. A single tier rock wall will need to be constructed in some steep areas of the trail. Native stone will be used for these features.

Two road crossings will be required; both will be striped and signed as pedestrian/bicycle crossings.

At both ends of this trail segment, at the North Kaibab Trailhead and at the Visitor Center area near the Lodge, small gathering points will be created. These areas will include interpretive and wayfinding signage with simple bench seating on a hardened, all weather surface. Both areas will be of simple design. The design for the terminus of the trail near the visitor center will take into consideration its location within the historic district and the surrounding cultural landscape.

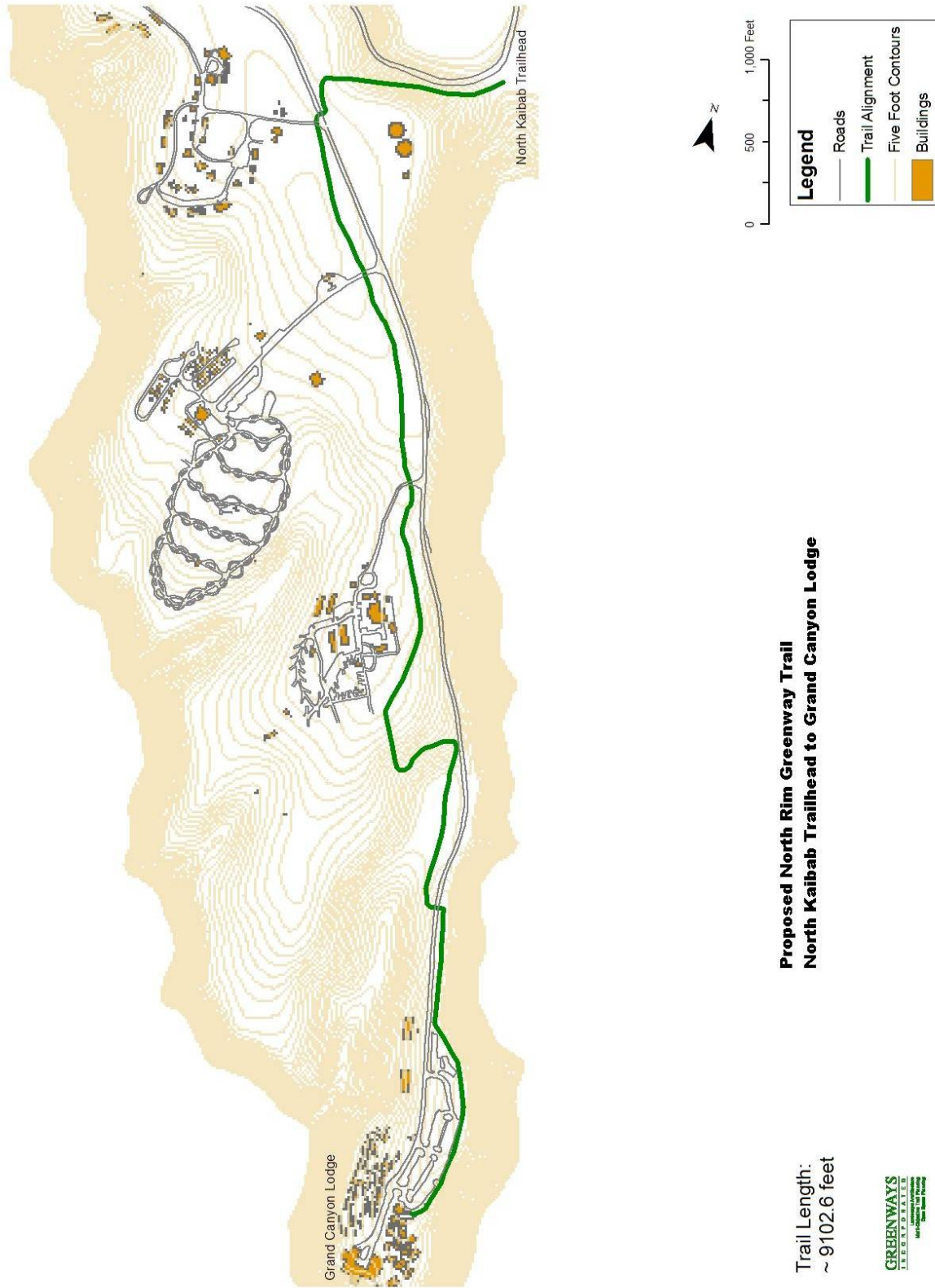


Figure 5. Development Plan Component, Greenway Trail

CC Hill

Expand North Kaibab Trailhead Parking Area - The parking capacity in this parking area will be increased by approximately 15 automobiles and two oversized vehicles by extending the paved surface on the northwest side by approximately 12 feet. By providing this additional width, head-in angled parking for 17 cars will be provided. The oversized parking currently provided on this side of the parking area will then shift to the southeast side and will be delineated through striping. To ensure enough width for the travel lanes, the center area striping will be shifted approximately 10 feet to the northwest. (See plan on adjacent page) This proposal will result in less than 0.10 acres of ground disturbance and will not require the removal of any trees over 3 inches dbh.



Kaibab Trailhead Parking Area

Establish Seasonal Work Camp - A seasonal work camp area will be designated in previously disturbed areas on CC Hill. The camp will be located in an existing clearing immediately northeast of Horse Camp, an area available for visitors to camp with their horses. The area is approximately 0.5 acres in size and was previously used as a storage/dumpsite area that has since been cleaned up. The camp will be used in the summer season, on an as-needed basis, to provide a designated and consolidated camping area for NPS volunteers and other seasonal NPS employees on the North Rim, when conducting field work or to perform other assigned duties for short periods of time. The camp will only be set up when needed. Portable chemical toilets, picnic tables, a campfire ring, and 1-2 larger tents or yurt-style tents will typically be on site during the summer when in use. Piped water is already on site and will provide drinking water. There will be space for individual tents to be set up, but no tent pads will be necessary. It is anticipated that no more than 20 employees/volunteers will be on site at any one time, with a typical range of 10 – 12 people. Parking needs are minimal, as most groups typically arrive in multi-passenger vans or buses. No new ground disturbance or tree removal will occur. When not in use and during the off-season, the set-up (toilets, large tents/yurts) will be removed.

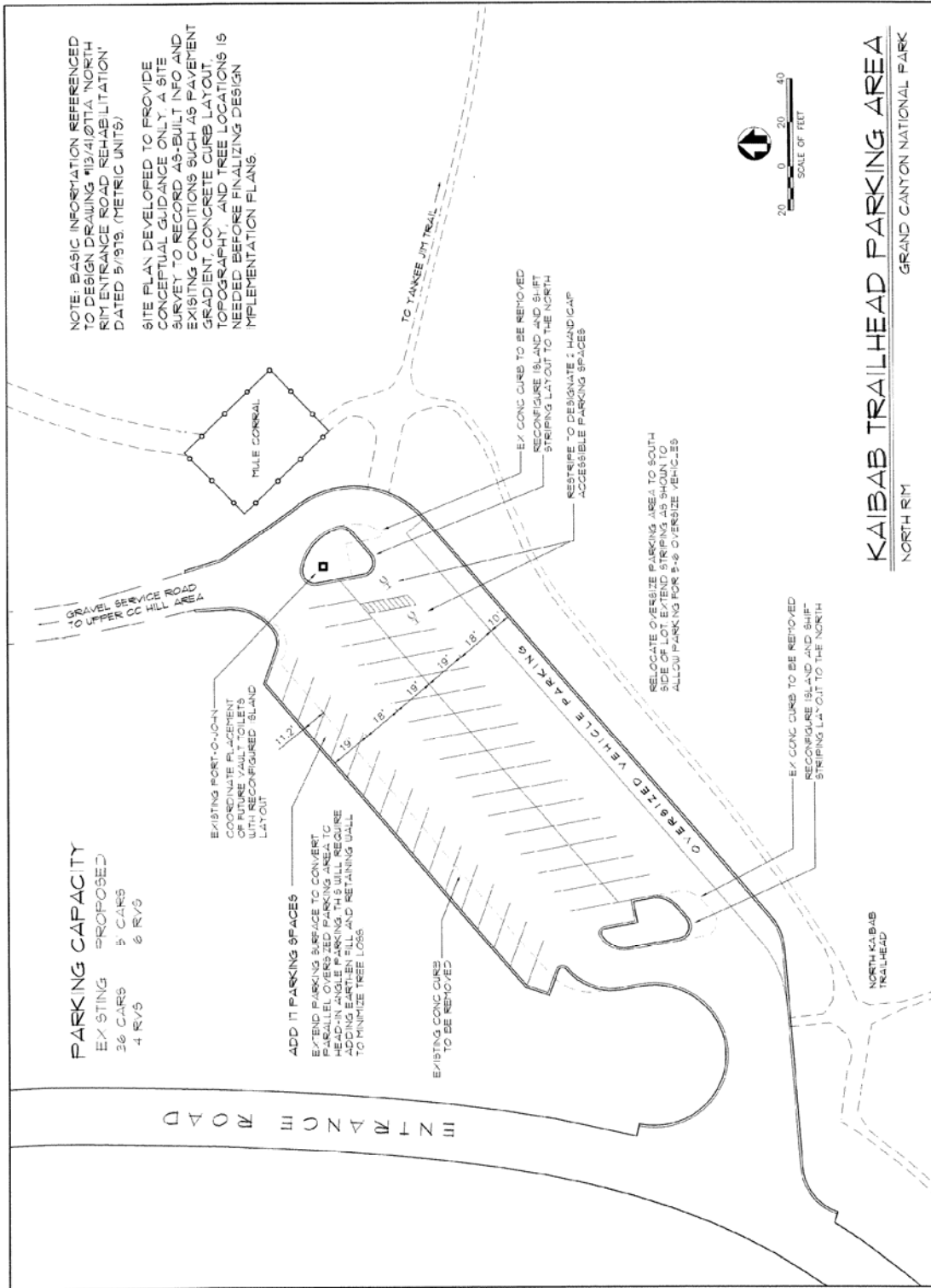


Figure 7. Development Plan Component, Kaibab Trailhead Parking Area

Headquarters Area

Rehabilitate and Adaptively Re-Use Historic Buildings - There are five historic structures located in this area that currently support emergency services and wildland fire functions. These functions will be relocated to the new Emergency Services Wildland Fire complex once construction for this new facility is complete. Once these functions are moved, the buildings will become vacant and will be available for other uses. NPS proposes to use these historic buildings for other administrative uses, compatible with the historic setting and original use of this area for NPS administrative offices and housing. These actions are described below.

- Rehabilitate and retain use of the warehouse (building #118, which is currently used as the fire management office and community building), for management support functions. These include use as a temporary office, storage, and the NPS mail distribution center. The non-historic concrete porch and steps will be removed.
- Rehabilitate and convert two ranger offices (building #119); the north office to interpreter's office and the south office to fee supervisory office. Explore options to increase interior office space layout by removing wall partitions.
- Rehabilitate the holding facility (building #125, gas and oil station) to interpreter's office space.
- Rehabilitate and convert the fire equipment shed (building #126, currently used to house the fire truck and ambulance) to winter storage for vehicles. The non-historic rear addition will be removed.
- Rehabilitate and convert the wildland fire cache (building #171) to maintenance office, meeting space and storage space. Computer and phone lines will be provided.
- The trail crew bunkhouse (building #111) and road and trails building (building #127) will be rehabilitated and their current use retained.

Once these buildings are rehabilitated, the temporary storage containers ('con-ex' boxes), currently located in the middle of the Headquarters Area and creating an adverse visual impact to the surrounding historic district, will be relocated to more suitable locations.

A more detailed description of rehabilitation actions needed for each structure as well as estimated quantities and costs can be found in Appendix 3.

Remove Helibase & "Cochary" Trailer Courts - No new housing is proposed for the Headquarters Area and the two areas currently used as temporary housing for employees in two informal trailer courts will be removed. The employees using these areas will be relocated to the exposed frame cabins in the Campground Area when the rehabilitation of these cabins is complete (project is currently underway). Some employees will also be accommodated in the expanded Norton Court in the Concessionaire Area. The helibase and "Cochary" trailers will be removed and relocated and the sites restored.

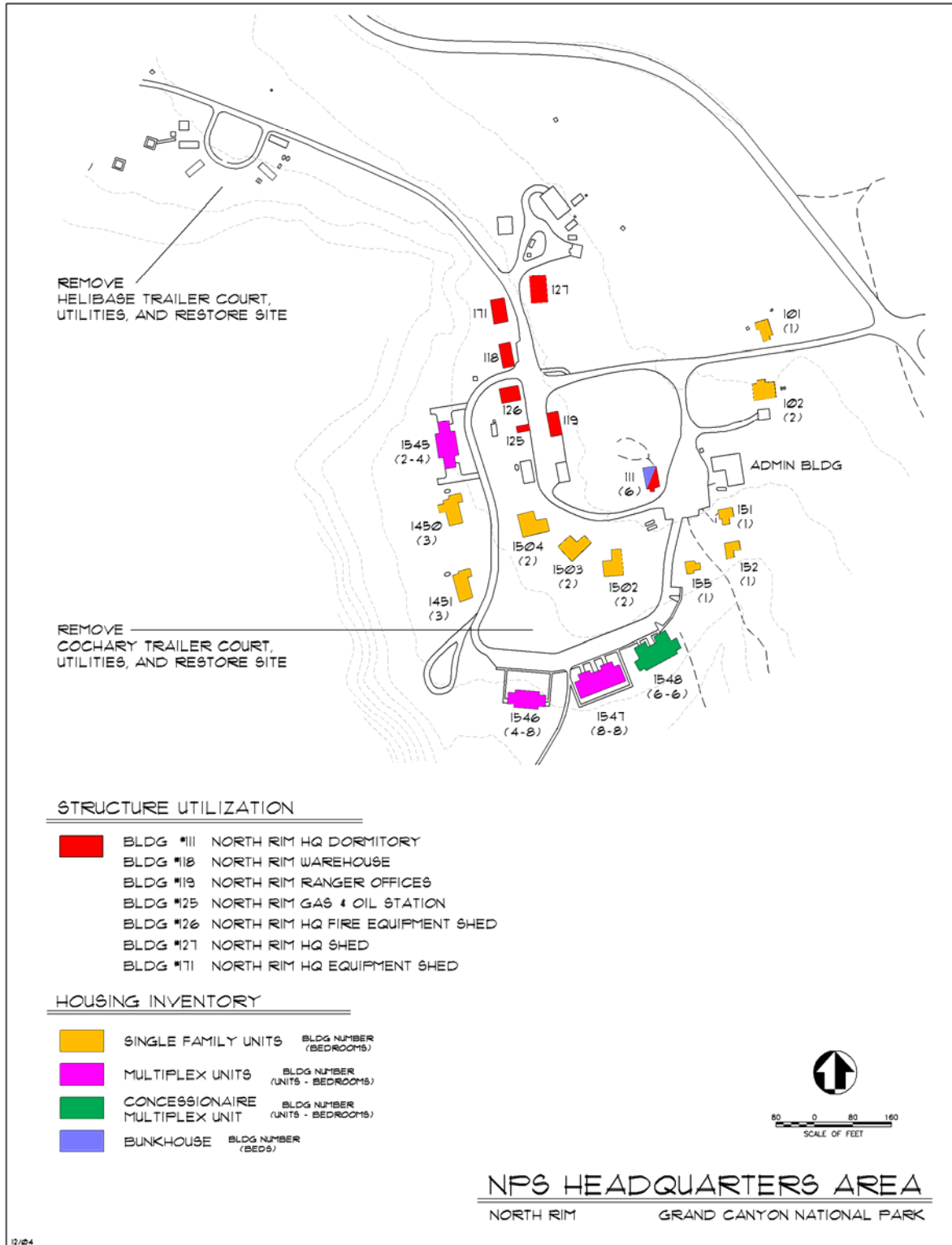


Figure 8. Development Plan Components, NPS Headquarters Area

Campground Area

Rehabilitate and Adaptively Re-Use Historic Buildings - A recent condition assessment found that the non-historic public laundry/shower building (building #1568) in the campground is in good to fair condition and the capacity appears to be satisfactory. The structure will be rehabilitated and retained for its current use. While the historic log restroom (building #134) provides needed storage space, it is an attractive historic building that could be used in a more public fashion. NPS proposes to rehabilitate the structure and consider other uses, such as adaptive reuse as interpretive display space available to visitors in the campground. With the deferment of a transit system for the foreseeable future, the existing gas station (building #916) will be retained to continue providing visitors gasoline and vehicle service.

A more detailed description of rehabilitation actions needed for each structure as well as estimated quantities and costs can be found in Appendix 3.

A new campground registration building is currently being constructed as part of a campground rehabilitation project. Interior space will be provided to accommodate backcountry permitting, thereby consolidating permitting functions into one location.

To address housing and associated needs in the Campground Area, the following actions will be programmed:

- Rehabilitate the historic duplex log cabin (building #925) and convert it to seasonal housing.
- Rehabilitate the historic shower/bath building (building #922) and convert it to a community building.
- Rehabilitate the historic laundry (building #923) and use it as an employee laundry facility, for employees housed in the rehabilitated exposed frame cabins in this area.

Rehabilitation of the historic exposed frame cabins and both the shower/bath building and the laundry building was the subject of a separate Environmental Assessment/Assessment of Effect. The implementation of phase 1 of this rehabilitation has begun. The exposed frame cabins, when complete, will provide much needed seasonal employee housing. These units, however, are not intended to provide housing over the winter. NPS does not intend to increase the number of employees who over-winter on the North Rim.

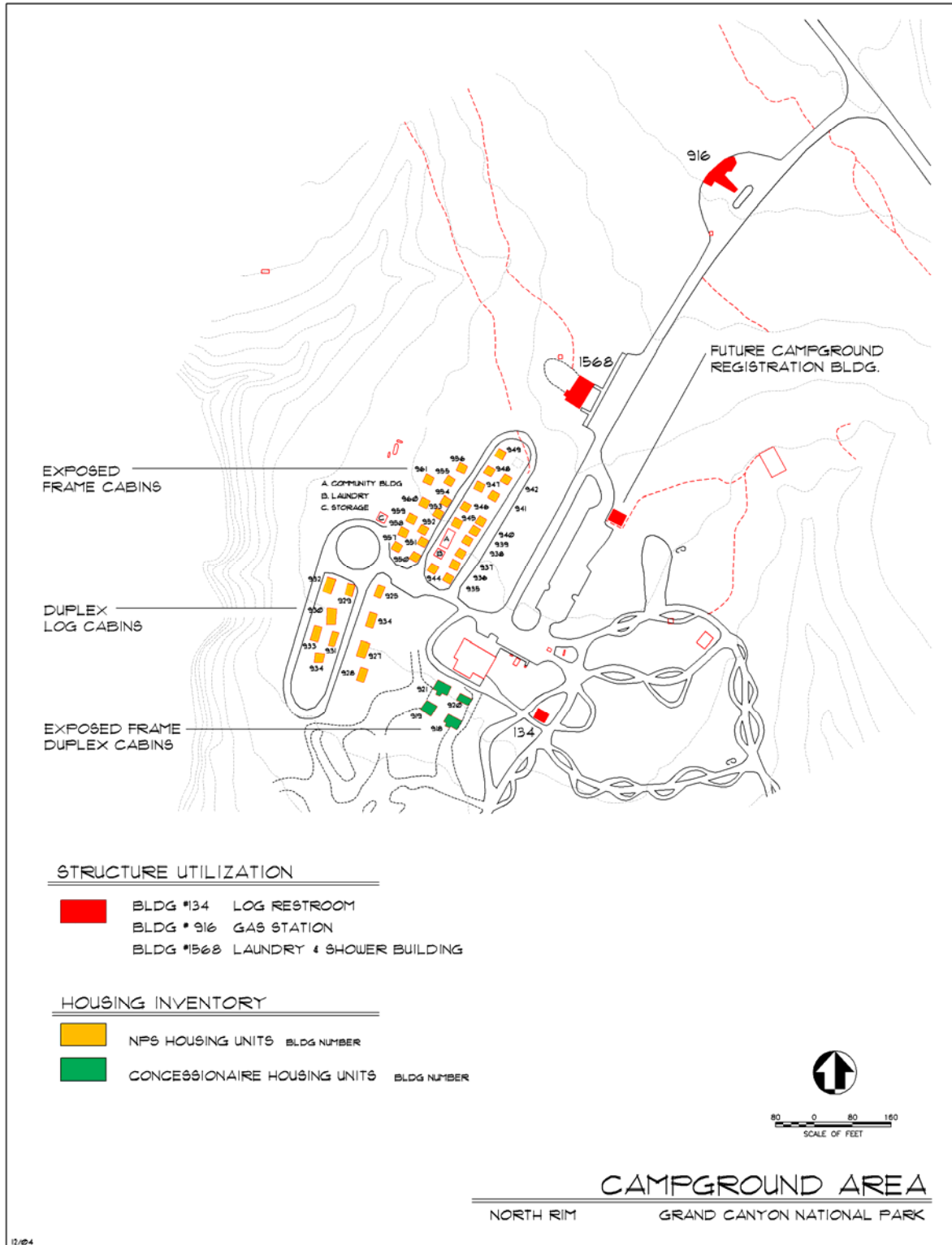


Figure 9. Development Plan Components, Campground Area

Concessionaire Area

Rehabilitate Buildings - The NPS auto shop (building #963) will be rehabilitated and retained; however, NPS will explore the feasibility of moving this function to the new emergency services/wildland fire complex when complete. If the auto repair function is deemed compatible with emergency services/wildland fire functions and will meet current building code requirements and is therefore moved at some point in the future, then the auto shop will be considered as space for concessionaire use. *(This may require additional NEPA/NHPA compliance depending on specific details related to this potential future action).*

NPS also proposes to retain the existing use of the mule barn (building #1098) by the trail ride concessionaire for storage and isolation of sick animals in the short-term. However, the ownership and eligibility of the building for listing on the National Register is currently in question. NPS will resolve who owns the building and evaluate its historic integrity. Based on this information, NPS will consider appropriate options for the building such as stabilization and retention or building removal, if appropriate. *(This may require additional NEPA/NHPA compliance depending on specific details related to this potential future action).*

A more detailed description of rehabilitation actions needed for each structure as well as estimated quantities and costs can be found in Appendix 3.

Expand Norton Trailer Court - To address employee housing needs in this area, the Norton Trailer Court will be redesigned and expanded to a total capacity of 34 sites. This will increase the size of this trailer court by 22 sites and will expand the existing footprint of this developed area. Efforts will be made to sensitively design the area so as to retain as many trees as possible and minimize new ground disturbance. This expansion will result in approximately 4 – 5 acres of ground disturbance, adjacent to existing disturbed land, and the removal of an estimated 10 -20 trees greater than 12 inches in diameter at breast height (dbh). Some small trees (less than 12 inches dbh) will also need to be removed. While the total acreage of the area designated for this expansion encompasses about 4 – 5 acres and estimates are made for tree removal, tree removal will be minimized as much as possible and not all areas within the 5 acre area will be disturbed. Most trees will remain and roads and trailer sites within the area will be designed to accommodate the existing vegetation as much as possible. This redesign and expansion will provide 18 sites for NPS employees and partners who use their personal travel trailers for summer housing, 8 South Rim duty-stationed employees temporarily working on the North Rim, and 8 sites for the trail ride concessionaire. The primary NPS users of the expanded Norton court will be NPS researchers and seasonal employees using their own or personal recreational vehicles or NPS travel trailers (that are then removed at the end of the season) and not employees housed in NPS trailers that remain year-round.

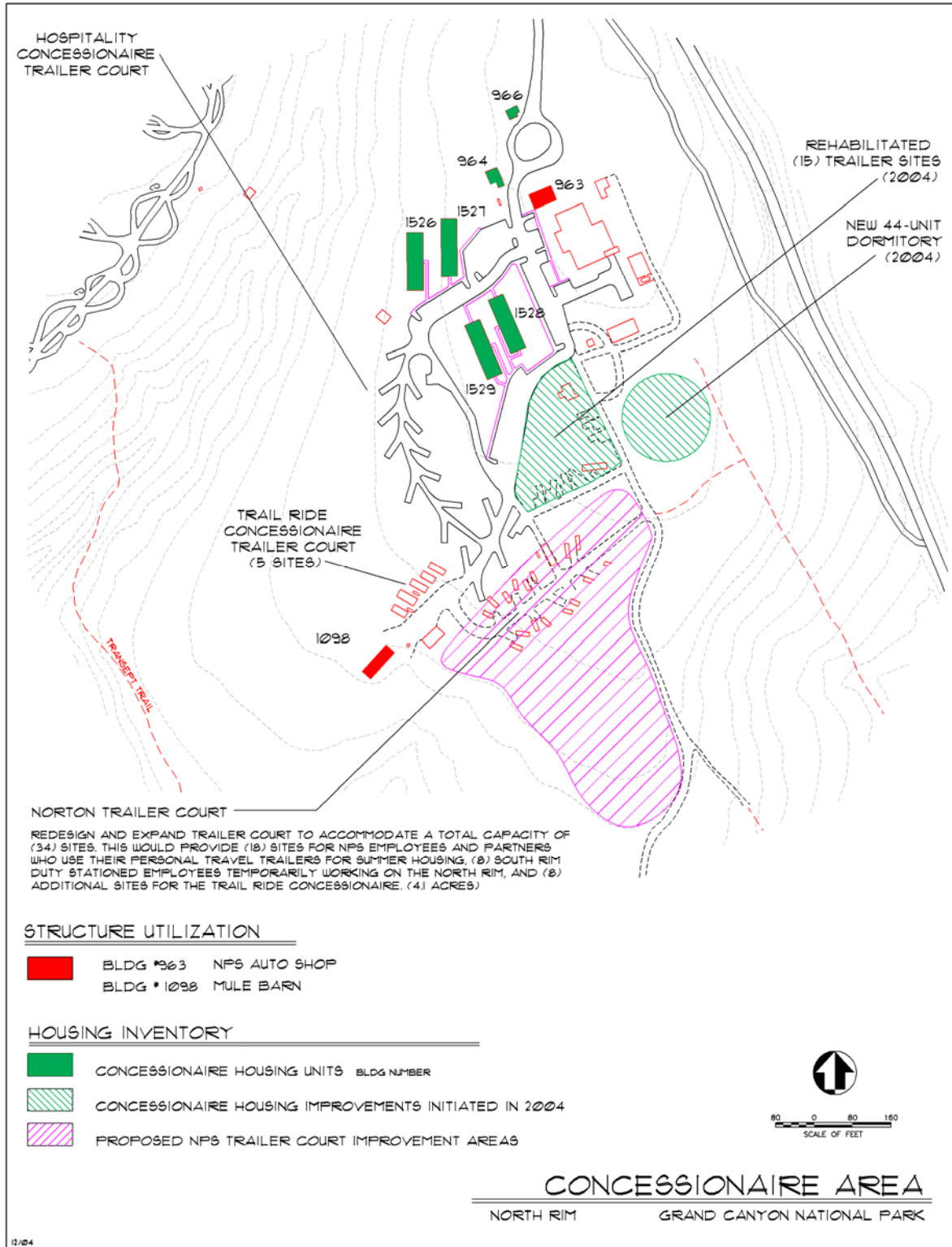


Figure 10. Development Plan Components, Concessionaire Area

Lodge Area

Enhance Visitor Center Exhibits - The existing North Rim Visitor Center in the lodge area will be retained and interpretive exhibits and media available in the visitor center will be expanded and improved.

Enhance Slide Programs in Lodge Auditorium – Existing orientation and interpretation slide programs in the lodge auditorium, including both daytime and evening programming, will be enhanced. Evening programs are typically scheduled now, but NPS will expand this program into daytime hours as well. The lodge auditorium is not currently accessible to persons with disabilities. The park intends to work with the concessionaire to evaluate the feasibility of making this room accessible for all visitors (*Additional NEPA and NHPA compliance may be necessary as accessibility details become available for this potential future action.*)

Improve Lodge Services and Facilities / Visitor Lodging Conversions - Options under preliminary consideration by NPS to improve facilities for visitors, operated by the park's hospitality concessionaire, include exploring the preliminary feasibility and cost of the following actions:

- Relocation of concessionaire employees housed in nine cabin units and the lower level of the motel units to the new dormitory currently under construction in the Concessionaire area. If this action occurs, then these nine lodge cabin units will be available for use as visitor lodging.
- Restoration of the lodge lobby to its original configuration.
- Relocation of the administrative offices, possibly to the motel basement.
- Remodel of the lodge kitchen.
- Relocation of the saloon function to the café and the café function to the saloon.
- Expansion of the lodge restrooms into the saloon area.
- Conversion of the accounting offices located behind the current saloon into a café kitchen and relocation of these offices, possibly into the motel basement.

These actions are intended to improve food service, lodge registration/check-in and restroom availability for visitors. *Additional NEPA and NHPA compliance may be necessary as more details become available for these actions.* However, minimal ground disturbance is expected to occur and actions will be limited to building interiors. All actions will be guided by the SHPO's involvement in future design phases.

Reconfigure Lodge Area Road Terminus and Enhance Parking Area Capacity - A passenger drop off zone will be created at the head of the lodge entry road. The plaza in front of the visitor center will be extended to wrap around the drop off area to provide a pedestrian connection with the visitor center and connecting walks to the lodge. A mountable stone curb will edge the perimeter of this area to create a visual terminus for public vehicle traffic. Only emergency, service, and shuttle vehicles will be permitted beyond this point. The existing disabled accessible parking spaces near the lodge entrance will remain at this time and be available on a case-by-case basis. The lodge entry road will be converted into the main pedestrian corridor to the lodge. The existing asphalt and concrete will be removed and the original historic width will be re-established using a pedestrian-friendly paving material.

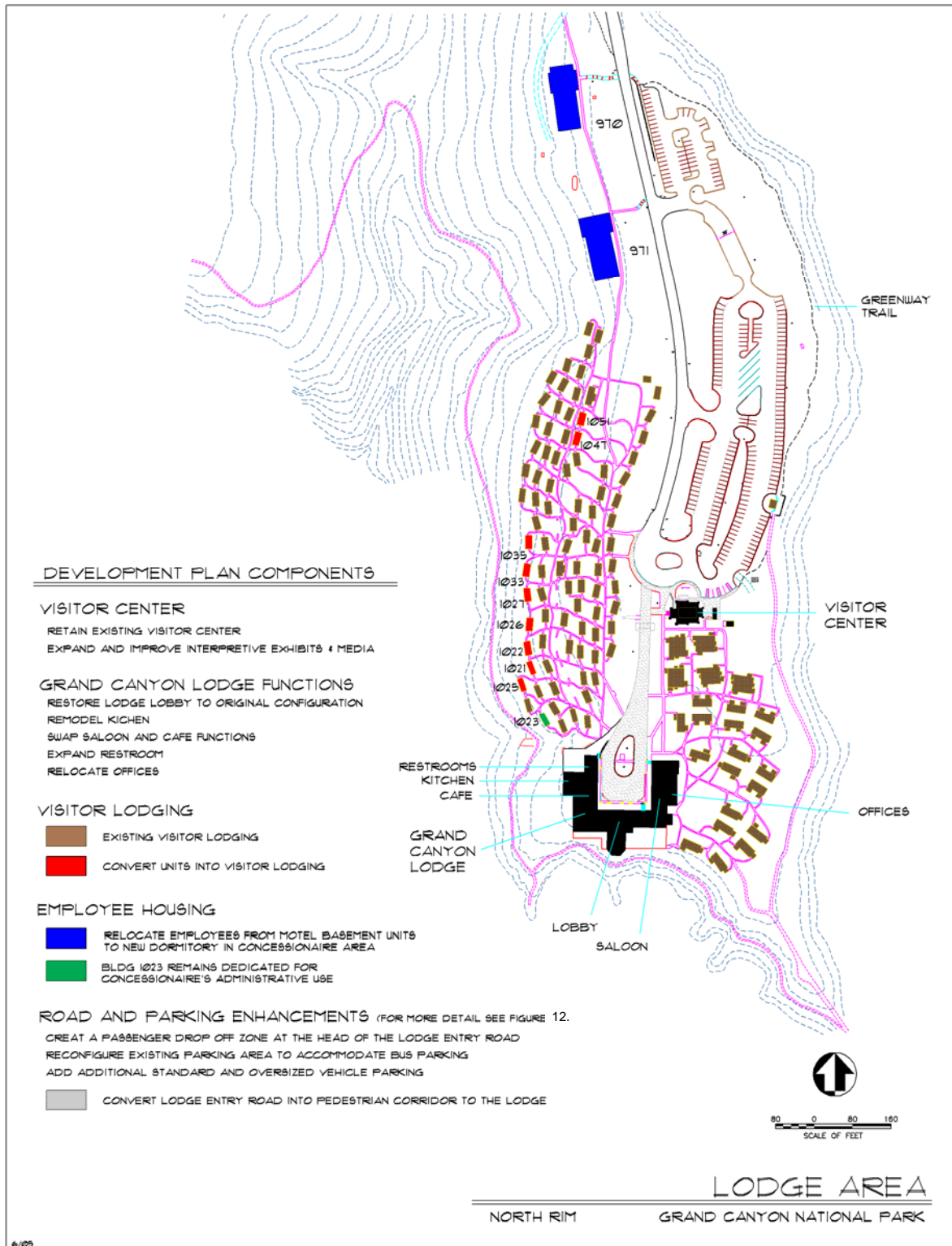


Figure 11. Development Plan Components, Lodge Area

Regrading of the original road profile may be needed to ensure accessibility. Walkways will be extended to reach the redefined road edge. The existing sidewalks in front of the deluxe cabins will be de-emphasized visually and possibly removed or realigned to assure cabin guest privacy. Pedestrian circulation from the parking area to this new pedestrian corridor will be refined further to make sure it is visibly emphasized.

A bus-only parking area will be created within the existing parking area by removing a portion of an island in the parking lot. This will provide safe pull-through parking for these large vehicles and eliminate the need for backing up. This change will result in a loss of 22 existing parking spaces. To offset this change, the entire lot will be restriped, changing the existing generous ten-foot wide parking spaces to a more standard nine foot width. In addition, the existing overflow and oversized vehicle parking will be formalized and expanded to create additional parking spaces. The designation and location of accessible parking spaces within the parking area will be determined in later design phases to best meet the needs of visitors and meet current Americans with Disabilities Act (ADA) standards. All of these proposed changes combined will result in a net increase in parking for approximately 6 cars, 5 buses and 3 oversized vehicles. Approximately 0.5 acres will be disturbed approximately 4 – 6 large trees (greater than 12 inches dbh) may be removed. Approximately 6 – 8 smaller trees, less than 12 inches dbh, will also be removed.

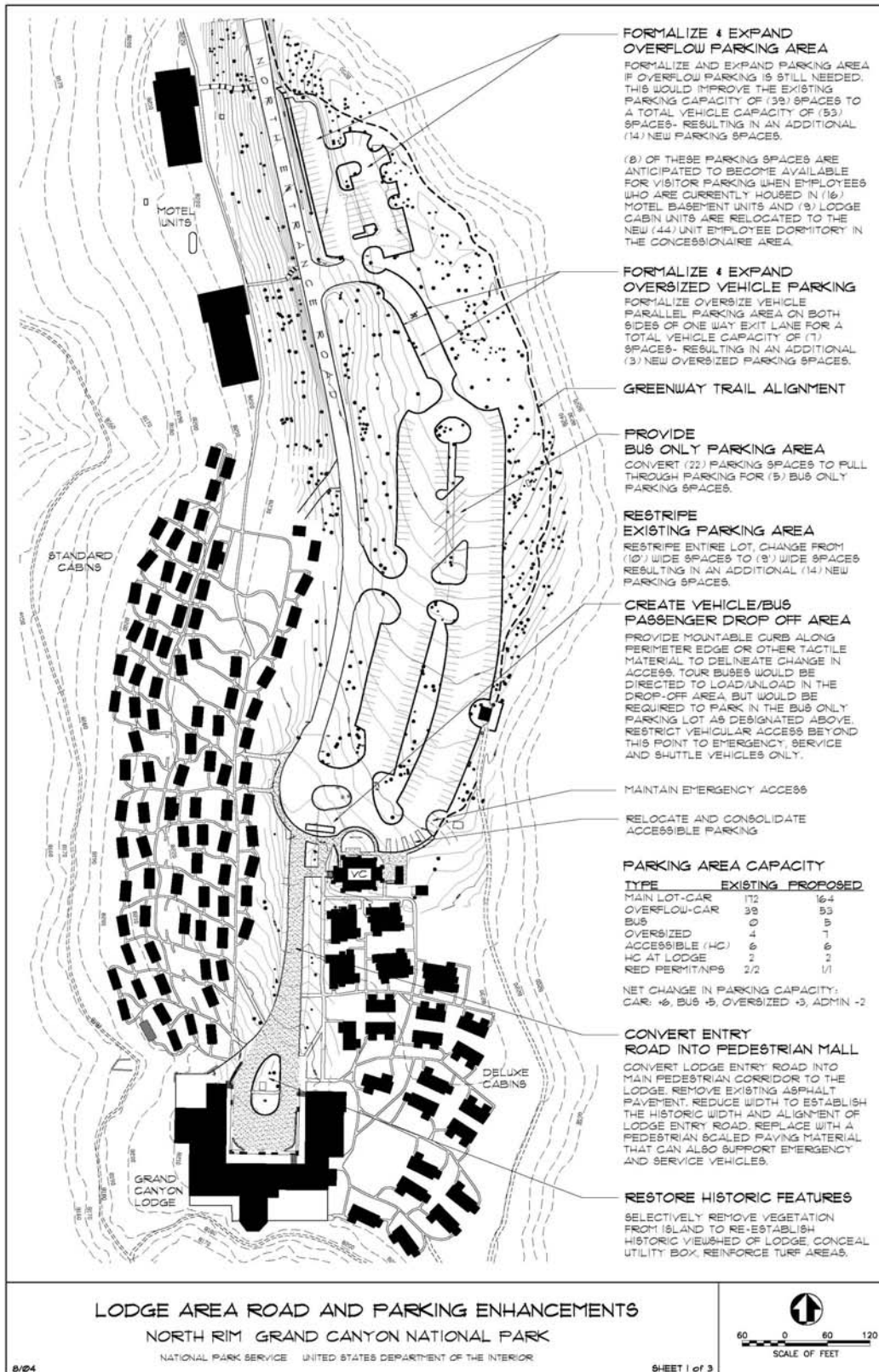


Figure 12. Lodge Area Road and Parking Enhancements

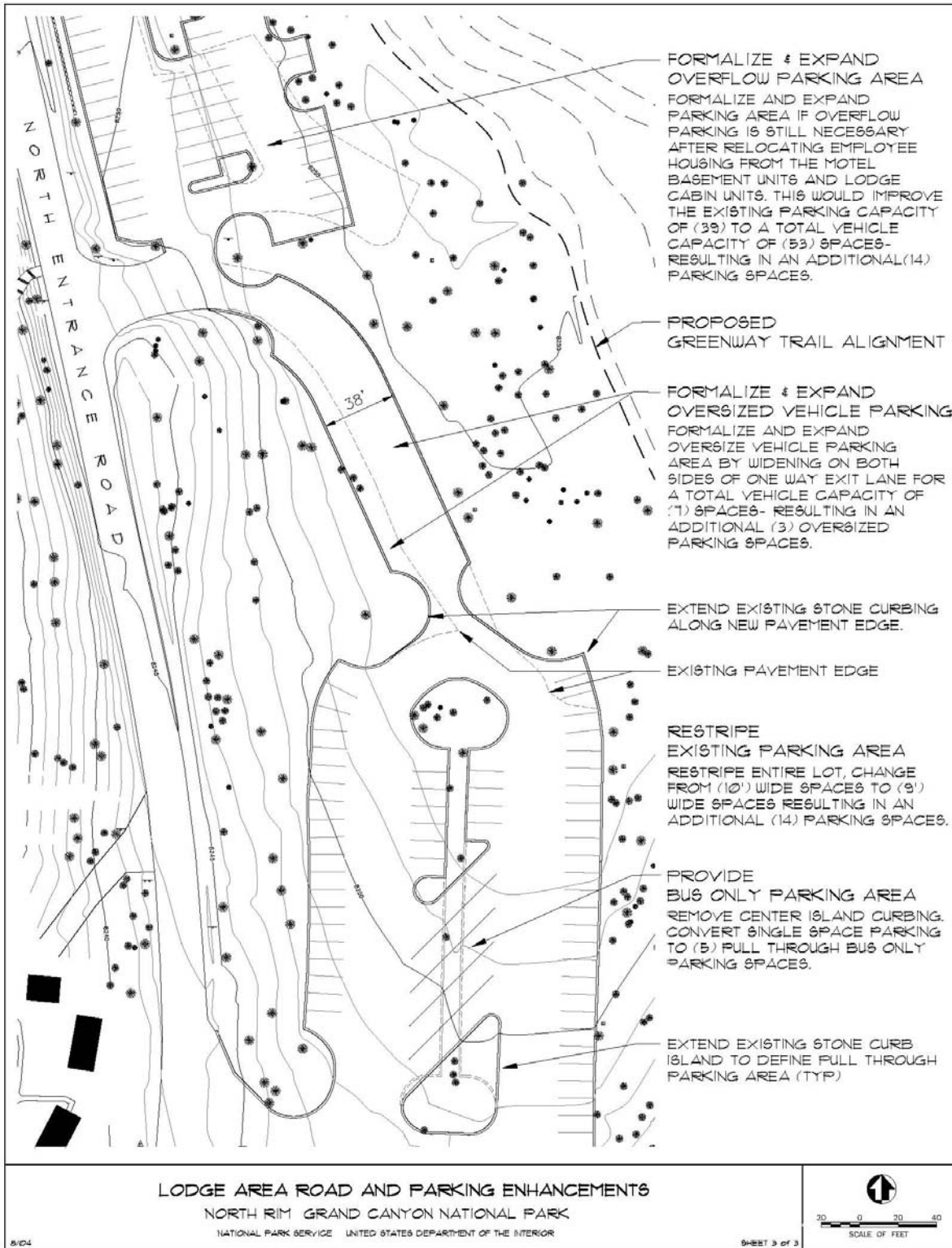


Figure 13. Lodge Area Road and Parking Enhancements, Upper Parking Area

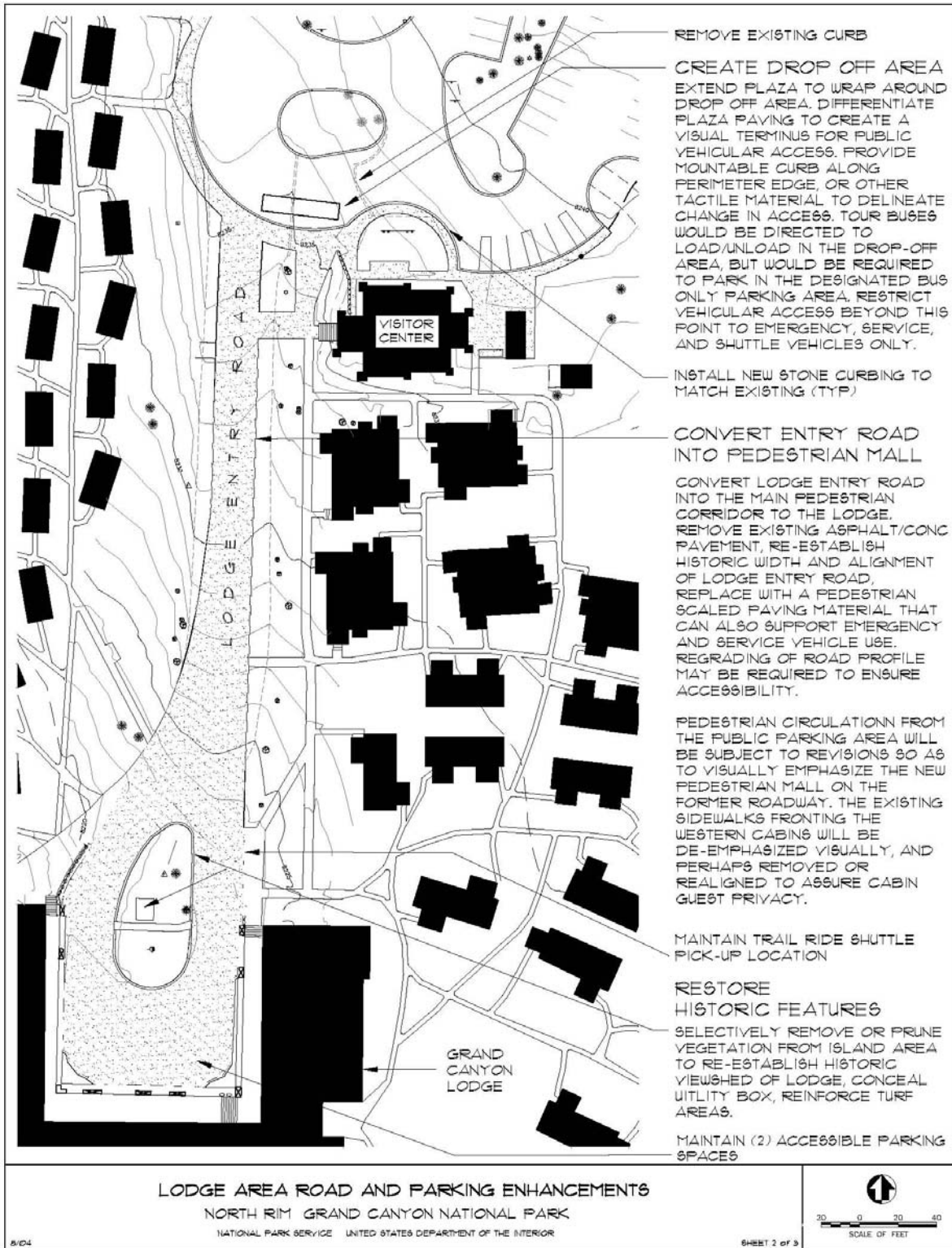


Figure 14. Lodge Area Road and Parking Enhancements, Lower Parking Area

Mitigation Measures

The mitigation measures listed below are legal requirements identified through NEPA and NHPA compliance for this planning effort. They are considered part of the development plan and will be followed during project implementation. These actions were developed to lessen the potential for adverse impacts during implementation, and have proven to be effective in reducing environmental impacts on previous projects.

Contractor Orientation

Contractors working in the Park will be given orientation concerning proper conduct of operations. This orientation will be provided in both written form and verbally at a preconstruction meeting. Orientation topics will include, but not be limited to:

- Wildlife should not be approached or fed.
- Collecting any Park resources, including plants, animals, and historic or prehistoric materials, is prohibited.
- Contractor must have a safety policy and a vehicle fuel and leakage policy in place.
- Other environmental concerns and requirements discussed elsewhere in the EA will be addressed, including relevant mitigation measures listed below.

Limitation of Area Affected

The following mitigation measures will be implemented to minimize the area affected by construction activities.

- As needed for components of the project that require construction, staging areas for the construction office (a trailer), construction equipment, and material storage will either be located in previously disturbed areas near project sites or in other disturbed areas that best meet the needs of the project and minimizes new ground disturbance. All staging areas will be returned to pre-construction conditions once construction is complete. Standards for this, and methods for determining when the standards are met, will be developed in consultation with the Park Restoration Biologist.
- Construction zones will be fenced with construction tape, snow fencing, or some similar material before any construction activity. The fencing will define the construction zone and confine activity to the minimum area required for construction. All protection measures will be clearly stated in the construction specifications, and workers will be instructed to avoid conducting activities beyond the construction zone as defined by the construction zone fencing.

Soil Erosion

The following mitigation measures will be incorporated into implementation activities to minimize soil erosion:

- Standard erosion control measures such as silt fences, jute logs and biodegradable erosion blankets, or equivalent control methods will be used to minimize any potential soil erosion. The park does not allow the use of straw or straw bales for erosion control, due to the likelihood of their containing weed or exotic seed.
- Any trenching operations will be by rock saw, backhoe, track hoe, punjar, ditch digger and/or trencher, with excavated material side-cast for storage. After trenching is complete, bedding material will be placed and compacted in the bottom of the trench and the utility lines installed in the bedding material. Back filling and compaction will begin immediately after the utility lines are placed into the trench, and the trench surface will be returned to pre-construction contours. All trenching restoration operations will follow guidelines approved by Park staff. Compacted soils will be scarified and original contours reestablished.
- A Salvage and Revegetation Plan will be developed for the project by a landscape architect or other qualified individual, in coordination with the Park Restoration Biologist. Any revegetation efforts will use site-adapted native species and/or native seed, and Park policies regarding revegetation and site restoration will be incorporated into the plan. The plan will consider, among other things, the use of native species, plant salvage potential, exotic vegetation and noxious weeds, and pedestrian barriers. Policy related to revegetation is referenced in NPS Management Policies.

Vegetation

The following mitigation measures will be incorporated into implementation activities to minimize impacts to vegetation and to prevent the introduction and minimize the spread of exotic vegetation and noxious weeds:

- Inventories for existing populations of exotic vegetation at construction sites will occur and any populations found will be treated prior to construction activities.
- A restoration biologist will provide input on salvage potential and tree avoidance at project sites where necessary.
- All construction equipment that will leave the road (e.g., bulldozers and backhoes) will be pressure washed prior to entering the Park.
- The location of the staging areas for construction equipment will be Park-approved and the needs for treating exotic vegetation will be considered.
- Parking of vehicles will be limited to existing roads or the staging area.
- Any fill, rock, or additional topsoil needed will be obtained from a Park-approved source.
- All areas disturbed by construction or for those planned for restoration (Helibase and Cochary trailer courts) will be revegetated using site-adapted native seed and/or plants.
- Vegetation to remain within construction limits will be surrounded by a protective barrier.

Water Quality and Floodplains

To minimize potential impacts to water quality and any potential sediment delivery to streams standard erosion control measures such as silt fences, sand bags, or equivalent control methods will be used whenever ground disturbing activities are anticipated during implementation of any development planning component.

Special Status Species

To protect any unknown or undiscovered threatened, endangered, or special status species, implementation activities will include provisions for the discovery of such. These provisions will require the cessation of construction activities until Park staff evaluates the project impact on the discovery and will allow modification of the contract for any protection measures determined necessary to protect the discovery. Mitigation measures for known special status species are as follows:

California Condor

- Prior to the start of a construction project, the Park will contact personnel monitoring California condor locations and movement within the Park to determine the locations and status of condors in or near the project area.
- If a condor occurs at the construction site, construction will cease until it leaves on its own or until permitted personnel employ techniques that result in the individual condor leaving the area.
- Construction workers and supervisors will be instructed to avoid interaction with condors and to contact the appropriate Park or Peregrine Fund personnel immediately if and when condor(s) occur at a construction site.
- The construction site will be cleaned up at the end of each day that work is being conducted (i.e., trash disposed of, scrap materials picked up) to minimize the likelihood of condors visiting the site. Park condor staff will complete a site visit to the area to ensure adequate clean-up measures are taken.
- To prevent water contamination and potential poisoning of condors, the park-approved vehicle fluid-leakage and spill plan will be adhered to for this project. This plan will be reviewed by the Park biologist for adequacy in addressing condors for this project.
- If a new structure occurs on the rim or above tree line in other areas, there may be a need to install condor deterrent devices, such as Nixalite, on the structure. This will be evaluated on a case-by-case basis by the Park wildlife biologist.
- New construction will limit the use of "soft" and/or colorful construction materials on roofs and along building foundations to minimize the possibility of condors becoming attracted to the building. An example of this type of material includes rubber weather-stripping which condors can pull off and ingest.
- If non-nesting condors occur within 1 mile of the project area, blasting will be postponed until condors leave or are hazed by permitted personnel.
- If condor nesting activity is known within 1 mile of the project area, then blasting activity will be restricted during the active nesting season, if viable nests persist. The active

nesting season is February 1 to October 15, or until young are fully fledged. These dates may be modified based on the most current information, in consultation with the Park biologist and the FWS.

- If condor nesting activity is known within 0.5 mile of the project area, then light and heavy construction in the project area will be restricted during the active nesting season, if viable nests persist. The active nesting season is February 1 to October 15, or until young are fully fledged. These dates may be modified based on the most current information, in consultation with the Park biologist and the FWS.

Mexican Spotted Owl (MSO)

- If a construction project occurs within a Protected Activity Center (PAC) with no known nest site, then all construction activity will be restricted to the non-breeding season (September 1 – February 28). However, if the project in a PAC is at least 0.8 km (0.5 mile) from known nest sites and the project does not include blasting, then the project can be implemented during the breeding season. The breeding season is March 1 – August 31. As of August 2004, this applies to Shoshone Pt and Buggeln Hill.
- If a construction project outside of PACs occurs within 1.6 km (1 mile) of a known PAC nest or roost site, the boundary of a PAC where the nest or roost site is not known, or unsurveyed restricted, protected, or predicted MSO habitat, then all blasting in that project area will be restricted to the non-breeding season (September 1 – February 28). Blasting may be necessary for vault excavation at some sites. The park wildlife biologist will be consulted for the latest information on PACs within this 1 mile distance.
- If a construction project outside of PACs occurs within 0.8 km (0.5 mile) of a known PAC nest or roost site, the boundary of a PAC where the nest or roost site is not known, or unsurveyed restricted, protected, or predicted MSO habitat, then light and heavy construction activity in that project area will be restricted to the non-breeding season (September 1 – February 28). As of February 2005 this applies to all project components on the peninsula south of the Campground area (Lodge Road and parking area improvements, portions of the Greenway Trail, and potentially aspects of building rehabilitation, depending on what equipment will be required. Refer to the biological assessment (NPS 2005b) for the most current information.

Cultural Resources

To minimize the impacts of proposed activities on cultural resources, a Programmatic Agreement (PA) between the SHPO and Grand Canyon National Park, dated September 6, 2005, has been prepared for this project to fully address the potential for any impacts to cultural resources and to streamline continued Section 106 consultation responsibilities throughout the multi-year implementation period for the North Rim Development Plan. Stipulations outlined in the PA that will guide continued consultation with the SHPO under Section 106 are summarized below:

- The NPS will consult with the SHPO on a specific project-by-project basis in order to determine the precise nature of anticipated effects on historic properties as specific components of the North Rim Development Plan, as described under the preferred alternative, are funded and planned for implementation. The NPS shall seek to avoid or minimize effects to historic properties through project design, facilities location, or other

means. NPS will document these assessments on NPS-generated "Assessment of Effect" forms.

- Preliminary designs for historic building rehabilitation will be submitted to the SHPO early in the planning process (i.e. concept stage, or at approximately 30% design). Review comments will be incorporated, with additional draft designs sent on or about the 65% design stage (if changes have been made), and at the draft final phase.
- If previously unknown cultural resources are discovered during the implementation of this project, all work in the immediate vicinity of the discovery will be halted until the resources can be identified and documented. An appropriate mitigation strategy will be developed by the Park's Chief of Cultural Resources or Archaeologist in consultation with the SHPO.
- Archaeological resources will be protected and preserved in place. If such resources must be disturbed, a mitigation plan will be developed by the Park's Chief of Cultural Resources or Archaeologist in consultation with the SHPO, prior to project implementation.
- The Park will follow the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes, and Director's Order #28. Landscape modifications will be made only after consultation with a landscape architect.
- The park's historical architect and landscape architect will approve site plans, staging areas, and architectural drawings, in consultation with the SHPO as necessary, prior to project implementation.
- A property will be used as it was used historically, or will be reused in a manner that maximizes the retention of distinctive materials, feature, spaces, and spatial relationships. The historic character of a property will be retained and preserved. Distinctive materials, features, finishes, and construction techniques that characterize a property will be preserved.
- Smaller historic landscape features (e.g. stone firewood shelters, native stone drinking fountains, stone headwalls, flagpoles, and a peeled log trail shelter near the head of the North Kaibab Trail) will be protected during project activities.
- Aspen trees with carvings along the Bridle Trail will be protected.
- The North Rim Greenway Trail will be constructed in two phases. The first phase will include any work outside (north) of the boundary of the Grand Canyon Lodge National Historic Landmark District. Phase two will include any trail work being done within the National Historic Landmark District, including formalization of a gathering area next to the Visitor Center. Preliminary designs for the gathering area will be prepared as a collaborative effort between the Park's Historical Architect, Landscape Architect and a cultural resource specialist, in consultation with the SHPO. Phase two of the work on the Greenway Trail will not be implemented until the SHPO is provided an opportunity to review the final design for the gathering area at the trailhead.
- All workers will be informed of the penalties of illegally collecting artifacts or intentionally damaging any archeological or historic property. Workers will also be informed of the correct procedures if previously unknown resources were uncovered during construction activities.

Visual Resources

To minimize visual impacts, mitigation measures will include the following:

- Natural, muted colors, that replicate existing location hues, will be used to blend any built materials into the landscape.
- Signs and kiosks will be sited so that they do not compete with views and vistas and are incorporated into the surrounding landscape.
- Signage and site furnishings, such as benches and trash receptacles will be minimal and unobtrusive.
- Avoid shiny, reflective, or brightly colored signage that will detract from the wilderness feel of area trails or historic areas. Wayside exhibits will be contemporary in design, but simple rather than intricate or overly-bold that distract from the historic character of certain areas.
- Construction activities will be coordinated with other projects to minimize the visual intrusion of construction equipment and activity in visitor areas, as much as possible. Projects will be staggered in time and area to minimize impacts to scenic areas and heavily used visitor areas during peak season.

Visitor Experience

The following mitigation measures will be incorporated into the plan to minimize the impacts of construction activities on the visitor experience:

- Construction activities will be restricted during peak use days such as holidays and some weekends during the busiest times of the year to minimize disruption to visitors.
- Traffic in any one direction will not be stopped for more than 15 minutes to minimize disruption to traffic flow.
- Unless otherwise approved by the Park, operation of heavy construction equipment and helicopters will be restricted to 8:00 am to 6:00 pm in the summer (May 1-September 30) and to 9:00 am to 5:00 pm during the rest of the year.
- As time and funding allows, information regarding implementation of this project and other foreseeable future projects located in public areas will be shared with the public upon their entry into the park during construction periods. This may take the form of an informational brochure or flyer about the projects distributed at the gate and sent to those with reservations at park facilities, postings on the park's website, press releases, and/or other methods. The purpose of these efforts will be to minimize the potential for negative impacts to the visitor experience during implementation of this project and other planned projects during the same construction season.
- Construction activities will be coordinated with other projects to minimize the visual intrusion of construction equipment and activity in visitor areas, as much as possible. Projects will be staggered in time and area to minimize impacts to visitors

and the quality of their experience, particularly within heavily used visitor areas during peak season.

Air Quality

Air quality impacts resulting from implementation of the development planning components are expected to be temporary and localized. To minimize these impacts, the following actions will be taken:

- To reduce entrainment of fine particles from hauling material, sufficient freeboard will be maintained and loose material loads (aggregate, soils, etc.) will be tarped.
- To reduce tailpipe emissions, construction equipment will not be left idling any longer than is necessary for safety and mechanical reasons.
- To reduce construction dust in the short term, water will be applied to problem areas. Equipment will be limited to the fenced project area to minimize soil disturbance and consequent dust generation.
- Landscaping and revegetation will control long-term soil dust production. Mulch and the plants themselves will stabilize the soil and reduce wind speed/shear against the ground surface.
- Contact the Arizona Quality Division, Compliance Section, of the Arizona Department of Environmental Quality if asbestos is present in any building that would be rehabilitated to ensure compliance with the asbestos National Emission Standards for Hazardous Air Pollution (NESHAPS).
- Explore the need for modifying the park's existing permit with the Arizona Department of Environmental Quality, authorizing the use of existing diesel generators for back-up electrical generation on the North Rim. A modified permit is likely not needed if a new 600 kW unit is installed, but if the park intends to distribute existing total hours of use among fewer generators, a relatively simple permit modification will likely be required.

Estimate of Implementation Costs

<i>Item</i>	<i>Description</i>	<i>Qty.</i>	<i>Unit</i>	<i>Cost/Unit</i>	<i>Net Cost</i>
1.	TRANSPORTATION & CIRCULATION				
a.	Lodge Area Road & Parking Enhancements				
	<i>Overflow parking area</i>				
	Clear and grub	0.33	acres	\$3,790	\$1,251
	Prepare base for expanded parking areas	568	sy	\$10.30	\$5,850
	Mill existing paved areas	1789	sy	\$11	\$19,679
	Extend stone curbing	876	lf	\$61.70	\$54,049
	Pave parking area	262	tons	\$103	\$26,986
	Restripe	1000	lf	\$1.25	\$1,250
	<i>Oversize vehicle parking area</i>				
	Clear and grub	0.18	acres	\$3,790	\$682
	Prepare base for expanded parking area	845	sy	\$10.30	\$8,704
	Mill existing paved areas	400	sy	\$11	\$4,400
	Extend stone curbing	536	lf	\$61.70	\$33,071
	Pave parking area	94	tons	\$103	\$9,671
	Restripe	372	lf	\$1.25	\$465
	<i>Main parking area</i>				
	Clear and grub	0.08	acres	\$3,790	\$303
	Prepare base for expanded parking area	394	sy	\$10.30	\$4,058
	Seal & chip paved areas	12,109	sy	\$8.65	\$104,743
	Extend stone curbing	785	lf	\$61.70	\$48,435
	Install pedestrian paving	693	sy	\$97	\$67,221
	Pave parking area	44	tons	\$103	\$4,509
	Restripe	3,548	lf	\$1.25	\$4,435
	<i>Lodge entry road</i>				
	Remove asphalt	2834	sy	\$11	\$31,174
	Replace with pedestrian paving material	2380	sy	\$97	\$230,860
	Restore road shoulders	454	sy	\$8.10	\$3,677
	Restore landscape island	1	ls	\$10,000	\$10,000
	Subtotal				\$675,473
b.	Kaibab Trailhead Parking Area Improvements				
	Clear and grub	0.1	acres	\$3,790	\$379
	Concrete curb demo	377	lf	\$5	\$1,885
	Earthwork/fill	1020	cy	\$32.50	\$33,150
	New concrete curb	358	lf	\$30.50	\$10,919
	Retaining wall	286	lf	\$50	\$14,300
	New parking spaces	17	spaces	\$2,160	\$36,720
	Pavement patching	40	sy	\$30	\$1,200
	Mill and 1" overlay	3252	sy	\$29.50	\$95,934
	Striping	1000	lf	\$1.25	\$1,250
	Subtotal				\$195,737
c.	*Greenway Trail				

<i>Item</i>	<i>Description</i>	<i>Qty.</i>	<i>Unit</i>	<i>Cost/Unit</i>	<i>Net Cost</i>
2.	VISITOR SERVICES				
	Expand enhance interpretive exhibits	200	sf	\$200	\$40,000
	Develop orientation/interpretive slide program	1	ls	\$7,500	\$7,500
	Establish un-manned orientation kiosk	100	sf	\$120	\$12,000
	Develop pullout parking area (5 cars)	1	ls	\$2,160	\$2,160
	Expand interpretive opportunities along area trails	10	ea	\$6,500	\$65,000
	Visitor services enhanced outside park boundaries				TBD
	Improve road signage	15	ea	\$500	\$7,500
	Implement Traveler Information System	1	ls	\$15,000	\$15,000
	Implement auto tour	1	ls	\$5,000	\$5,000
	Subtotal				\$154,160
3.	**STRUCTURE UTILIZATION				
a.	Headquarters Area				
	Rehab Bldg #111 NR HQ Dormitory	1	ls	\$128,294	\$128,294
	Rehab Bldg #118 NR Warehouse	1	ls	\$570	\$570
	Upgrade office space	1	ls	\$25,997	\$25,997
	Rehab Bldg #119 NR Ranger Offices	1	ls	\$125,623	\$125,623
	Upgrade office space	1	ls	\$3,986	\$3,986
	Rehab Bldg #125 NR HQ Gas & Oil Station	1	ls	\$59,158	\$59,158
	Rehab Bldg #126 NR HQ Fire Equipment Shed	1	ls	\$73,704	\$73,704
	Rehab Bldg #127NR HQ Shed	1	ls	\$84,858	\$84,858
	Rehab Bldg #171 NR Equipment Shed	1	ls	\$91,718	\$91,718
	Upgrade office space	1	ls	\$26,866	\$26,866
b.	Campground Area				
	Rehab Bldg #134 NR Inn Log Restroom	1	ls	\$78,515	\$78,515
	Rehab Bldg #1568 Laundry/Shower Building	1	ls	\$82,027	\$82,027
c.	Concessionaire Area				
	Rehab Bldg #963 NPS Auto Shop	1	ls	\$90,107	\$90,107
	Fire Safety Upgrade	1	ls	\$18,395	\$18,395
	Rehab Bldg #1098 Stable (Mule Barn)	1	ls	\$84,616	\$84,616
	Subtotal				\$974,434

<i>Item</i>	<i>Description</i>	<i>Qty.</i>	<i>Unit</i>	<i>Cost/Unit</i>	<i>Net Cost</i>
4.	EMPLOYEE HOUSING				
a.	Headquarters Area				
	Restore Helibase & Cochary Trailer Court Sites	1.8	acre	\$9,190	\$16,542
b.	***Campground Area				
	Rehab 12 exposed frame cabins (277 sf)	12	ea	\$42,102	\$505,224
	Rehab bldg. #925 into seasonal housing	1	ls	\$42,102	\$42,102
	Rehab bldg #922 community building (600 sf)	1	ls	\$104,600	\$104,600
	Rehab bldg #923 laundry facility (250 sf)	1	ls	\$33,600	\$33,600
	Rehab bldg #924 storage facility	1	ls	\$30,000	\$30,000
	Rehab Site Utilities	1	ls	\$402,500	\$402,500
c.	Concessionaire Area				
	Redesign & expand Norton Trailer Court	34	sites	\$22,700	\$771,800
	Subtotal				\$1,906,368
	Total Direct Costs				\$3,906,172
	****Cost escalation (2001 to 2006 @ 4%/year)				\$4,752,456
	Location Factor (42%)				\$1,996,031
	Design Contingency (20%)				\$950,491
	General Conditions (8%)				\$380,196
	Overhead and Profit (20%)				\$950,491
	TOTAL NET CONSTRUCTION COST				\$9,029,666

* Reference Greenway Trail Plan for a more detailed breakdown on estimated costs.

** A more detailed breakdown on rehab items and estimated costs can be found in Appendix 3.

*** Reference Frame Cabin Rehabilitation Study prepared by ARG for a more detailed breakdown on estimated costs.

**** Cost escalation: NPS 2001 Cost Estimating Data used. Assume 4% inflation per year to year 2006.

TBD- Partnership work with U.S. Forest Service needs further scoping and coordination to determine program costs.

Lodging services & facility improvement costs to be determined through concession contract negotiations.

Appendix

Appendix 1. Visitation and Transportation Analysis



Visitation and Transportation Analysis Memorandum
for the North Rim Development Plan
Grand Canyon National Park, Arizona

Contract No. 1443C2000021100

Task Order: T2000021114

Prepared By:



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Prepared for:



National Park Service

December 4, 2002

CONTENTS

1	<u>INTRODUCTION</u>	3
2	<u>SITE VISIT</u>	4
2.1	INITIAL MEETING WITH PARK STAFF	5
3	<u>FIELD DATA COLLECTION</u>	6
4	<u>VISITATION AND CAPACITY ELEMENTS OF THE GMP</u>	6
5	<u>UPDATED VISITATION FORECAST</u>	7
5.1	VISITATION COMPARISON WITH OTHER PARKS	8

LIST OF FIGURES

FIGURE 1:	GRAND CANYON VISITATION HISTORY AND NORTH RIM FORECAST	8
FIGURE 2:	REGIONAL NPS UNIT VISITATION 1979-2001	9



1 Introduction

A General Management Plan (GMP) was completed for Grand Canyon National Park in 1995. The GMP provides guidance regarding development in and management of the park. The plan calls for changes in the way day visitors travel to and use facilities and visitor use areas in the North Rim area of the park. A Development Plan with related environmental compliance activities is being prepared for the North Rim area to determine how to implement the GMP. The Development Plan will address visitor orientation, visitor use, and visitor transportation issues, along with the needs for administrative support facilities.

David Evans and Associates, Inc. (DEA) was retained by the National Park Service to assist in developing a specific scope of work for the Development Plan and to provide professional guidance on the transportation elements that should be considered in formulating the alternatives to be evaluated in the Development Plan. DEA was charged with updating visitation forecasts for the North Rim area and analyzing current and future transportation conditions. DEA's analysis was used to determine whether the North Rim area is likely to need an alternative transportation system within the planning horizon of the Development Plan based on recent trends in visitation. DEA's work activities included:

1. A site visit to view the North Rim area and meet with park staff.
2. A review of the data and other information used in preparation of the transportation and visitor use elements of the GMP.
3. Data collection on current parking use and exiting vehicles.
4. Assessment of historic visitation data.
5. Development of updated visitation forecasts.
6. Recommendations regarding the need for alternative transportation systems at the North Rim.

Based on traffic and parking conditions observed in the summer in 2002, and updated visitation forecasts prepared by DEA, DEA determined that an alternative transportation system would not be needed at the North Rim because of either traffic congestion or parking shortages for at least 15 years. DEA participated in a workshop at the park to identify elements to be included in the alternatives for the Development Plan. At that meeting it was confirmed that alternative transportation systems would not be considered for North Rim at this time. Various approaches to improving visitor orientation and interpretation, including locations for new visitor facilities were identified at the workshop. Separate documents provide a summary of the results of that workshop.

This memorandum provides a summary of DEA's analysis of existing parking and traffic conditions and the forecasts of future visitation.



2 Site Visit

The consultant and NPS staff visited the major visitor use and administrative areas in the North Rim in early July. Areas visited included the overlooks on the Cape Royal Road, Point Imperial, and Bright Angel Point. In addition, site visits covered the campground (including the laundry/shower building, store, and restroom buildings), the Lodge and environs, the North Rim Visitor Center near the Lodge, the NPS administrative and housing areas, and the concessioner housing area. Information on the current use of trailer and RV sites for housing was gathered during the site visits.

The team also visited the entrance area and sites along SH 67 between the park entrance and Jacob Lake, including Kaibab Lodge and the Kaibab Plateau Visitor Center in Jacob Lake. The visitor parking area and shuttle staging site proposed in the GMP at CC Hill were examined, along with the site of the proposed joint vehicle maintenance facility on Lindbergh Hill (now used as a fire crew staging area). During visits to visitor use areas, informal observations were made of visitor use patterns and the general use levels (including numbers of parked vehicles).

In general, visitor facilities, including parking areas and overlooks, appeared uncrowded. The main parking lot at the Lodge and Visitor Center was nearly full during the several times the team came to this area, but overflow parking did not appear to be a significant problem. Data on parking occupancy collected in early August revealed that significant surplus parking is available at the Lodge at current use levels. Several times and at locations throughout the North Rim, visitors in vehicles were observed stopping in traffic or on roadsides, apparently trying to decide which direction to take.

During the site visits, the team made note of existing signage and other features that could be addressed during the planning project. Photographs of intersections, buildings, viewpoints and other features were taken for later reference.

The issues identified during the site visits included:

1. Need to provide a sense of arrival for visitors who may use a parking and transit staging area. Accessibility to canyon views would help to provide the sense of arrival.
2. Locations near the entrance station could benefit from the sense of arrival associated with the station as well as providing effective orientation to visitors before they begin their park experience.
3. Longer travel distances and times from the entrance station area to the Lodge area would increase the scale of a proposed transit system that operated from the entrance area.
4. Jacob Lake's distance from the park would limit the ability of visitors to retain detailed park information. More general information about recreation opportunities on the Kaibab Plateau, including Grand Canyon National Park would be more appropriate to provide at Jacob Lake.
5. The access and parking at the Kaibab Plateau Visitor Center could be improved. Also, it is not readily apparent that NPS is a partner in the facility until visitors enter it.
6. Orientation at the Kaibab Lodge area would offer the advantage of being able direct visitors to Forest Roads as an alternative or supplement to visiting the park. This location is still quite distant from the primary visitor activity areas within the park, however.
7. Orientation at or near the entrance station would be desirable, but impacts to the scenery, natural environment, and cultural landscape are concerns.



2.1 Initial Meeting with Park Staff

A meeting was held with Unit Manager Phil Walker, Facility Manager Jim Boucher, and Fee Demo Project Manager Shelley Mettlach on July 2. The biggest current concern among the park staff related to congestion and crowding is at the Lodge Parking area. The interactions of buses, visitor vehicles, and pedestrians are a concern. The park staff wonders if the relatively new Visitor Center could be contributing to parking problems and congestion. One of the problems with the Visitor Center is its location. The center can be difficult to find and it can not provide orientation assistance to visitors entering the park because visitor must make several key decisions before they get to the Visitor Center. The location near the Lodge also tends to increase the demand for parking in the area where parking problems are of the greatest concern.

The park staff are uncertain if a transit system for visitors as proposed in the GMP is needed now and whether the areas proposed for visitor services and transportation facilities are appropriate or adequate to meet the needs of visitors. The park staff believes that improved visitor orientation could solve many of the problems now experienced in the North Rim. The park staff are interested in forming partnerships with other land management agencies, including the USDA Forest Service and the Bureau of Land Management to enhance visitor understanding and enjoyment of the entire Kaibab Plateau and other recreation resources in the region. The USDA Forest Service unit manager for the Kaibab National Forest is interested in joint planning for visitor facilities and services. There are several good examples of effective partnering for visitor services in the region.

Planning for the North Rim needs to recognize the vision to have this part of GRCA retain its unhurried, uncrowded character. More primitive and pristine experiences are valued here. The current expectation of park management is that there would be no new development to support increased visitation. The park would like to encourage development outside the park in National Forest lands and at Jacob Lake.

The park wonders whether CC Hill is the right location for a transit staging area and visitor parking, plus visitor orientation. This location is south of the major visitor decision point for visitors who may wish to go directly to the Walhalla Plateau. Areas near Kaibab Lodge, the park entrance station, Jacob Lake, and Lindbergh Hill should also be considered.

While the park wants to reconsider the appropriateness of the transportation elements in the GMP, they believe that visitation is growing and that crowding does occur in some areas. To address the observed and potential future problems, the park staff believes the first step is to improve visitor orientation and thereby disperse use away from the crowded Lodge area. The orientation process should begin at Jacob Lake.

Park staff believes that data on visitor use was somewhat sketchy prior to 1996 (the start of the fee demo program). Since that time, visitation statistics have been maintained carefully as a resource for planning and justifying fee demo projects.

The Development Plan (or other appropriate planning effort for visitor orientation and transportation) should not delay the implementation of projects that are consistent with the GMP. However, the plan should address housing and administrative support needs associated with visitor transportation and visitor services analyzed in the plan. The plan should identify housing needs under each scenario/alternative (including no action) and assess where needed housing should be located.



3 Field Data Collection

Visitors entering the North Rim area during the period July 30 through August 2, 2002 were given colored tags to place in their vehicles' windshields. Visitors intending to stay overnight in the North Rim were given tags of one color and day visitors were given different colored tags. The numbers of parked vehicles with each color tag were recorded in several parking lots over a three-day period from July 31 to August 2. The number of vehicles with each color tag were recorded departing the North Rim area on August 2.

The key findings of the parking data collection were:

1. The maximum number of vehicles parked at the Lodge was 219, compared to a capacity of 270.
2. The Lodge parking area is currently used by park and concession employees. The largest number of visitor vehicles recorded in the lot was 183. The maximum visitor occupancy of the lot occurred in the late afternoon, when most vehicles were parked by overnight visitors.
3. The largest number of day visitor vehicles observed was 89, occurring at 12:30 p.m.

These results indicate that a parking shortage does not exist and that substantial increases in visitation can be accommodated by the existing parking lot.

The key findings of the exiting vehicle data collection were:

1. The highest exiting volume observed was 68 vehicles per hour from 2:15 to 3:15 p.m. Of the total, 58 vehicles were driven by day visitors. This would be equal to 186 people per hour, using an average occupancy of 3.2 persons per vehicle.
2. The observed inbound and outbound flows of visitors and vehicles were well below the estimated capacity of the North Rim identified in the GMP.
3. Overnight visitors tended to leave the park earlier than day visitors.

4 Visitation and Capacity Elements of the GMP

Key visitation and visitation capacity elements of the GMP include:

1. The GMP anticipated a change in visitation patterns that would increase visitation to the Walhalla Plateau.
2. Visitors were expected to spend more time at Bright Angel Point (as a result of requiring them to ride an alternative transportation system).
3. The GMP established a visitation capacity for the North Rim area, based on the capacity of overlooks and other visitor use areas (not parking or roads). The estimated capacity of the area is 1,700 people at one time without any measures to redistribute use and up to 2,350 people at one time with active visitor use management (primarily encouraging more visitors to go to the Walhalla Plateau). These person capacity levels equate to an existing capacity of 515 vehicles in the North Rim area at one time, with a potential increase to 712 vehicles at one time.
4. Based on the assumed length of stay for different types of user, the capacity estimates equate to 170 to 180 vehicles per hour or 550 to 590 people per hour entering the North Rim area.
5. Visitation characteristics revealed by studies during the GMP included an average party size of 3.2; 72% of visitors are visiting for the first time; average stay is 1.8 days; average duration of day visits is 3.8 hours; 92% of visitors stay in or near the park for one night.
6. Observed traffic volume at the entrance station in 1992 was 131 vehicles per hour entering in the peak (compared to visitor area capacity of 170 to 180 vehicles per hour).



7. Traffic volumes at the entrance in 2000 and 2001 were typically in the range of 70 to 80 vehicles per hour – a 43% decrease from 1992.
8. The GMP forecast visitation to the North Rim in 2010 to be 508,000, up from 436,000 in 1993.

5 Updated Visitation Forecast

Visitation data for Grand Canyon National Park and the North Rim area were assembled for the period 1960 to 2001. Data for the North Rim area was only available for the period 1980 to 2001. Annual visitation and visitation during the peak month of July were analyzed. As shown in the chart on the following page, visitation grew rapidly from 1984 to 1993. The rapid visitation growth occurring park-wide during this period was mirrored by visitation growth in the North Rim area. The visitation forecasts used in the GMP for both the North and South Rims were prepared using data from this period of exceptional growth in visitation.

The GMP forecast that visitation would continue growing at a high rate through 2010. In contrast to the GMP forecast, 1994 saw the beginning of a period of level to declining actual visitation, with major declines in visitation to the North Rim occurring in 2000 and 2001. Trends in 2002 indicate that the declines in visitation are continuing.

The chart shows that visitation to the North Rim in 1993 was about 436,000. By 2001, visitation had declined to about 307,000 per year. DEA's updated forecast indicates that visitation will not return to the 1993 level until 2019 – more than 15 years in the future. By 2025, visitation to the North Rim is expected to reach about 485,000 per year compared to a GMP forecast of 508,000 for the year 2010.

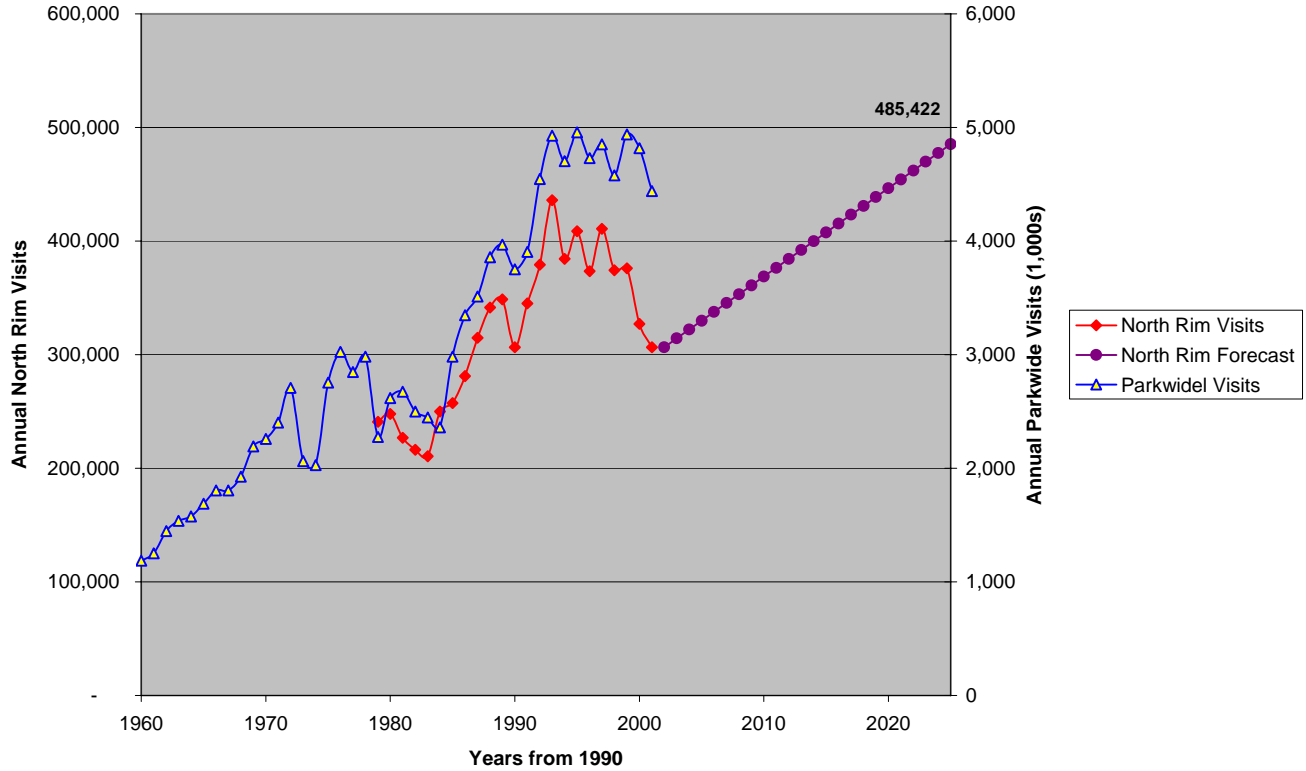
Visitation to the North Rim in July has declined more than annual visitation. Based on trends since 1980, visitation to the North Rim during the peak season is not expected to reach levels observed in 1993 until 2023, more than 20 years from now.

The updated visitation forecasts indicate that for a period of at least 15 to 20 years, visitation on the busiest days can be expected to be no greater than visitation that occurred on similar days in 1993. While crowding did occur in 1993, it appears that improvements in visitor orientation and management of employee parking in the Lodge area would be adequate to meet visitor transportation needs for the foreseeable future. A visitor transportation system as proposed in the GMP will not be required within the planning horizon of the Development Plan because visitation is not projected to reach levels forecasts in the GMP until after 2025.



FIGURE 1

**Grand Canyon Visitation History and North Rim Forecast
1960 - 2025**



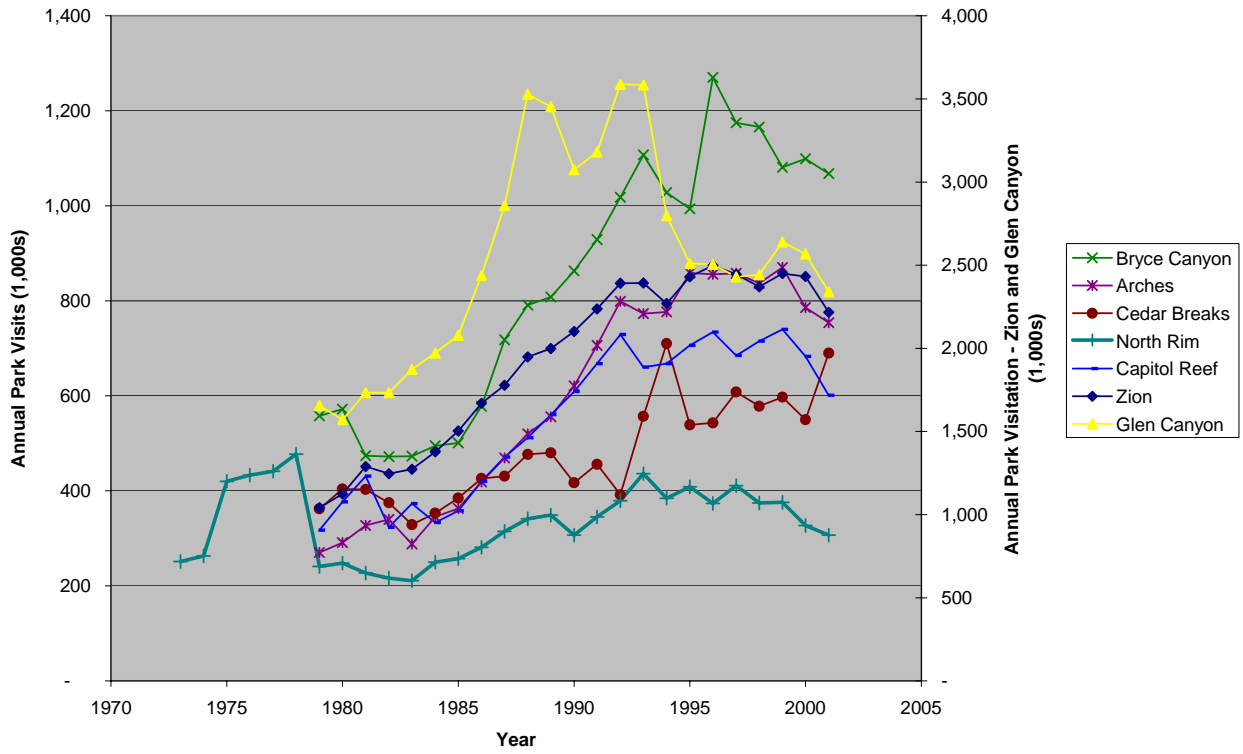
5.1 Visitation Comparison with Other Parks

The chart on the following page shows visitation to the North Rim area along with visitation to several National Park System units in southern Utah. These parks draw from visitor populations similar to the North Rim. As shown in the chart, most of the parks in the region have experienced a pattern of visitation similar to that for the North Rim. Major increases in visitation are evident in the period from the mid-1980s to the early 1990s, followed by a period of level to declining visitation from the mid-1990s to the present. It is evident that visitation patterns at the North Rim (and for Grand Canyon National Park as a whole) are part of a greater trend, rather than being associated with factors unique to the park.



FIGURE 2

Regional NPS Unit Visitation - 1979 - 2001



Appendix 2. Employee Housing Recommendations

The housing needs for employees working on the North Rim have been broken down into two tables: One for the employees of the hospitality and trail rides concessionaire and a second table for NPS employees and partners. The tables identify current and projected needs over the course of the next 15 years. The totals were broken down into two categories of housing, fixed housing and trailer pad sites. Next, the projected housing need was then compared to existing non-shared units (permanent quarters), seasonal bed spaces, and trailer sites to determine housing shortfalls and surpluses. Recommendations for addressing the shortages are presented for each of the three housing areas on the Peninsula: NPS Headquarters area, the Campground area, and the Concessionaire area.

Concessionaire Housing: The completion of the programmed housing improvements for the hospitality concessionaire should remedy any housing shortages. The shortfall in non-shared units can be easily accommodated by converting surplus seasonal bedspaces into 29 non-shared units in any one of the three dormitories. However, it appears that 8 additional full service trailer sites will be needed to provide the trail ride concessionaire with adequate housing. This could be accomplished by extending another loop with utility hookups in the Norton trailer court area.

Projected Concessionaire Housing Needs	Current	Total Projected
Total Concessionaire personnel working on the NR		
Hospitality Concessionaire	207	207
Trail Rides Concessionaire	13	13
Total fixed housing need (non RVs)		
Hospitality Concessionaire	177	177
Trail Rides Concessionaire	0	0
Total trailer pad sites needed		
Hospitality Concessionaire	30**	30
Trail Rides Concessionaire	13	13

Concessionaire Employee Housing Assessment					
Housing Type	Projected Need	Existing Non-Shared Units	Existing Seasonal Bed Spaces	Existing Trailer Sites	Shortfall or Surplus
Fixed Housing					
Hospitality Concessionaire Non-Shared Units	43*	14			(29)
Hospitality Concessionaire Seasonal Bed Spaces	134		192**		58
Travel Trailer Pad Sites					
Hospitality Concessionaire	30			30**	0
Trail Rides Concessionaire	13			5***	(8)

* There is a need for 40 non-shared units to house managers, program leads, graveyard shift personnel, and security. In addition, 3 non-shared units are needed for visiting/rotating regional personnel.

** The new dormitory (44 units) and 15-site trailer court rehabilitation are both treated as existing conditions. The total number of existing seasonal bed spaces (192) represents only the double bunking (not the existing triple bunking) in the existing dorm units and potential double bunking space in the new 44-unit dorm.

*** This only includes the 5 original, trailer sites illustrated under the trail ride concessionaire's land assignment.

NPS Housing: Developing an accurate picture of the true NPS housing need on the North Rim is part art and science. There are a number of factors that influence the NPS housing needs on the North Rim. Jim Boucher, North Rim facility manager has observed the following conditions and has proposed a number of assumptions for re-assessing the North Rim housing need:

Projected NPS Employee & Partner Housing Needs	Current	Future	Total Projected
1) Total NPS & Partner personnel working on the NR	96	14	110
Adjustments affecting fixed housing needs			
2) Partners housed in personal travel trailers	(13)	(6)	(19)
3) Short term positions soon to expire	(6)		(6)
4) Dual career couples	(3)		(3)
5) NPS employees who supply their own travel trailers	(3)		(3)
6) Lapsed positions	(2)		(2)
7) SR employees housed in NPS travel trailers	(4)	(3)	(7)
8) Jacob Lake employees	(2)		(2)
Total	(33)		(42)
Total NPS fixed housing need	63	5	68
Non-Shared Units (Permanent Quarters)	26	0	26
Seasonal Bed Spaces	37	5	42
Adjustments affected trailer site needs			
2) Partners housed in personal travel trailers	10	6	16
5) Employees who supply their own travel trailers	4		4
7) SR employees temporarily housed in NPS travel trailers	5	3	8
Total NPS & Partner trailer pad sites needed *	19	9	28

* Over the past 10 years, there has been a concerted effort on behalf of the NPS to improve the housing conditions for its employees. One aspect of this effort has been focused on replacing trailers or mobile homes with permanent "fixed" quarters for housing employees at their duty station. However, the use of trailers or mobile homes as housing units is still viable for employees on travel status needing temporary quarters on the North Rim or for those employees/partners who prefer to use their own travel trailer for seasonal housing.

NPS Employees & Partner Housing Assessment					
Housing Type	Projected Need	Existing Non-Shared Units	Existing Seasonal Bed Spaces	Existing Trailer Sites	Shortfall or Surplus
Fixed Housing					
NPS Non-Shared Units (permanent quarters)	26	20			(6)
NPS Seasonal Bed Spaces	42		37*		(5)
Trailer Pad Sites					
NPS and Partners	28			12**	(16)

* This total assumes the 14 exposed frame cabins currently being rehabilitated will be available for seasonal housing.

** Norton Trailer Court's original capacity was 12 full service spaces. This does not include the current levels of use as additional trailers (total of 25) have been added over time without formally expanding the trailer court layout creating an overcrowded and haphazard arrangement. This total does not include the Helibase Trailer Camp nor Cochary Court in the NPS Headquarters area as they are proposed for removal under this plan.

The housing assessment reveals a shortfall of 6 permanent quarters, 5 seasonal bed spaces, and a shortfall of 16 trailer spaces. It is proposed that the shortfall in permanent quarters be resolved by making housing assignments in some of the larger non-shared seasonal bed space units, such as the North Rim Inn duplex cabins. This will increase the seasonal bed space shortage by 6. To accommodate the adjusted shortfall in seasonal bed spaces (5+6=11), it is recommended that the remaining exposed frame cabins in the campground area be rehabilitated in addition to converting the washroom bldg #925 into housing. This would increase seasonal bed spaces by 13, solving the seasonal bed space shortfall while also providing a bit of flexibility in reassigning 2 South Rim duty stationed employees or Grand Canyon Foundation (GCF) employees from trailer housing. (GCF provided funding to rehabilitate two cabins and would have preferential rights to 2 cabins) To accommodate the shortage in full service trailer space, it is proposed that the original 12 sites of the Norton Trailer Court be expanded to accommodate an additional 14 trailer sites. This expansion and the need to accommodate 8 additional Trail Ride concessionaire trailer sites will require expanding the current footprint of Norton Court to a proposed design capacity of 34 trailer sites. The option of adding another loop from the hospitality concessionaire's trailer court, just northwest of the mule barn, was dismissed to avoid introducing a visual intrusion that could be observed from the Transept Trail to the northwest. A detailed topographic survey to include tree size, type, and location is needed prior to a formalized design effort to sensitively locate the trailer sites and underground utilities while preserving as many existing trees as possible.

The following chart summarizes the proposed housing inventory adjustments by area:

Housing Area Inventory	Existing Non-Shared Units	Existing Seasonal Bedspace	Existing Trailer Pad Sites - Bedspaces	Proposed Non-Shared Units	Proposed Seasonal Bedspace	Proposed Trailer Pad Sites - Bedspaces
NPS Headquarters Area						
NPS and Partners	20	14	11-20	20	14	0-0
Hospitality Concessionaire	6	0	0	6	0	0
Campground Area						
NPS and Partners	0	23	0	6	30	0
Hospitality Concessionaire	6	0	0	6	0	0
Concessionaire Housing Area						
NPS and Partners	0	0	20-22	0	0	26-26
Hospitality Concessionaire	2	134	16-16	31	134	30-30
Trail Ride Concessionaire	0	0	5*-13			13-13
Visitor Lodging Area						
Hospitality Concessionaire	27	16	0	0	0	0
Total Housing Capacity						
NPS and Partners	20	37	31-42	26	44	26-26
Hospitality Concessionaire	41	150	16-16	43	134	30-30
Trail Ride Concessionaire	0	0	5*-13	0	0	13-13

* Note: This only includes the 5 original trailer sites shown under the Trail Ride concessionaire's land assignment even though additional trailers have been accommodated in areas outside their land assignment.

Summary of Action Items by Housing Area

NPS Headquarters Area

Action items for this area include:

- Remove Helibase & Cochary Trailer Courts with full site restoration.
- Retain the remaining mix of single family and multiplex housing units.

Campground Area

Action items for this area include the:

- Complete rehab of 14 exposed frame cabins.
- Complete rehab of bldg #923 laundry building.
- Convert/rehab remaining 12 exposed frame cabins into seasonal housing.
- Convert/rehab bldg #925 into seasonal housing.
- Designate 6 duplex cabins for 6 non-shared permanent housing units.
- Convert/rehab bldg #922 into community building.
- Maintain bldg #924 as storage facility.

Concessionaire Housing Area

Action items for this area include:

- Complete new dormitory (44-units).
- Relocate 26 concessionaire employees housed in lodge area's duplex cabins into the new dormitory and convert 9 lodge cabin units into additional visitor lodging.
- Relocate 17 concessionaire employees housed in the lodge area's motel basement units into new dormitory and convert space into storage.
- Redesign/expand Norton Trailer Court for a total design capacity of 34 sites. (original capacity-12 sites)



Post GMP Housing Construction



View of Exposed Frame Cabins



View of "Norton Court"

Proposed Employee Housing Adjustment Detail Breakdown

Housing Area Inventory	Existing Non-Shared Units	Proposed Non-Shared Units	Net Change Non-Shared Units	Existing Seasonal Bedspace	Proposed Seasonal Bedspace	Net Change Seasonal Bedspaces	Existing Trailer Pad Sites Bedspaces	Proposed Trailer Pad Sites Bedspaces	Net Change Trailer Pad Sites Bedspaces
NPS Headquarters Area									
NPS and Partners									
<i>Single Family Units</i>	10	10	0						
<i>Multi-plex Units</i>	10	10	0	8	8	0			
<i>Bunkhouse</i>				6	6	0			
<i>Cochary Trailer Court</i>							6-8	0-0	(6-8)
<i>Helibase Trailer Court</i>							5-12	0-0	(5-12)
Hospitality Concessionaire									
<i>Multi-plex Units</i>	6	6	0						
Campground Area									
NPS and Partners									
<i>Duplex Cabins</i>	0	6	6	9	3	(6)			
<i>Duplex Cabin (future rehab)</i>				0	1	1			
<i>Exposed Frame Cabins (under cx)</i>				14	14	0			
<i>Ex. Frame Cabins (future rehab)</i>				0	12	12			
Hospitality Concessionaire									
<i>Exposed Frame Duplex Cabins</i>	6	6	0						
Concessionaire Housing Area									
NPS and Partners									
<i>Norton Court</i>							20-22	26-26	6-4
Hospitality Concessionaire									
<i>Single Family Units</i>	2	2	0						
<i>Existing Trailer Court</i>							15-15	15-15	0-0
<i>Trailer Court constructed in 2004</i>							0	15-15	15-15
<i>Norton Court</i>							1-1	0-0	(1-1)
<i>Existing Dorms</i>				134	104	(30)			
<i>Dormitory constructed in 2004</i>	0	29	29	0	30	30			
Trail Ride Concessionaire									
<i>Within land assignment</i>							5-5	5-5	0
<i>Norton Court</i>							4-6	8-8	4-2
<i>Next to Mess Hall</i>							2-2	0-0	(2-2)
Visitor Lodging Area									
Hospitality Concessionaire									
<i>Lodge Duplex Cabins</i>	10	0	(10)	16	0	(16)			
<i>Motel Basement Units</i>	17	0	(17)						
Total Housing Capacity									
NPS and Partners	20	26	6	37	44	7	31-42	26-26	(5-16)
Hospitality Concessionaire	41	43	2	150	134	(16)	16-16	30-30	14-14
Trail Ride Concessionaire	0	0	0	0	0	0	9-13	13-13	2-0

For NPS employee housing assignments, non-shared units would be assigned to permanent employees who are duty stationed on the North Rim. NPS seasonal employees who are duty stationed on the North Rim would be assigned to a seasonal bed space, which in all cases except for the bunk house, would be a non-shared bedroom space. For hospitality concessionaire employee housing assignments, typically seasonal bed spaces would be assigned in a double bunked shared dormitory bedroom space.

Appendix 3. Building Rehabilitation Needs

A building condition assessment was commissioned as part of the planning effort to assess current conditions and develop rehabilitation recommendations for 11 structures on the North Rim. The results of this effort are presented below:

Dormitory - Building # 111 Year Built 1931

Recommended Use

Retain use as a dormitory (bunkhouse) for trail crew.

Summary of Recommended Stabilization

Roofing: Needs removal and replacement. Areas of sheathing at eaves need replacement.

Wall Siding: Areas in need of repair/replacement-in-kind.

Plumbing: Entire system needs replacement.

Windows: Need repair/replacement.

ADA: An accessible wheel-chair ramp is required. Replace exterior entry doors with 36" width doors. Accessible hardware on doors.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Interior/Finishes: Replace floor slab in bathroom and all floor finishes. Re-painting as required by required repairs.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure
- Doors and windows throughout
- Wood Lap and B&B siding and trim
- Exposed rafter tails, barge rafter outlookers, and shed roofs over porches with support brackets (metal roofing is not historic)
- Stone chimneys
- Light fixture (original at south end)

Interior

- Doors and trim

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years.

Assessment of Conditions:

1. Roofing: Fair to Poor condition. The non-historic corrugated metal roofing (and asphalt composition shingle roofing that lies below this) is deteriorating and in need of removal and replacement soon (with composition shingle roofing or a wood shingle roof – historic?)
2. Roof Structure and Trim: Good to Fair condition - the roof structure is performing adequately. Interior and exposed 2x6 and interior 1x members are in good condition. Areas of 1x12 exposed sheathing boards at eaves are poor and need repair / replacement-in-kind.
3. Wall Frame: Good to Fair condition - performing adequately.
4. Wall Siding: Fair to Poor condition and some areas in need of repair / replacement-in-kind.
5. Foundation / Floor Structure: Rubble stone masonry foundation - Fair condition and some areas in need of repair / re-pointing. 2x8 joist floor structure - Good to Fair condition - performing adequately. Note: Will need additional foundation / floor framing support if converted to use as an office building (Existing is not adequate for office use – min. 125 PSF live load required – existing is 40 +/- PSF capacity.)
6. Windows: Wood hopper and casement divided lite sash and frames are in poor condition and in need of repair / replacement-in-kind.
7. Doors: Wood panel ½ lite exterior doors Good to Fair condition - performing adequately. Note: 2'-8" wide doors do not conform to present day 3'-0" min. wide exit doors and H/C hardware also required. Screen doors Fair to Poor condition and in need of repair / replacement-in-kind. South porch lacks handrails (required with more than 2 risers on steps.) An accessible wheel-chair ramp is required (north entrance would be likely location.)
8. Interior Finishes: Interior wall and ceiling finishes are painted gypsum board (fair) and simple 1x wood trim (poor.) Floor is 1x wood boards (good/fair), linoleum (poor) and concrete slab (poor) in bath.
9. Building Systems: Good to Poor condition. Electrical service is new with good wiring and devices in building. HVAC system has been replaced recently and is in good condition. Water service (1" galvanized iron) and building piping is old and in need of replacement. Hot water heater is serviceable but in an improper location (bathroom) and should be relocated. Sanitary sewer (4" cast iron) is old with inadequate slope for proper drainage and interior drain waste and vent piping is also - old entire system is in need of replacement. Propane service (5/8" soft copper) is old and in need of replacement.
10. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based. Asbestos-containing wallboard is suspected in the furnace room.

Rehabilitation Scope of Work

The following is an outline of the work needed/recommended.

1. Demolition:

- Remove loose and scaling exterior paint; collect and dispose of lead paint properly as toxic material.
- Remove existing roofing to roof sheathing, remove damaged sheathing.
- Remove kitchen cabinets and appliances.
- Remove plumbing fixtures and all piping including water, propane and sewer services and enclosures.
- Remove floor finish to sheathing, demo concrete floor slab, and remove exterior entry doors.
- If discovered, remove asbestos-containing components properly as hazardous material.

2. Excavation and Foundation / Floor Structure:

- Excavate and construct new / modify existing pier and wood beam foundation system and add additional joists to provide for live load capacity of 125 PSF.
- Re-point stone foundation walls.
- Add ventilation
- Add underfloor insulation

3. Roof Structure and Roofing:

- Improve roof framing connections to one another and wall top plate (framing clips / straps.)
- Replace deteriorated sheathing boards
- Install new roofing (assume Comp. Shingles - actual material needs further discussion.)
- Add dormer or ridge venting
- Add R-30 ceiling insulation.

4. Exterior Frame and Siding Repair:

- Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume all of lap board siding and 50 % of the board & batten siding. Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors, out lookers and watertable board separating B&B and lap siding).

- Remove studs/headers at exterior entry doors and re-frame for new 3 feet wide doors.
- Prime, caulk and paint exterior.

5. Windows:

- Replace-in-kind deteriorated wood frames and sash (make more weather tight.)

6. Doors:

- Replace exterior doors/frames with new 3 feet wide doors/frames to match construction of existing doors. New (1/2 inch max. high) thresholds. New weather-stripping. New accessible hardware. New landing and accessible ramp at north entry door. New hand/guardrails at south landing.
7. Interior:
- Replace damaged gypsum board (assume 20 %.)
 - New wood baseboard.
 - Paint interior ceilings, walls, doors and trim.
 - New 3/8" underlayment and carpet.
 - New concrete slab or wood floor system and resilient floor finish in bath area. New resilient floor finish in kitchen.
 - New accessible hardware on all doors.
 - New partitions and door, and accessories if new H/C restroom part of rehab.
 - New H/C accessible kitchen including cabinets, counters, plumbing and appliances.
8. Mechanical:
- Replace entire plumbing system and fixtures in building including water service piping and building sewer.
 - Remove existing ductwork and install new insulated ductwork locating it higher up in attic space to allow full coverage of ceiling insulation at above ceiling.
 - Reinstall water heater in furnace room if new restroom part of rehab.
 - Add upper combustion air venting in furnace room.
9. Electrical:
- Remove existing exterior light fixtures and replace with fixtures matching original.
 - Add wiring, boxes, receptacles and interior lighting per new use requirements (assume adding 25%. Can be installed when siding removed at exterior walls.)

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
	Building 111				
	Exterior Demolition				
	Remove Corrugated Galvanized Roofing	1725	sf	\$ 0.51	\$ 883
	Remove Shingle Roofing (Asbestos ?)	1725	sf	\$ 0.35	\$ 595
	Remove Eave Sheathing	628	sf	\$ 0.49	\$ 306
	Remove Exterior Doors	3	ea	\$ 14.70	\$ 44
	Remove Exterior Screen Doors	2	ea	\$ 14.70	\$ 29
	Remove Door Framing	2	ea	\$ 18.80	\$ 38
	Remove Gas Service Regulator	1	lot	\$ 178.50	\$ 179
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove and Salvage Board and Batten Siding (Lead Base Paint?)	1041	sf	\$ 0.58	\$ 607
	Remove and Salvage Clap Board Siding (Lead Base Paint?)	483	sf	\$ 0.62	\$ 299
	Remove Sill	0.09	mbf	\$ 916.30	\$ 82
	Remove 20% of Framing	0.075	mbf	\$ 916.30	\$ 69
	Remove and Salvage Windows	13	ea	\$ 49.98	\$ 650
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
	Subtotal Exterior Demolition				\$ 4,178
	Lead Base Paint Removal				
	Chemical Strip paint to 12" Wide	1088	lf	\$ 11.79	\$ 12,831
	Collect and Bag Residue	10	bags	\$ 7.97	\$ 80
	Subtotal Lead Base Paint				\$ 12,910
	Remove Kitchen Equipment				
	Remove Kitchen Cabinetry Base	10	lf	\$ 5.87	\$ 59
	Remove Kitchen Cabinetry Upper	10	lf	\$ 5.87	\$ 59
	Remove Counter Top	10	lf	\$ 2.34	\$ 23
	Remove Plumbing Piping	150	lf	\$ 2.37	\$ 355
	Remove Gas Piping	100	lf	\$ 2.37	\$ 237
	Remove Sink	1	ea	\$ 50.58	\$ 51
	Remove Stove	1	ea	\$ 17.85	\$ 18
	Remove Refrigerator	2	ea	\$ 17.85	\$ 36
	Subtotal Kitchen Equipment				\$ 837
	Bathroom Demolition				
	Remove W/C	2	ea	\$ 44.63	\$ 89
	Remove Lav	2	ea	\$ 35.70	\$ 71
	Remove Water Heater	1	ea	\$ 35.70	\$ 36
	Remove Washer	1	ea	\$ 17.85	\$ 18
	Remove Dryer	1	ea	\$ 17.85	\$ 18
	Remove Shower Tile	41	sf	\$ 0.60	\$ 24
	Remove Shower Surround	132	sf	\$ 1.19	\$ 157
	Remove Concrete Slab In Bathroom	550	sf	\$ 2.32	\$ 1,276
	Remove Plumbing Piping	400	lf	\$ 2.37	\$ 947
	Haul Away Rubble (200 Mile Round Trip)	3	trip	\$ 238.00	\$ 714
	Subtotal Bathroom Demolition				\$ 3,351

Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
	HVAC Demolition				
	Remove Ducting	125	lf	\$ 3.13	\$ 391
	Salvage Forced Air Furnace	1	ea	\$ 211.82	\$ 212
	Subtotal HVAC Demolition				\$ 603
	Interior Walls, Ceiling & Floor Demolition				
	Remove Electrical	1100	sf	\$ 2.30	\$ 2,526
	Remove Sheet Rock (20%of Walls/Ceiling)	900	sf	\$ 0.24	\$ 214
	Remove Baseboard (Lead Base Paint?)	425	lf	\$ 0.39	\$ 167
	Remove Lanolieum Flooring (Asbestos?)	1100	sf	\$ 0.33	\$ 367
	Subtotal Interior Walls, Ceiling & Floor				\$ 3,274
	Exterior Building Refinish				
	Jack Building to Replumb/Resquare Building	1	lot	\$ 5,000.00	\$ 5,000
	Repair Repoint Stone Piers	8	ea	\$ 297.50	\$ 2,380
	Repoint Exterior Foundation Walls	50	cf	\$ 5.70	\$ 285
	1x12 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Rafter Anchors	44	ea	\$ 2.58	\$ 114
	Ceiling Joist Anchors	44	ea	\$ 2.37	\$ 104
	Spike Grids	88	ea	\$ 2.95	\$ 260
	#30 Roof Felt	17	sq	\$ 23.10	\$ 393
	Asphalt Shingle Roof	17	sq	\$ 87.47	\$ 1,487
	Drip Flashing	160	lf	\$ 2.23	\$ 356
	Ridge Vent	42	lf	\$ 4.11	\$ 172
	Flashing Around Vents, Chimneys, Etc.	40	sf	\$ 6.72	\$ 269
	R30 Roof Insulation	1660	sf	\$ 0.94	\$ 1,561
	New Structural Framing (20%)	0.075	mbf	\$ 1,475.60	\$ 111
	R11 Wall Insulation	1088	sf	\$ 0.46	\$ 505
	R30 Floor Insulation	1100	sf	\$ 0.94	\$ 1,034
	New Wall Framing	0.075	mbf	\$ 1,761.20	\$ 132
	Treated 2x4 Sill	0.09	mbf	\$ 2,237.20	\$ 201
	Reinstall Board and Batten Siding	840	sf	\$ 1.33	\$ 1,120
	New Board and Batten Siding	200	sf	\$ 6.82	\$ 1,364
	Reinstall Clapboard Siding	390	sf	\$ 1.00	\$ 390
	New Clapboard Siding	90	sf	\$ 5.12	\$ 461
	3/8" OSB Sheathing	1354	sf	\$ 0.77	\$ 1,047
	#30 felt on Walls	14	csf	\$ 23.10	\$ 323
	New 2x4 Belt Rail Seperating Siding	0.09	mbf	\$ 1,761.20	\$ 159
	Flashing for Belt Rail and Windows	200	lf	\$ 6.72	\$ 1,345
	Window Trim	150	lf	\$ 46.77	\$ 7,015
	Door Trim	51	lf	\$ 83.30	\$ 4,248
	Door Frame 3-0x6-8	3	ea	\$ 154.70	\$ 464
	Half-light Exterior Door	2	ea	\$ 770.00	\$ 1,540
	Exterior Screen Door	2	ea	\$ 100.00	\$ 200
	Full Exterior Door	1	ea	\$ 703.00	\$ 703
	2-0x4-0 Window Repair/Replace	10	ea	\$ 415.20	\$ 4,152
	2-0x3-0 Window Repair/Replace	3	ea	\$ 311.14	\$ 933
	Paint Exterior	2000	sf	\$ 0.56	\$ 1,119
	Paint Window/Trim	150	lf	\$ 0.44	\$ 66
	ADA Ramp	40	sf	\$ 29.75	\$ 1,190
	Handrails for Steps and Porch	1	lot	\$ 2,288.00	\$ 2,288
	Subtotal Exterior Building Refinish				\$ 46,750

Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
	Interior Refinish				
	Replace Gypboard (20%)	900	sf	\$ 0.92	\$ 825
	Wood Baseboards	415	lf	\$ 3.32	\$ 1,378
	Paint Walls,Ceiling	4452	sf	\$ 0.44	\$ 1,960
	Paint Interior Doors	6	ea	\$ 65.63	\$ 394
	Accessable Hardware All Interior Doors	6	set	\$ 208.25	\$ 1,250
	3/8" OSB Sheathing	1088	sf	\$ 0.77	\$ 842
	New 2x8 Joists in Bathroom	0.25	mbf	\$ 1,124.55	\$ 281
	3/4" Underlayment in Bathroom	216	sf	\$ 1.51	\$ 326
	Joist Hangers	28	ea	\$ 2.37	\$ 66
	Resilient Flooring Bath/Kitchen Sheetgoods	460	sf	\$ 4.91	\$ 2,261
	Carpet 40 oz Glued	85	sy	\$ 39.56	\$ 3,362
	Kitchen Cabinetry Upper & Lower	20	lf	\$ 297.50	\$ 5,950
	Counter Top	20	lf	\$ 30.70	\$ 614
	Kitchen Sink	1	ea	\$ 698.53	\$ 699
	Rough In	1	ea	\$ 402.82	\$ 403
	Gas Stove Rough in	1	ea	\$ 51.17	\$ 51
	Hood Top	1	ea	\$ 396.27	\$ 396
	Shower Rough in	3	ea	\$ 409.96	\$ 1,230
	Shower Surround w/ Handicap Seat	1	ea	\$ 5,250.28	\$ 5,250
	Lavatory	2	ea	\$ 449.23	\$ 898
	Rough in	2	ea	\$ 656.88	\$ 1,314
	W/C	2	ea	\$ 327.25	\$ 655
	Rough In	2	ea	\$ 358.19	\$ 716
	W/C Partitions	2	ea	\$ 661.64	\$ 1,323
	Handicap Accessories-W/C	1	set	\$ 380.80	\$ 381
	Dryer Venting	1	set	\$ 44.03	\$ 44
	Water Heater Venting	1	set	\$ 290.36	\$ 290
	Water Heater Hookup	1	set	\$ 51.17	\$ 51
	HVAC Reinstallation	1	ea	\$ 214.20	\$ 214
	HVAC Combustion Air Venting	2	ea	\$ 44.03	\$ 88
	HVAC Ducting	390	lb	\$ 4.63	\$ 1,805
	Insulation	1200	sf	\$ 2.25	\$ 2,699
	6" Insulated Flex Duct	160	lf	\$ 5.88	\$ 941
	Sewer Piping	80	lf	\$ 45.28	\$ 3,622
	Vent Pipe	100	lf	\$ 20.83	\$ 2,083
	Domestic Water Piping	100	lf	\$ 7.43	\$ 743
	Water Pipe Insulation	100	lf	\$ 3.30	\$ 330
	Gas Piping	50	lf	\$ 6.78	\$ 339
	Rehab Building Electrical	1100	sf	\$ 9.16	\$ 10,079
	Reinstall Refrigerators	2	ea	\$ 29.75	\$ 60
	Reinstall Washer	1	ea	\$ 29.75	\$ 30
	Reinstall Dryer	1	ea	\$ 29.75	\$ 30
	Reinstall Gas Regulator	1	ea	\$ 119.00	\$ 119
	Subtotal Interior Refinish				\$ 56,391

Uniformat Summary

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
	<u>Bldg 111</u>			Percent	
	Demolition		\$ 25,154	9.5%	
	Exterior Demolition	\$ 4,178			
	Lead Base Paint Removal	\$ 12,910			
	Remove Kitchen Equipment	\$ 837			
	Bathroom Demolition	\$ 3,351			
	HVAC Demolition	\$ 603			
	Interior Walls, Ceiling & Floor Demolition	\$ 3,274			
	Building Remodel		\$ 103,141	38.8%	
	Exterior Building Refinish	\$ 46,750			
	Interior Refinish	\$ 56,391			
	Subtotal Direct Construction Costs		\$ 128,294	48.2%	
	Location Factor (42%)		\$ 53,884	20.3%	
	Design Contingency (20%)		\$ 25,659	9.6%	
	Total Direct Construction Cost		\$ 207,837	78.1%	
	General Conditions (8%)		\$ 16,627	6.3%	
	Overhead and Profit (20%)		\$ 41,567	15.6%	
	Total NET Construction Cost		\$ 266,031	100.0%	

Fire Management Office - Building # 118

Year Built 1925 (moved to present location 1935 by CCC)

Recommended Use

Retain use as a management support facility: Temporary office, storage, and NPS mail distribution center.

Summary of Recommended Stabilization

Roofing: Needs removal and replacement. Areas of exposed rafter tails, barge boards, trim and sheathing at eaves need replacement.

Wall siding: Areas need of repair/replacement-in-kind.

Wall sill plate: Areas in need of replacement.

Exterior doors: Need repair/replacement.

ADA: Replace non-historic concrete steps and porch (not sloped away from building and causing water damage to building) with wooden steps, porch and an accessible wheel-chair ramp. Accessible hardware on all doors.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Finishes: Re-painting as required by required repairs.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure
- Doors and windows throughout
- Wood B & B siding and trim
- Exposed rafter tails, barge rafter outlookers and support brackets (metal roofing is not historic)
- Stone chimney

Interior

- Doors and trim

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years.

Assessment of Conditions:

1. Roofing: Fair condition. The non-historic corrugated metal roofing (and asphalt composition shingle roofing that lies below this) is deteriorating and in need of removal and replacement soon (with composition shingle roofing or a wood shingle roof – historic?)
2. Roof Structure and Trim: Fair condition - the roof structure is performing adequately. Interior and exposed 2x6 members are in fair condition. Exposed rafter tails, barge boards and trim are in poor condition and in need of repair or replacement-in-kind. Areas of 1x sheathing boards are poor and need repair / replacement-in-kind (evidence of past water intrusion in attic.)
3. Non-historic concrete steps and porch (not sloped away from building and causing water damage to building) need to be replaced with wooden steps, ramp and porch.
4. Wall Frame: Fair condition - performing adequately. Wall sill plate is rotting in places and in need of replacement.
5. Wall Siding: Fair condition and some areas in need of repair / replacement-in-kind.
6. Foundation / Floor Structure: Rubble stone masonry and concrete foundation - Fair condition and some areas in need of repair / re-pointing. 2x8 joist floor joist structure - Good to Fair condition - performing adequately. Note: May need additional foundation / floor framing support if continue use as an office building (Existing may not be adequate for min. 125 PSF live load – existing live loading capacity is unknown, though this was a warehouse originally.)
7. Windows: Wood awning and casement divided lite sash and frames are in good to fair condition.
8. Doors: Wood panel and ½ lite sliding exterior doors fair to poor condition – barely performing and in need of repair / replacement-in-kind.
The existing porch is non-historic, not compatible and should be removed. A new porch / with steps and an accessible wheel-chair ramp is needed.
9. Interior Finishes: Interior wall and ceiling finishes are stained wood boards (good), painted gypsum board (good) and simple 1x wood trim (good.) Floor is 1x wood boards (good), VCT (good.)
10. Building Systems: Good condition. Electrical performing adequately.
11. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove loose and scaling exterior paint; collect and dispose of lead paint properly as toxic material.
 - Remove existing roofing to roof sheathing, remove damaged rafter tails, barges, trim and areas of sheathing.
 - Remove concrete porch and steps.
2. Excavation and Foundation / Floor Structure:
 - If required, excavate and construct new / modify existing pier and wood beam foundation system and add additional joists to provide for live load capacity of 125 PSF.
 - Re-point stone foundation walls.
 - Add ventilation
 - Add underfloor insulation
3. Roof Structure and Roofing:
 - Improve roof framing connections to one another and wall top plate (framing clips / straps.)
 - Replace deteriorated roof framing, trim and sheathing boards
 - Install new roofing (assume Comp. Shingles - actual material needs further discussion.)
 - Add R-30+/- insulation on deck / rafter spaces.
4. Exterior Frame and Siding Repair:
 - Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors and outlookers.
 - Prime, caulk and paint exterior.
5. Front Porch: Install wooden porch and steps in keeping with historic appearance and ADA ramp.
6. Windows:
 - Repair wood frames and sash (make more weather tight.)

7. Doors:

- Replace-in-kind exterior doors/frames to match construction of existing doors. New (1/2 inch max. high) thresholds. New weather-stripping. New accessible hardware. New landing and accessible ramp.

8. Interior Finishes:

- New accessible hardware on all doors.

9. Mechanical: Electric heating adequate.

10. Electrical:

- Add wiring, boxes, receptacles and interior lighting per new use requirements (assume adding 50%. Can be installed when siding removed at exterior walls.)

Bldg 118

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
	Building 118				
	Exterior Demolition				
	Remove Corrugated Galvanized Roofing	1313	sf	\$ 0.51	\$ 672
	Remove Shingle Roofing (Asbestos ?)	1313	sf	\$ 0.35	\$ 453
	Remove Eave Sheathing	240	sf	\$ 0.49	\$ 117
	Remove Exterior Doors	1	ea	\$ 14.70	\$ 15
	Remove Door Framing	1	ea	\$ 18.80	\$ 19
	Remove Sliding Doors	2	ea	\$ 59.50	\$ 119
	Remove Sliding Door Frame	1	ea	\$ 44.03	\$ 44
	Remove and Salvage Board and Batten Siding (Lead Base Paint?)	1200	sf	\$ 0.58	\$ 700
	Remove Sill	0.09	mbf	\$ 916.30	\$ 82
	Remove 20% of Framing	0.075	mbf	\$ 916.30	\$ 69
	Demolish Concrete Platform	233	sf	\$ 13.90	\$ 3,239
	Load and Haul Away Broken Concrete	14	cy	\$ 5.95	\$ 83
	Remove and Salvage Windows	13	ea	\$ 49.98	\$ 650
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
	Subtotal Exterior Demolition				\$ 6,361
	Lead Base Paint Removal				
	Chemical Strip paint to 12" Wide	1200	lf	\$ 11.79	\$ 14,151
	Collect and Bag Residue	12	bags	\$ 7.97	\$ 96
	Subtotal Lead Base Paint				\$ 14,247
	Exterior Building Refinish				
	Repair Repoint Stone Piers	8	ea	\$ 297.50	\$ 2,380
	Repoint Exterior Foundation Walls	50	cf	\$ 5.70	\$ 285
	1x12 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Rafter Anchors	44	ea	\$ 2.58	\$ 114
	Ceiling Joist Anchors	44	ea	\$ 2.37	\$ 104
	Spike Grids	88	ea	\$ 2.95	\$ 260
	#30 Roof Felt	14	sq	\$ 23.10	\$ 323
	Asphalt Shingle Roof	14	sq	\$ 87.47	\$ 1,225
	Drip Flashing	160	lf	\$ 2.23	\$ 356
	Ridge Vent	42	lf	\$ 4.11	\$ 172
	Flashing Around Vents, Chimneys, Etc.	40	sf	\$ 6.72	\$ 269
	R30 Roof Insulation	1320	sf	\$ 0.94	\$ 1,241
	New Structural Framing (20%)	0.075	mbf	\$ 1,475.60	\$ 111
	R11 Wall Insulation	1100	sf	\$ 0.46	\$ 511
	R30 Floor Insulation	880	sf	\$ 0.94	\$ 827
	New Wall Framing (20%)	0.075	mbf	\$ 1,761.20	\$ 132
	Treated 2x4 Sill	0.09	mbf	\$ 2,237.20	\$ 201
	Reinstall Board and Batten Siding	960	sf	\$ 1.33	\$ 1,279
	New Board and Batten Siding	240	sf	\$ 6.82	\$ 1,636

Bldg 118

3/8" OSB Sheathing	1200	sf	\$	0.77	\$	928
#30 felt on Walls	12	csf	\$	23.10	\$	277
Flashing for Windows/Trim	240	lf	\$	6.72	\$	1,614
Window Trim	60	lf	\$	46.77	\$	2,806
Door Trim	51	lf	\$	83.30	\$	4,248
Door Frame 3-0x6-8	1	ea	\$	154.70	\$	155
Sliding Door Framing	1	ea	\$	357.00	\$	357
Full Exterior Door	1	ea	\$	703.00	\$	703
Sliding Door w/Windows	2	ea	\$	900.00	\$	1,800
2-6x4-0 Window Repair/Replace	15	ea	\$	415.20	\$	6,228
Paint Exterior	1200	sf	\$	0.56	\$	671
Paint Window/Trim	150	lf	\$	0.44	\$	66
New Wooden Platform	233	sf	\$	35.70	\$	8,318
ADA Ramp	40	sf	\$	29.75	\$	1,190
Handrails for Steps and Porch	1	lot	\$	3,288.00	\$	3,288
Subtotal Exterior Building Refinish						\$ 46,337
Interior Refinish						
Paint/Stain Walls,Ceiling	1200	sf	\$	0.44	\$	528
Paint Interior Doors	1	ea	\$	65.63	\$	66
Accessable Hardware All Interior Doors	1	set	\$	208.25	\$	208
3/8" OSB Sheathing	1200	sf	\$	0.77	\$	928
Rehab Building Electrical	1100	sf	\$	5.65	\$	6,218
Subtotal Interior Refinish						\$ 7,948
Option: Upgrade for Use as Office Space:						
Demolition						
Remove Original Stone Footers	4	ea	\$	178.50	\$	714
Removal Flooring in Building	900	sf	\$	0.93	\$	835
Subtotal Demolition						\$ 1,549
Additional Foundation Support						
Excavate For Footers by Hand	4	cy	\$	77.35	\$	309
Forms	48	afca	\$	3.20	\$	154
Rebar	0.0835	ton	\$	1,279.25	\$	107
Concrete	4	cy	\$	84.49	\$	338
Wall Forms for Stem Wall	64	sf	\$	4.86	\$	311
Rebar	0.0835	ton	\$	1,279.25	\$	107
Concrete	1	cy	\$	84.49	\$	84
Additional Center Beam	0.147	mbf	\$	1,846.88	\$	271
Additional 2x6 Joists	1.075	mbf	\$	1,100.75	\$	1,183
Joist Anchors	172	ea	\$	2.37	\$	407
Subtotal Additional Foundation Support						\$ 3,272
Upgrade Life Safety Systems						
Attic/Main/Crawl Space Dry Pipe	2200	sf	\$	7.08	\$	15,577
Smoke Detection System	2200	sf	\$	1.79	\$	3,927
Upgrade Water Main	50	lf	\$	33.44	\$	1,672
Subtotal Life Safety						\$ 21,176

Uniformat Summary

Bldg 118		Percent	
Demolition		\$ 2,747	2.3%
Exterior Demolition	\$ 367		
Lead Base Paint Removal	\$ 2,380		
Building Remodel		\$ 54,285	45.9%
Exterior Building Refinish	\$ 46,337		
Interior Refinish	\$ 7,948		
Subtotal Direct Construction Costs		\$ 57,031	48.2%
Location Factor (42%)		\$ 23,953	20.3%
Design Contingency (20%)		\$ 11,406	9.6%
Total Direct Construction Cost		\$ 92,391	78.1%
General Conditions (8%)		\$ 7,391	6.3%
Overhead and Profit (20%)		\$ 18,478	15.6%
Total NET Construction Cost		\$ 118,260	100.0%
Bldg 118 Upgrade to Office Space		Percent	
Option: Upgrade for Use as Office Space:		\$ 25,997	48.2%
Demolition	\$ 1,549		
Additional Foundation Support	\$ 3,272		
Upgrade Life Safety Systems	\$ 21,176		
Subtotal Direct Construction Costs		\$ 25,997	48.2%
Location Factor (42%)		\$ 10,919	20.3%
Design Contingency (20%)		\$ 5,199	9.6%
Total Direct Construction Cost		\$ 42,116	78.1%
General Conditions (8%)		\$ 3,369	6.3%
Overhead and Profit (20%)		\$ 8,423	15.6%
Total NET Construction Cost		\$ 53,908	100.0%

Ranger Station - Building # 119

Year Built 1934 (*originally an equipment shed converted to office with porch addition in 1976*)

Recommended Use

Convert north office to interpretation office and explore potentials to increase useable office area through removal of partitions and combining with adjacent space; convert south office to fee supervisor office.

Summary of Recommended Stabilization

Roofing: Needs removal and replacement.

Wall siding: Areas need of repair/replacement-in-kind.

Foundation: Areas of masonry in need of repair/repointing; piers/posts in need of repair/replacement.

ADA: An accessible wheel-chair ramp is required. Accessible hardware on all doors.

Electrical: Replace out-dated portions of electrical system wiring and devices.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Finishes: Re-painting as required by required repairs.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure
- Wood B & B siding and trim
- Exposed rafter tails, barge rafter outlookers and support brackets (metal roofing is not historic)

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years.

Assessment of Conditions:

1. Roofing: Fair condition. The non-historic corrugated metal roofing (and asphalt composition shingle roofing that lies below this) is deteriorating and in need of removal and replacement soon (with composition shingle roofing or a wood shingle roof – historic?)
2. Roof Structure and Trim: Fair condition - the roof structure is performing adequately. Interior and exposed 2x6 members are in fair condition. Exposed rafter tails, barge boards and trim

are in fair condition. Exposed 1x sheathing boards are fair. Polyisocyanurate rigid insulation has been installed in rafter spaces.

3. Wall Frame: Fair condition - performing adequately. Fiberglass batt and polyisocyanurate rigid insulation installed.
4. Wall Siding: Fair condition and some areas in need of repair / replacement-in-kind.
5. Foundation / Floor Structure: Rubble stone masonry foundation - Fair to Poor condition with areas in need of repair / re-pointing. 2x6 joist floor joist structure - Good to Fair condition - performing adequately. Note: May need additional foundation / floor framing support if continue use as an office building (Existing may not be adequate for min. 125 PSF live load – existing live loading capacity is unknown.)
6. Windows: Non-original aluminum horizontal sliding sash and frames are in good condition. Two sets of windows at each opening – one installed at exterior side of wall frame and the other at the interior side of wall frame. Two or so windows have panes in need of glass replacement.
7. Doors: Non-original exterior doors fair condition –performing adequately.
8. The existing porch (deck and steps) is non-historic is in poor condition and should be replaced soon. A new porch / with steps and an accessible wheel-chair ramp is needed.
9. Interior Finishes: Interior wall and ceiling finishes are thin hardboard paneling (good), painted gypsum board (good), suspended acoustical ceiling (good - below gypsum board), and simple 1x wood trim (good.) Floor is 1x wood boards (good), VCT (good.) and carpet (good.)
10. Building Systems: Fair condition. Electrical performing adequately, but some electrical wiring not per today's code (out-dated.) Electrical heaters fair condition.
11. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:

- Remove loose and scaling exterior paint; collect and dispose of lead paint properly as toxic material.
- Remove existing roofing to roof sheathing, remove damaged sheathing.

2. Excavation and Foundation / Floor Structure:

- If required, excavate and construct new / modify existing stone foundation and pier and wood beam foundation system and add additional joists to provide for live load capacity of 100 PSF.
- Re-point stone foundation walls. Re-construct failing piers and posts / girders.
- Add ventilation
- Add underfloor insulation

3. Roof Structure and Roofing:

- Improve roof framing connections to one another and wall top plate (framing clips / straps.)
- Replace damage rafters and joists.
- Replace deteriorated sheathing boards
- Install new roofing (assume Comp. Shingles - actual material needs further discussion.)
- Add insulation on deck / rafter spaces to increase to total R value of 30+.

4. Exterior Frame and Siding Repair:

- Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors and outlookers.

- Prime, caulk and paint exterior.

5. Windows:

- Replace broken and cracked panes of glass.

6. Doors:

- New weather-stripping. New (1/2 inch max. high) thresholds. New accessible hardware. New landing and accessible ramp.

7. Interior Finishes:

- New accessible hardware on all doors.

8. Mechanical:

- New Heating and A/C system suggested.

9. Electrical:

- Add wiring, boxes, receptacles and interior lighting to replace out-dated portions of system and add per new use requirements (assume adding 50%. Can be installed when siding removed at exterior walls.)

Bldg 119

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 119					
Exterior Demolition					
	Remove Corrigated Galvanized Roofing	1698	sf	\$ 0.51	\$ 869
	Remove Shingle Roofing (Asbestos ?)	1698	sf	\$ 0.35	\$ 586
	Remove Eave Sheathing	322	sf	\$ 0.49	\$ 157
	Remove Front Porch & Deck	250	sf	\$ 0.93	\$ 232
	Remove Exterior Door Hardware	5	ea	\$ 14.70	\$ 73
	Remove Gas Service Regulator	1	lot	\$ 178.50	\$ 179
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove and Salvage Board and Batten Siding (Lead Base Paint?)	1041	sf	\$ 0.58	\$ 607
	Remove Sill	0.09	mbf	\$ 916.30	\$ 82
	Remove 20% of Framing	0.075	mbf	\$ 916.30	\$ 69
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
	Subtotal Exterior Demolition				\$ 3,252
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	1504	lf	\$ 11.79	\$ 17,737
	Collect and Bag Residue	15	bags	\$ 7.97	\$ 120
	Subtotal Lead Base Paint				\$ 17,856
HVAC Demolition					
	Remove Gas Piping	100	lf	\$ 2.37	\$ 237
	Remove Ducting	125	lf	\$ 3.13	\$ 391
	Remove Forced Air Furnace	1	ea	\$ 211.82	\$ 212
	Subtotal HVAC Demolition				\$ 840
Interior Walls, Ceiling & Floor Demolition					
	Remove Electrical	1100	sf	\$ 2.30	\$ 2,526
	Subtotal Interior Walls, Ceiling & Floor				\$ 2,526
Exterior Building Refinish					
	Jack Building to Replumb/Resquare Building	1	lot	\$ 5,000.00	\$ 5,000
	Repair Repoint Stone Piers	8	ea	\$ 297.50	\$ 2,380
	Repoint Exterior Foundation Walls	150	cf	\$ 5.70	\$ 855
	1x12 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Replace Rafters	0.35	mbf	\$ 1,100.75	\$ 385
	Rafter Anchors	110	ea	\$ 2.58	\$ 284
	Ceiling Joist Anchors	110	ea	\$ 2.37	\$ 260
	Spike Grids	110	ea	\$ 2.95	\$ 325
	#30 Roof Felt	17	sq	\$ 23.10	\$ 393
	Asphalt Shingle Roof	17	sq	\$ 87.47	\$ 1,487
	Drip Flashing	160	lf	\$ 2.23	\$ 356
	Ridge Vent	54	lf	\$ 4.11	\$ 222
	Flashing Around Vents, Chimneys, Etc.	40	sf	\$ 6.72	\$ 269
	R30 Roof Insulation	1660	sf	\$ 0.94	\$ 1,561

Bldg 119

New Structural Framing (20%)	0.075	mbf	\$	1,475.60	\$	111
R11 Wall Insulation	1100	sf	\$	0.46	\$	511
R30 Floor Insulation	1100	sf	\$	0.94	\$	1,034
New Wall Framing	0.075	mbf	\$	1,761.20	\$	132
Treated 2x4 Sill	0.096	mbf	\$	2,237.20	\$	215
Reinstall Board and Batten Siding	550	sf	\$	1.33	\$	733
New Board and Batten Siding	550	sf	\$	6.82	\$	3,750
3/8" OSB Sheathing	1100	sf	\$	0.77	\$	851
#30 felt on Walls	1100	csf	\$	23.10	\$	25,408
New 2x4 Belt Rail Seperating Siding	0.09	mbf	\$	1,761.20	\$	159
Flashing for Belt Rail and Windows	200	lf	\$	6.72	\$	1,345
Window Trim	150	lf	\$	46.77	\$	7,015
Door Trim	51	lf	\$	83.30	\$	4,248
Full Exterior Door	1	ea	\$	703.00	\$	703
2-0x3-0 Window Repair/Replace	3	ea	\$	311.14	\$	933
Paint Exterior	2000	sf	\$	0.56	\$	1,119
ADA Door Hardware	5	sets	\$	297.50	\$	1,488
Paint Window/Trim	150	lf	\$	0.44	\$	66
New Porch	250	sf	\$	41.65	\$	10,413
ADA Ramp	40	sf	\$	29.75	\$	1,190
Handrails for Steps and Porch	1	lot	\$	2,288.00	\$	2,288
Subtotal Exterior Building Refinish						\$ 79,747
Interior Refinish						
Wood Baseboards	415	lf	\$	3.32	\$	1,378
Paint Walls,Ceiling	4200	sf	\$	0.44	\$	1,849
Paint Interior Doors	2	ea	\$	65.63	\$	131
Accessable Hardware All Interior Doors	2	set	\$	208.25	\$	417
Water Heater Venting	1	set	\$	290.36	\$	290
HVAC Furnace	1	ea	\$	1,220.94	\$	1,221
HVAC Combustion Air Venting	2	ea	\$	44.03	\$	88
HVAC Ducting	400	lb	\$	4.63	\$	1,852
Insulation	1200	sf	\$	2.25	\$	2,699
6" Insulated Flex Duct	160	lf	\$	5.88	\$	941
Gas Piping	50	lf	\$	6.78	\$	339
Rehab Building Electrical	1100	sf	\$	9.16	\$	10,079
Reinstall Gas Regulator	1	ea	\$	119.00	\$	119
Subtotal Interior Refinish						\$ 21,403
Option: Upgrade for Use as Office Space:						
Demolition						
Remove Original Stone Footers	4	ea	\$	178.50	\$	714
Subtotal Demolition						\$ 714
Additional Foundation Support						
Excavate For Footers by Hand	4	cy	\$	77.35	\$	309
Forms	48	afca	\$	3.20	\$	154
Rebar	0.0835	ton	\$	1,279.25	\$	107
Concrete	4	cy	\$	84.49	\$	338
Wall Forms for Stem Wall	64	sf	\$	4.86	\$	311
Rebar	0.0835	ton	\$	1,279.25	\$	107
Concrete	1	cy	\$	84.49	\$	84
Additional Center Beam	0.147	mbf	\$	1,846.88	\$	271
Additional 2x6 Joists	1.075	mbf	\$	1,100.75	\$	1,183
Joist Anchors	172	ea	\$	2.37	\$	407
Subtotal Additional Foundation Support						\$ 3,272

Uniformat Summary

		<u>Bldg 119</u>			Percent
		Demolition		\$ 24,474	9.4%
		Exterior Demolition	\$ 3,252		
		Lead Base Paint Removal	\$ 17,856		
		HVAC Demolition	\$ 840		
		Interior Walls, Ceiling & Floor Demolition	\$ 2,526		
		Building Remodel		\$ 101,149	38.8%
		Exterior Building Refinish	\$ 79,747		
		Interior Refinish	\$ 21,403		
		Subtotal Direct Construction Costs		\$ 125,623	48.2%
		Location Factor (42%)		\$ 52,762	20.3%
		Design Contingency (20%)		\$ 25,125	9.6%
		Total Direct Construction Cost		\$ 203,510	78.1%
		General Conditions (8%)		\$ 16,281	6.3%
		Overhead and Profit (20%)		\$ 40,702	15.6%
		Total NET Construction Cost		\$ 260,493	100.0%
		<u>Bldg 119 Upgrade to Office Space</u>			Percent
		Option: Upgrade for Use as Office Space:		\$ 3,986	48.2%
		Demolition	\$ 714		
		Additional Foundation Support	\$ 3,272		
		Subtotal Direct Construction Costs		\$ 3,986	48.2%
		Location Factor (42%)		\$ 1,674	20.3%
		Design Contingency (20%)		\$ 797	9.6%
		Total Direct Construction Cost		\$ 6,457	78.1%
		General Conditions (8%)		\$ 517	6.3%
		Overhead and Profit (20%)		\$ 1,291	15.6%
		Total NET Construction Cost		\$ 8,265	100.0%

Gas and Oil Station - Building # 125

Year Built 1933 (currently used as a jail facility)

Recommended Use

Convert to office space.

Summary Of Recommended Stabilization

Roofing: Needs removal and replacement. Roof frame in need of structural repair to eliminate sagging. The front porch canopy is in poor condition and should be re-paired replaced-in-kind with non-original brackets removed and log columns in center reinstalled per original design construction.

Wall Siding: Areas in need of repair/replacement-in-kind.

Foundation/Floor Slab: Settlement indicates need for repair/replacement.

ADA: Replace exterior entry door with new door. Accessible hardware on door.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Interior/Finishes: Re-painting as required by required repairs.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure
- Wood Lap siding and trim
- Wood windows
- Wood framed canopy, log columns, exposed rafter tails, barge rafter, and outlookers (metal roofing is not historic)

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Poor condition. The non-historic corrugated metal roofing (and asphalt composition shingle roofing that lies below this) is deteriorating and in need of removal and replacement soon (with composition shingle roofing or a wood shingle roof – historic?)
2. Roof Structure and Trim: Poor condition - the roof structure is not performing adequately – it is sagging in two directions. Interior and exposed 2x6 members are in fair condition. Exposed rafter tails, barge boards and trim are in fair condition. Exposed 1x sheathing boards are fair.

3. Wall Frame: Fair condition - performing adequately – some repair / replacement may be required.
4. Wall Siding: Fair condition and some areas in need of repair / replacement-in-kind.
5. Foundation / Floor Structure: Concrete foundation / floor slab – Fair to Poor condition with areas in need of repair as building is settling at the front and rear.
6. Windows: Fair condition - performing adequately. Some re-glazing of glass required.
7. Doors: exterior door poor condition – need replace-in-kind.
8. The front porch canopy is in poor condition and should be re-paired replaced-in-kind with non-original brackets removed and log columns in center reinstalled as per original construction.
9. Interior Finishes: Original wall finish covered by added 2x4 wall framing with painted gypsum board (good), and simple 1x wood trim (good.) Concrete slab floor (fair) is cracked.
10. Building Systems: Good condition. Electrical performing adequately. Electrical heaters good condition. Water connection to building (hose bib) operable. Condition of fire sprinkler system (two heads in ceiling) unknown.
11. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope Of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove loose and scaling exterior paint; collect and dispose of lead paint properly as toxic material.
 - Remove existing roofing to roof sheathing, remove damaged sheathing.
 - Remove non-historic column bracing at porch canopy end.
 - Remove interior wall framing and finish (?)
2. Excavation and Foundation / Floor Structure:
 - Excavate and construct new / modify existing concrete foundation / footings.
3. Roof Structure and Roofing:
 - Improve roof framing connections to one another and wall top plate (framing clips / straps.)
 - Replace damage rafters and joists.
 - Replace deteriorated sheathing boards
 - Install new roofing (assume Comp. Shingles - actual material needs further discussion.)
 - Add insulation to increase to total R value of 30+.

4. Exterior Frame and Siding Repair:

- Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors and outlookers.

- Prime, caulk and paint exterior.

5. Windows:

- Replace broken and cracked panes of glass.

6. Doors:

- New weather-stripping. New (1/2 inch max. high) threshold. New accessible hardware.

7. Interior Finishes:

8. Mechanical:

- New Heating and A/C system (?)

9. Electrical:

- New electrical system.

Bldg 125

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
	Building 125				
	Exterior Demolition				
	Remove Corrigated Galvanized Roofing	560	sf	\$ 0.51	\$ 287
	Remove Shingle Roofing (Asbestos ?)	560	sf	\$ 0.35	\$ 193
	Remove Eave Sheathing	239	sf	\$ 0.49	\$ 117
	Remove Exterior Doors	1	ea	\$ 14.70	\$ 15
	Remove Door Framing	1	ea	\$ 18.80	\$ 19
	Remove and Salvage Clap Board Siding (Lead Base Paint?)	690	sf	\$ 0.62	\$ 427
	Remove Concrete Footer	204	sf	\$ 9.82	\$ 2,003
	Remove Sill	0.077	mbf	\$ 916.30	\$ 71
	Remove Concrete Footer for Canopy	25	sf	\$ 9.82	\$ 245
	Remove Existing Columns	2	ea	\$ 178.50	\$ 357
	Remove Misc Beams/Braces	1	lot	\$ 178.50	\$ 179
	Remove 20% of Framing	0.05	mbf	\$ 916.30	\$ 46
	Remove and Salvage Windows	7	ea	\$ 49.98	\$ 350
	Remove Window Trim	90	lf	\$ 0.67	\$ 60
	Subtotal Exterior Demolition				\$ 4,367
	Lead Base Paint Removal				
	Chemical Strip paint to 12" Wide	690	lf	\$ 11.79	\$ 8,137
	Collect and Bag Residue	5	bags	\$ 7.97	\$ 40
	Subtotal Lead Base Paint				\$ 8,177
	HVAC Demolition				
	Remove Electric Resistance Wall Heaters	2	ea	\$ 29.75	\$ 60
	Subtotal HVAC Demolition				\$ 60
	Interior Walls, Ceiling & Floor Demolition				
	Remove & Salvage Jail Cell Wall	1	lot	\$ 595.00	\$ 595
	Remove Sheet Rock (20%of Walls/Ceiling)	150	sf	\$ 0.24	\$ 36
	Remove Baseboard (Lead Base Paint?)	58	lf	\$ 0.39	\$ 23
	Remove Concrete Floor	204	sf	\$ 6.53	\$ 1,333
	Subtotal Interior Walls, Ceiling & Floor				\$ 1,986
	Exterior Regrading				
	Regrade Exterior of Building for Drainage	1	lot	\$ 1,000.00	\$ 1,000
	Subtotal Regrading				\$ 1,000
	Exterior Building Refinish				
	Jack Building to Replumb/Resquare Building	1	lot	\$ 3,500.00	\$ 3,500
	Excavate For Footers by Hand	77	cy	\$ 77.35	\$ 5,956
	Forms	60	afca	\$ 3.20	\$ 192
	Rebar	0.199	ton	\$ 1,279.25	\$ 255
	Concrete	3	cy	\$ 84.49	\$ 253
	Wall Forms for Stem Wall	348	sf	\$ 4.86	\$ 1,690
	Rebar	0.079	ton	\$ 1,279.25	\$ 101

Bldg 125

Concrete	4	cy	\$	84.49	\$	338
Excavate For Footers by Hand for Canopy	6	cy	\$	77.35	\$	464
Forms	30	sfca	\$	3.20	\$	96
Rebar	0.0516	ton	\$	1,279.25	\$	66
Concrete	2	cy	\$	84.49	\$	169
Wall Forms for Stem Wall	80	sf	\$	4.86	\$	388
Rebar	0.053	ton	\$	1,279.25	\$	68
Concrete	2	cy	\$	84.49	\$	169
6" Dia Columns	36	vlf	\$	100.02	\$	3,601
6"x6" Beams	0.06	mbf	\$	3,480.75	\$	209
1x12 Eave Sheathing	0.628	mbf	\$	3,599.75	\$	2,261
Rafter Anchors	54	ea	\$	2.58	\$	139
Ceiling Joist Anchors	54	ea	\$	2.37	\$	128
Spike Grids	54	ea	\$	2.95	\$	159
#30 Roof Felt	6	sq	\$	23.10	\$	139
Asphalt Shingle Roof	6	sq	\$	87.47	\$	525
Drip Flashing	150	lf	\$	2.23	\$	334
Ridge Vent	17	lf	\$	4.11	\$	70
Flashing Around Vents, Chimneys, Etc.	8	sf	\$	6.72	\$	54
R30 Roof Insulation	204	sf	\$	0.94	\$	192
New Structural Framing (20%)	0.075	mbf	\$	1,475.60	\$	111
R11 Wall Insulation	478	sf	\$	0.46	\$	222
New Wall Framing	0.075	mbf	\$	1,761.20	\$	132
Treated 2x4 Sill	0.077	mbf	\$	2,237.20	\$	172
Reinstall Clapboard Siding	240	sf	\$	1.00	\$	240
New Clapboard Siding	240	sf	\$	5.12	\$	1,228
3/8" OSB Sheathing	480	sf	\$	0.77	\$	371
#30 felt on Walls	5	csf	\$	23.10	\$	115
Flashing for Windows	50	lf	\$	6.72	\$	336
Window Trim	84	lf	\$	46.77	\$	3,928
Door Trim	38	lf	\$	83.30	\$	3,165
Door Frame 3-0x6-8	1	ea	\$	154.70	\$	155
Full Exterior Door	1	ea	\$	703.00	\$	703
2-6x3-6 Window Repair/Replace	7	ea	\$	311.14	\$	2,178
Paint Exterior	680	sf	\$	0.56	\$	380
Paint Window/Trim	120	lf	\$	0.44	\$	53
ADA Ramp	40	sf	\$	29.75	\$	1,190
Subtotal Exterior Building Refinish						\$ 36,195
Interior Refinish						
Replace Gypboard (20%)	900	sf	\$	0.92	\$	825
New Concrete Slab	204	sf	\$	2.18	\$	444
Upgrade Lighting	1	lot	\$	1,785.00	\$	1,785
Upgrade Wall Resistance Heat Units	2	ea	\$	202.90	\$	406
Reinstall Jail Cell Wall	1	ea	\$	1,500.00	\$	1,500
Paint Floor	204	sf	\$	3.57	\$	728
Wood Baseboards	415	lf	\$	3.32	\$	1,378
Paint Walls,Ceiling	700	sf	\$	0.44	\$	308
Subtotal Interior Refinish						\$ 7,374

Uniformat Summary

		Bldg 125		Percent
	Demolition		\$ 14,589	11.9%
	Exterior Demolition	\$ 4,367		
	Lead Base Paint Removal	\$ 8,177		
	HVAC Demolition	\$ 60		
	Interior Walls, Ceiling & Floor Demolition	\$ 1,986		
	Building Remodel		\$ 44,569	36.3%
	Exterior Regrading	\$ 1,000		
	Exterior Building Refinish	\$ 36,195		
	Interior Refinish	\$ 7,374		
	Subtotal Direct Construction Costs		\$ 59,158	48.2%
	Location Factor (42%)		\$ 24,847	20.3%
	Design Contingency (20%)		\$ 11,832	9.6%
	Total Direct Construction Cost		\$ 95,837	78.1%
	General Conditions (8%)		\$ 7,667	6.3%
	Overhead and Profit (20%)		\$ 19,167	15.6%
	Total NET Construction Cost		\$ 122,671	100.0%

Fire House - Building # 126

Year Built 1934

Recommended Use

Convert to winter vehicle storage.

Summary of Recommended Stabilization

Roofing: Needs removal and replacement. Areas sheathing at eaves need replacement.

Wall siding: Areas need of repair/replacement-in-kind.

Walls and sill plate: Areas in need of replacement.

Exterior windows and doors: Need repair/replacement.

Floor slab: Needs removal and replacement.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Electrical: System needs replacement.

Finishes: Re-painting as required by required repairs.

Addition at rear: Remove addition that is poorly constructed and incompatible with original building.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure (raised rear storage area not original)
- Steel windows
- Wood bi-fold garage doors with ornamental wrought iron hardware
- Exposed rafter tails, barge rafter, and outlookers

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Fair condition. The corrugated metal roofing is performing adequately - some repair / maintenance necessary.

2. Roof Structure and Trim: Fair condition - the roof structure is performing adequately. Interior and exposed 2x6 members are in fair condition. Exposed rafter tails, barge boards and trim are in fair condition - some rafter tails are deteriorated and need of repair / replacement. Exposed 1x sheathing boards are fair some replacement required.
3. Wall Frame: Fair condition - performing adequately – some repair / replacement required.
4. Corrugated Metal Siding: Fair to poor condition and some areas in need of repair / replacement-in-kind.
5. Foundation / Floor Structure: Concrete foundation / floor slab – Fair to Poor condition with slab areas cracked. (Stone masonry veneer at stemwalls.)
6. Windows: Poor condition – repair / rehab of frames required.
7. Doors: exterior doors poor condition – need repair / replacement-in-kind.
8. Interior Finishes: painted plywood and gypsum board (fair), and simple 1x wood trim (fair.) Concrete slab floor (poor) is cracked.
9. Building Systems: Fair to poor condition. Electrical system should be replaced. Electrical heaters appear in fair condition.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove corrugated metal roofing and siding.
 - Remove poorly constructed and incompatible addition (?)
 - Remove concrete slab floor.
 - Remove electrical.
 - Remove interior finishes.
2. Excavation and Foundation / Floor Structure:
 - Construct new / concrete slab floor.
3. Roof Structure and Roofing:
 - Improve roof framing connections to one another and wall top plate (framing clips / straps.)
 - Replace damage rafters and joists.
 - Install new OSB roof sheathing
 - Install new corrugated metal roofing.
 - Install R-30 insulation.
4. Exterior Frame and Siding Repair:
 - Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors and outlookers.

- Prime, caulk and paint exterior.
5. Windows:
 - Disassemble and repair steel frames and regale glass.
 6. Doors:
 - Rebuild wood garage doors. Repair / replace ornamental hardware in kind.
 7. Interior Finishes:
 - New gypsum wall board and paint.
 8. Mechanical:
 - New HVAC (? Depending upon change in use for building.)
 9. Electrical:
 - New electrical system.

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 126					
Exterior Demolition					
	Remove Corrugated Galvanized Roofing	1550	sf	\$ 0.51	\$ 793
	Remove Corrugated Siding	1075	sf	\$ 0.51	\$ 550
	Demolish Shed Addition	280	cf	\$ 4.17	\$ 1,166
	Remove Bifold Doors	4	ea	\$ 297.50	\$ 1,190
	Remove Door Framing	1	ea	\$ 18.80	\$ 19
	Remove Bifold Door Frames	2	ea	\$ 178.50	\$ 357
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove Sill	0.124	mbf	\$ 916.30	\$ 114
	Remove 20% of Framing	0.122	mbf	\$ 916.30	\$ 112
	Remove and Salvage Windows	8	ea	\$ 49.98	\$ 400
	Remove Window Trim	175	lf	\$ 0.67	\$ 117
	Subtotal Exterior Demolition				\$ 5,115
Interior Walls, Ceiling & Floor Demolition					
	Remove Electrical	1137	sf	\$ 2.30	\$ 2,611
	Remove Concrete Floor	1137	sf	\$ 7.74	\$ 8,795
	Remove Plywood Walls/Ceiling	6177	sf	\$ 0.24	\$ 1,470
	Subtotal Interior Walls, Ceiling & Floor				\$ 12,876
Exterior Building Refinish					
	Repoint Exterior Foundation Walls	50	cf	\$ 5.70	\$ 285
	1x8 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Rafter Anchors	50	ea	\$ 2.58	\$ 129
	Ceiling Joist Anchors	50	ea	\$ 2.37	\$ 118
	Spike Grids	100	ea	\$ 2.95	\$ 295
	Corrugated Steel Roofing	1200	sf	\$ 2.64	\$ 3,170
	Ridge Vent	33	lf	\$ 4.11	\$ 135
	R30 Roof Insulation	1200	sf	\$ 0.94	\$ 1,128
	New Structural Framing (20%)	0.122	mbf	\$ 1,475.60	\$ 180
	R11 Wall Insulation	900	sf	\$ 0.46	\$ 418
	New Wall Framing	0.122	mbf	\$ 1,761.20	\$ 215
	Treated 2x6 Sill	0.124	mbf	\$ 2,237.20	\$ 277
	New Corrugated Siding	960	sf	\$ 2.64	\$ 2,536
	3/8" OSB Sheathing	960	sf	\$ 0.77	\$ 743
	#30 felt on Walls	10	csf	\$ 23.10	\$ 231
	Flashing for Windows	200	lf	\$ 6.72	\$ 1,345
	Window Trim	150	lf	\$ 46.77	\$ 7,015
	Door Trim	50	lf	\$ 83.30	\$ 4,165
	New Bifold Door Custom Build	2	sets	\$ 1,785.00	\$ 3,570
	New Bifold Door Frames	2	ea	\$ 892.50	\$ 1,785
	3-2x4-8 Window Repair	6	ea	\$ 311.14	\$ 1,867
	Paint Exterior	1080	sf	\$ 0.56	\$ 604
	Paint Window/Trim	150	lf	\$ 0.44	\$ 66
	New Electric Power Service	1	lot	\$ 4,165.00	\$ 4,165
	Subtotal Exterior Building Refinish				\$ 36,703

Bldg 126

	Interior Refinish					
	New Concrete Floor w/Rebar & Finish	1137	sf	\$	2.39	\$ 2,720
	New Gypboard Walls and Ceiling	6177	sf	\$	0.92	\$ 5,660
	Wood Baseboards	190	lf	\$	3.32	\$ 631
	Paint Walls,Ceiling	1900	sf	\$	0.44	\$ 837
	Rehab Building Electrical	1000	sf	\$	9.16	\$ 9,163
	Subtotal Interior Refinish					\$ 19,010

Uniformat Summary

		Bldg 126		Percent
Demolition			\$ 17,991	11.8%
	Exterior Demolition	\$ 5,115		
	Interior Walls, Ceiling & Floor Demolition	\$ 12,876		
Building Remodel			\$ 55,713	36.5%
	Exterior Building Refinish	\$ 36,703		
	Interior Refinish	\$ 19,010		
Subtotal Direct Construction Costs			\$ 73,704	48.2%
	Location Factor (42%)		\$ 30,956	20.3%
	Design Contingency (20%)		\$ 14,741	9.6%
Total Direct Construction Cost			\$ 119,401	78.1%
	General Conditions (8%)		\$ 9,552	6.3%
	Overhead and Profit (20%)		\$ 23,880	15.6%
Total NET Construction Cost			\$ 152,833	100.0%

Roads and Trails - Building # 127

Year Built Unknown (moved to site in 1951-year additions built unknown)

Recommended Use

Retain use as R&T shop and storage. (Not suitable for conversion to a vehicle repair facility due to lack of minimum door opening area and lack of minimum required ceiling height).

Summary Of Recommended Stabilization

Roofing: Needs removal and replacement. Areas of exposed rafter tails, barge boards, trim and sheathing at eaves need replacement.

Walls and sill plate: Areas in need of replacement.

Wall siding: Areas need of repair/replacement-in-kind.

Exterior windows and doors: Need repair/replacement.

Floor slab: Needs removal and replacement.

Electrical: System needs replacement.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Finishes: Re-painting as required by required repairs.

Additions at sides: Remove additions that are poorly constructed and incompatible with original building (?)

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible (though the building has been deemed by the National Registry Inventory – Nomination Form to have no historic or architectural significance):

Exterior

- Basic form and materials of the structure? (lean-to's at north and south sides not original)
- Wood windows
- Wood bi-fold garage doors
- Exposed rafter tails, barge rafters and outlookers

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Poor condition. The corrugated metal roofing is not performing adequately - evidence of water intrusion, is deteriorating and in need of removal and replacement soon.
2. Roof Structure and Trim: Fair condition - the roof structure is performing adequately. Interior and exposed members are in fair condition. Exposed rafter tails, barge boards and trim are in fair condition - some rafter tails are deteriorated and need of repair / replacement. Cellotex sheathing are poor and need replacement.
3. Wall Frame: Fair condition - performing adequately – some repair / replacement required.
4. Wood Siding: Fair to poor condition and in need of repair / replacement.
5. Foundation / Floor Structure: Concrete foundation / floor slab – Fair to Poor condition with slab areas cracked.
6. Windows: Fair condition – some repair / rehab of frames and sash required.
7. Doors: Poor condition – need repair / replacement-in-kind.
8. Interior Finishes: painted wood siding, plywood and cellotex (fair), and simple 1x wood trim (fair.) Concrete slab floor (poor) is cracked.
9. Building Systems: Poor condition. Electrical system needs replacement. Propane heaters in unknown condition.
10. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove corrugated metal roofing.
 - Remove loose and scaling exterior paint; collect and dispose of lead paint properly as toxic material.
 - Remove incompatible additions (?)
 - Remove concrete slab floor.
 - Remove electrical.
 - Remove interior finishes.
2. Excavation and Foundation / Floor Structure:
 - Construct new / concrete slab floor.

3. Roof Structure and Roofing:

- Improve roof framing connections to one another and wall top plate (framing clips / straps.)
- Install new OSB roof sheathing
- Install new corrugated metal roofing.
- Install R-30 insulation.

4. Exterior Frame and Siding Repair:

- Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %.). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors and outlookers.

- Prime, caulk and paint exterior.
- Remove all siding.
- Remove and replace-in-kind deteriorated framing elements (assume 20 %.)
- Remove and replace sill with treated material.
- Make efforts to re-plumb / re-square building.
- Install wall insulation (R-13.).
- Install 3/8" OSB sheathing and building paper over stud walls.
- Install wood siding to match original.
- Prime, caulk and paint exterior.

5. Windows:

- Repair wood frames and sash.

6. Doors:

- Rebuild wood garage doors. Repair / replace hardware in kind. Repair / rebuild / replace other exterior doors. New weather-stripping. Rebuild / replace hardware.

7. Interior Finishes:

- New gypsum wall board and paint.

8. Mechanical:

- New HVAC (? Depending upon change in use for building.)

9. Electrical:

- New electrical system.

Bldg 127

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 127					
Exterior Demolition					
	Remove Corrigated Galvanized Roofing	2000	sf	\$ 0.51	\$ 1,023
	Remove Eave Sheathing	700	sf	\$ 0.49	\$ 342
	Remove Exterior Doors	2	ea	\$ 14.70	\$ 29
	Remove Bifold Doors	4	ea	\$ 297.50	\$ 1,190
	Remove Door Framing	2	ea	\$ 18.80	\$ 38
	Remove Bifold Door Frames	2	ea	\$ 178.50	\$ 357
	Demolish Shed Additions	300	cf	\$ 4.17	\$ 1,250
	Remove Bifold Door Frames	2	ea	\$ 178.50	\$ 357
	Remove Gas Service Regulator	1	lot	\$ 178.50	\$ 179
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove and Salvage T&G Lap Siding (Lead Base Paint?)	483	sf	\$ 0.62	\$ 299
	Remove Sill	0.09	mbf	\$ 916.30	\$ 82
	Remove 20% of Framing	0.075	mbf	\$ 916.30	\$ 69
	Remove and Salvage Windows	12	ea	\$ 49.98	\$ 600
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
	Subtotal Exterior Demolition				\$ 6,211
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	800	lf	\$ 11.79	\$ 9,434
	Collect and Bag Residue	8	bags	\$ 7.97	\$ 64
	Subtotal Lead Base Paint				\$ 9,498
HVAC Demolition					
	Remove Ducting	15	lf	\$ 3.13	\$ 47
	Salvage Forced Air Furnace	1	ea	\$ 211.82	\$ 212
	Subtotal HVAC Demolition				\$ 259
Interior Walls, Ceiling & Floor Demolition					
	Remove Concrete Floor	1636	sf	\$ 7.74	\$ 12,654
	Remove Electrical	2000	sf	\$ 2.30	\$ 4,593
	Remove Walls/Ceiling Finish	2000	sf	\$ 0.24	\$ 476
	Subtotal Interior Walls, Ceiling & Floor				\$ 17,724
Exterior Regrading					
	Regrade Exterior of Building for Drainage	1	lot	\$ 1,000.00	\$ 1,000
	Subtotal Regrading				\$ 1,000
Exterior Building Refinish					
	Jack Building to Replumb/Resquare Building	1	lot	\$ 2,000.00	\$ 2,000
	1x12 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Rafter Anchors	34	ea	\$ 2.58	\$ 88
	Ceiling Joist Anchors	34	ea	\$ 2.37	\$ 81
	Spike Grids	102	ea	\$ 2.95	\$ 301
	#30 Roof Felt	12	sq	\$ 23.10	\$ 277

Bldg 127

Asphalt Shingle Roof	12	sq	\$	87.47	\$	1,050
Drip Flashing	130	lf	\$	2.23	\$	289
Ridge Vent	32	lf	\$	4.11	\$	131
R30 Roof Insulation	1200	sf	\$	0.94	\$	1,128
New Structural Framing (20%)	0.075	mbf	\$	1,475.60	\$	111
R11 Wall Insulation	1500	sf	\$	0.46	\$	696
New Wall Framing	0.075	mbf	\$	1,761.20	\$	132
Treated Sill	0.12	mbf	\$	2,237.20	\$	268
Reinstall T&G Siding	750	sf	\$	1.33	\$	1,000
New T&G Siding	750	sf	\$	6.82	\$	5,114
3/8" OSB Sheathing	1500	sf	\$	0.77	\$	1,160
#30 felt on Walls	15	csf	\$	23.10	\$	346
New 2x4 Trim Separating Siding	0.09	mbf	\$	1,761.20	\$	159
Flashing for Windows & Doors	200	lf	\$	6.72	\$	1,345
Window Trim	150	lf	\$	46.77	\$	7,015
Door Trim	51	lf	\$	83.30	\$	4,248
Door Frame 3-0x6-8	2	ea	\$	154.70	\$	309
Full Exterior Door	1	ea	\$	703.00	\$	703
Window Repair/Replace	12	ea	\$	311.14	\$	3,734
Paint Exterior	1500	sf	\$	0.56	\$	839
Paint Window/Trim	150	lf	\$	0.44	\$	66
Subtotal Exterior Building Refinish						\$ 34,851
Interior Refinish						
Gypboard	3400	sf	\$	0.92	\$	3,115
Paint Walls,Ceiling	3400	sf	\$	0.44	\$	1,497
New Concrete Floor w/Rebar & Finish	992	sf	\$	2.39	\$	2,373
Reinstall Heater & Ducting	1	ea	\$	297.50	\$	298
New Electrical	1400	sf	\$	5.65	\$	7,914
Reinstall Gas Regulator	1	ea	\$	119.00	\$	119
Subtotal Interior Refinish						\$ 15,315

Uniformat Summary

		Bldg 127		Percent
	Demolition		\$ 33,692	19.1%
	Exterior Demolition	\$ 6,211		
	Lead Base Paint Removal	\$ 9,498		
	HVAC Demolition	\$ 259		
	Interior Walls, Ceiling & Floor Demolition	\$ 17,724		
	Building Remodel		\$ 51,166	29.1%
	Exterior Regrading	\$ 1,000		
	Exterior Building Refinish	\$ 34,851		
	Interior Refinish	\$ 15,315		
	Subtotal Direct Construction Costs		\$ 84,858	48.2%
	Location Factor (42%)		\$ 35,640	20.3%
	Design Contingency (20%)		\$ 16,972	9.6%
	Total Direct Construction Cost		\$ 137,470	78.1%
	General Conditions (8%)		\$ 10,998	6.3%
	Overhead and Profit (20%)		\$ 27,494	15.6%
	Total NET Construction Cost		\$ 175,962	100.0%

Log Restroom - Building # 134

Year Built 1929

Recommended Use

1. Retain use as storage space or
2. Convert to interpretive display space.

Summary of Recommended Stabilization

Roofing: Needs removal and replacement. Areas of exposed rafter tails, barge boards, trim and sheathing at eaves need replacement.

Walls and sill plate: Areas in need of replacement.

Wall siding: Areas need of repair/replacement-in-kind.

Exterior windows and doors: Need repair/replacement.

Floor slab: Needs removal and replacement.

Building Systems: Electrical, plumbing and mechanical need replacement.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Finishes: Re-painting as required by required repairs.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure
- Wood windows
- Wood Doors
- Exposed log siding, rafter tails and barge rafters

Existing Conditions

The building is in overall poor condition. It has not been occupied nor maintained properly over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Poor condition. The non-historic corrugated metal roofing (and wood shingle roofing that lies below this) is deteriorating and in need of removal and replacement soon (with a wood shingle roof)

2. Roof Structure and Trim: Poor condition - the roof structure is not performing adequately. Interior and exposed members are in poor condition. Exposed rafter tails, barge boards and trim are in poor condition - rafter tails are deteriorated and need of repair / replacement and sheathing in need replacement.
3. Wall Frame: Fair condition –repair / replacement required.
4. Foundation / Floor Structure: Poor condition. Concrete foundation / floor slab deteriorated and in need of repair / replacement. No slab at interior utility chase.
5. Windows: Poor condition – repair / rehab of frames and sash required.
6. Doors: Poor condition – need repair / replacement-in-kind.
7. Interior Finishes: Paint on exterior walls (poor).
8. Building Systems: Poor condition. Electrical, plumbing, and mechanical systems not performing adequately and need replacement.
9. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove corrugated metal roofing.
 - Remove loose and scaling paint; collect and dispose of lead paint properly as toxic material.
 - Remove building systems.
2. Excavation and Foundation: Replace deteriorated slabs. No slab at interior utility chase.
3. Roof Structure and Roofing:
 - Repair / replace log elements in kind.
 - Install new wood shingle roofing.
4. Exterior Frame and Siding Repair:
 - Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of

- exposed wood elements where water can stand (e.g. over windows/doors and outlookers.
- Prime, caulk and paint exterior.
5. Windows:
 - Repair wood frames and sash.
 6. Doors:
 - Replace exterior doors/frames with new to match construction of existing doors. New (1/2 inch max. high) thresholds. New weather-stripping. New accessible hardware. Repair / replace hardware in kind.
 7. Interior Finishes:
 - Prime, caulk and paint.
 8. Mechanical:
 - New HVAC (Depending upon change in use for building.)
 - New plumbing system required (Depending upon change in use for building.)
 9. Electrical:
 - New electrical system.

Bldg 134

DSC-22 (6/97)					
Denver Service Center - Estimate			Estimate By: B Heinley		
Project:	Eleven Building Condition Assessment-North Rim		Date: 27-Jun-03		
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022		Reviewed By:		
			Date:		
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 134					
Exterior Demolition					
	Remove Corrigated Galvanized Roofing	480	sf	\$ 0.51	\$ 246
	Remove Shake Shingle Roofing	480	sf	\$ 0.35	\$ 166
	Remove Roof Sheathing	480	sf	\$ 0.49	\$ 234
	Remove Rafter Log Tails	20	ea	\$ 23.80	\$ 476
	Remove Concrete Floor	480	sf	\$ 7.74	\$ 3,713
	Remove Ridge Pole and Top Plate Log Tails	6	ea	\$ 23.80	\$ 143
	Remove Existing Chinking	720	lf	\$ 1.19	\$ 857
	Remove Rotted Log Material	1	lot	\$ 595.00	\$ 595
	Remove Exterior Doors	3	ea	\$ 14.70	\$ 44
	Remove Door Framing	3	ea	\$ 18.80	\$ 56
	Remove Gas Service Regulator	1	lot	\$ 178.50	\$ 179
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove Water Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove Sill	0.09	mbf	\$ 916.30	\$ 82
	Remove Interior Partitions	45	lf	\$ 11.14	\$ 501
	Remove and Salvage Windows	4	ea	\$ 49.98	\$ 200
	Remove Louvered Openings	12	ea	\$ 49.98	\$ 600
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
Subtotal Exterior Demolition					\$ 8,786
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	1500	lf	\$ 11.79	\$ 17,689
	Collect and Bag Residue	15	bags	\$ 7.97	\$ 120
Subtotal Lead Base Paint					\$ 17,809
Interior Walls, Ceiling & Floor Demolition					
	Remove Interior Partitions	45	lf	\$ 11.14	\$ 501
	Remove Electrical	324	sf	\$ 2.30	\$ 744
Subtotal Interior Walls, Ceiling & Floor					\$ 1,245
Exterior Regrading					
	Regrade Exterior of Building for Drainage	1	lot	\$ 1,000.00	\$ 1,000
Subtotal Regrading					\$ 1,000
Exterior Building Refinish					
	Rechink Log Walls	720	lf	\$ 3.62	\$ 2,605
	1x12 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Rafter Tails	40	lf	\$ 64.90	\$ 2,596
	Misc Log Partial Replacement	40	lf	\$ 64.90	\$ 2,596
	#30 Roof Felt	5	sq	\$ 23.10	\$ 115
	Shake Shingles	5	sq	\$ 87.47	\$ 437
	Drip Flashing	72	lf	\$ 2.23	\$ 160
	Ridge Vent	24	lf	\$ 4.11	\$ 99
	R30 Roof Insulation	480	sf	\$ 0.94	\$ 451
	New Structural Framing (20%)	0.075	mbf	\$ 1,475.60	\$ 111

Bldg 134

Window Trim	150	lf	\$ 46.77	\$ 7,015
Door Trim	51	lf	\$ 83.30	\$ 4,248
Door Frame 3-0x6-8	3	ea	\$ 154.70	\$ 464
Full Exterior Door	3	ea	\$ 703.00	\$ 2,109
Repair/Replace Louvered Openings	12	ea	\$ 250.00	\$ 3,000
Window Repair/Replace	4	ea	\$ 311.14	\$ 1,245
Paint Exterior	600	sf	\$ 0.56	\$ 336
Paint Window/Trim	150	lf	\$ 0.44	\$ 66
ADA Ramp	40	sf	\$ 29.75	\$ 1,190
Handrails for Steps and Porch	1	lot	\$ 2,288.00	\$ 2,288
Subtotal Exterior Building Refinish				\$ 33,391
Interior Refinish				
New Partition	360	sf	\$ 3.03	\$ 1,092
New Concrete Floor w/Rebar & Finish	480	sf	\$ 2.39	\$ 1,148
Paint Walls	1056	sf	\$ 0.44	\$ 465
Accessible Hardware	3	set	\$ 208.25	\$ 625
Dryer Venting	4	set	\$ 44.03	\$ 176
Water Heater Venting	1	set	\$ 290.36	\$ 290
Water Heater Hookup	1	set	\$ 51.17	\$ 51
Water Heater	1	ea	\$ 535.50	\$ 536
Sewer Piping	80	lf	\$ 45.28	\$ 3,622
Vent Pipe	100	lf	\$ 20.83	\$ 2,083
Domestic Water Piping	100	lf	\$ 7.43	\$ 743
Water Pipe Insulation	100	lf	\$ 3.30	\$ 330
Gas Piping	50	lf	\$ 6.78	\$ 339
Rehab Building Electrical	480	sf	\$ 4.76	\$ 2,285
ADA Ramp	80	sf	\$ 29.75	\$ 2,380
Reinstall Gas Regulator	1	ea	\$ 119.00	\$ 119
Subtotal Interior Refinish				\$ 16,283

Fire Cache - Building # 171

Year Built 1936

Recommended Use

Convert to maintenance office, meeting and storage space (to replace R&T space lost with removal of addition on Bldg. #127)

Summary of Recommended Stabilization

Roofing: Needs removal and replacement. Areas of exposed rafter tails, barge boards, trim and sheathing at eaves need replacement.

Walls and sill plate: Areas in need of replacement.

Wall siding: Areas need of repair/replacement-in-kind.

Exterior garage doors: Need repair/replacement.

Electrical: System needs replacement.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Finishes: Re-painting as required by required repairs.

Building Evaluation

The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure
- Wood windows
- Wood bi-fold garage doors with ornamental wrought iron hardware
- Exposed rafter tails and barge rafters

Existing Conditions

The building is in overall fair condition. It has been occupied (seasonally) and basically maintained over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Poor condition. The corrugated metal roofing is not performing adequately - evidence of water intrusion, is deteriorating and in need of removal and replacement soon.
2. Roof Structure and Trim: Fair condition - the roof structure is performing adequately. Interior and exposed members are in fair condition. Exposed rafter tails, barge boards and trim are

in fair condition - some rafter tails are deteriorated and need of repair / replacement. Some sheathing in need replacement.

3. Wall Frame: Fair to poor condition - performing adequately – some repair / replacement required.
4. Wood Siding: Fair to poor condition and in need of repair / replacement.
5. Foundation / Floor Structure: Fair condition concrete foundation / floor slab (stone masonry veneer at stemwalls.)
6. Windows: Fair condition – some repair / rehab of frames and sash required.
7. Doors: Poor condition – need repair / replacement-in-kind.
8. Interior Finishes: none on exterior walls. Interior partitions are painted plywood (fair.) Concrete slab floor (fair) is cracked.
9. Building Systems: Poor condition. Electrical system needs replacement.
10. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove corrugated metal roofing.
 - Remove loose and scaling exterior paint; collect and dispose of lead paint properly as toxic material.
 - Remove interior partitions and finishes.
 - Remove electrical system wiring and devices.
2. Roof Structure and Roofing:
 - Improve roof framing connections to one another and wall top plate (framing clips / straps.)
 - Install new OSB roof sheathing
 - Install new corrugated metal roofing.
 - Install R-30 insulation.

3. Exterior Frame and Siding Repair:

- Remove and replace damaged siding and trim. Suggest remove all trim and siding.

If 100% of Siding removed: Remove and replace sill with treated material. Remove and replace-in-kind deteriorated framing elements (assume 20 %). Make efforts to re-plumb / re-square building. Install wall insulation (R-13.) Install 3/8" OSB sheathing and building paper over stud walls. Reinstall existing siding boards or replace-in-kind (deteriorated) siding boards (assume 50 % of the board & batten siding.) Add sheet metal flashing during siding/trim installation to protect tops of exposed wood elements where water can stand (e.g. over windows/doors and outlookers.

- Prime, caulk and paint exterior.

4. Windows:

- Repair wood frames and sash.

5. Doors:

- Rebuild wood garage doors. Repair / replace hardware in kind.

6. Interior Finishes:

- New partitions as required, install gypsum wall board and paint.

7. Mechanical:

- New HVAC (? Depending upon change in use for building.)

8. Electrical:

- New electrical system.

Bldg 171

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 171					
Exterior Demolition					
	Remove Corrigated Galvanized Roofing	1320	sf	\$ 0.51	\$ 675
	Remove Eave Sheathing	600	sf	\$ 0.49	\$ 293
	Remove Concrete Floor	1034	sf	\$ 7.74	\$ 7,998
	Remove Bifold Doors	8	ea	\$ 297.50	\$ 2,380
	Remove Bifold Door Frames	4	ea	\$ 178.50	\$ 714
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove and Salvage Board and Batten Siding (Lead Base Paint?)	1380	sf	\$ 0.58	\$ 805
	Remove Sill	0.138	mbf	\$ 916.30	\$ 126
	Remove 20% of Framing	0.13	mbf	\$ 916.30	\$ 119
	Remove and Salvage Windows	14	ea	\$ 49.98	\$ 700
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
	Subtotal Exterior Demolition				\$ 14,208
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	400	lf	\$ 11.79	\$ 4,717
	Collect and Bag Residue	4	bags	\$ 7.97	\$ 32
	Subtotal Lead Base Paint				\$ 4,749
HVAC Demolition					
	Remove Ducting	20	lf	\$ 3.13	\$ 63
	Salvage Wood Burning Stove	1	ea	\$ 211.82	\$ 212
	Subtotal HVAC Demolition				\$ 274
Interior Walls, Ceiling & Floor Demolition					
	Remove Electrical	1034	sf	\$ 2.30	\$ 2,375
	Remove Interior Partitions	45	lf	\$ 11.14	\$ 501
	Subtotal Interior Walls, Ceiling & Floor				\$ 2,876
Exterior Regrading					
	Regrade Exterior of Building for Drainage	1	lot	\$ 1,000.00	\$ 1,000
	Subtotal Regrading				\$ 1,000
Exterior Building Refinish					
	Repoint Exterior Foundation Walls	75	cf	\$ 5.70	\$ 428
	1x12 Eave Sheathing	0.628	mbf	\$ 3,599.75	\$ 2,261
	Rafter Anchors	50	ea	\$ 2.58	\$ 129
	Ceiling Joist Anchors	50	ea	\$ 2.37	\$ 118
	Spike Grids	100	ea	\$ 2.95	\$ 295
	#30 Roof Felt	14	sq	\$ 23.10	\$ 323
	Corrigated Steel Roofing	1320	sf	\$ 2.64	\$ 3,487
	Drip Flashing	56	lf	\$ 2.23	\$ 125
	Ridge Vent	49	lf	\$ 4.11	\$ 201
	Flashing Around Vents, Chimneys, Etc.	20	sf	\$ 6.72	\$ 134
	R30 Roof Insulation	1320	sf	\$ 0.94	\$ 1,241

Bldg 171

New Structural Framing (20%)	0.075	mbf	\$	1,475.60	\$	111
R11 Wall Insulation	1380	sf	\$	0.46	\$	640
New Wall Framing	0.075	mbf	\$	1,761.20	\$	132
Treated 2x4 Sill	0.09	mbf	\$	2,237.20	\$	201
Reinstall Board and Batten Siding	690	sf	\$	1.33	\$	920
New Board and Batten Siding	690	sf	\$	6.82	\$	4,705
3/8" OSB Sheathing	1380	sf	\$	0.77	\$	1,067
#30 felt on Walls	14	csf	\$	23.10	\$	323
Flashing Windows & Doors	200	lf	\$	6.72	\$	1,345
Window Trim	175	lf	\$	46.77	\$	8,184
Door Trim	80	lf	\$	83.30	\$	6,664
New Bifold Door Custom Build	4	sets	\$	1,785.00	\$	7,140
New Bifold Door Frames	2	ea	\$	892.50	\$	1,785
Window Repair/Replace	14	ea	\$	311.14	\$	4,356
Paint Exterior	1380	sf	\$	0.56	\$	772
Paint Window/Trim	200	lf	\$	0.44	\$	88
New Electric Power Service	1	lot	\$	4,165.00	\$	4,165
ADA Ramp	40	sf	\$	29.75	\$	1,190
Subtotal Exterior Building Refinish						\$ 52,531
Interior Refinish						
New Partition	360	sf	\$	3.03	\$	1,092
Rehab Building Electrical	1034	sf	\$	4.76	\$	4,922
New Concrete Floor w/Rebar & Finish	1034	sf	\$	2.39	\$	2,473
HVAC Gas Fired Furnace	1	ea	\$	1,785.00	\$	1,785
HVAC Combustion Air Venting	2	ea	\$	44.03	\$	88
HVAC Ducting	390	lb	\$	4.63	\$	1,805
Insulation	1200	sf	\$	2.25	\$	2,699
6" Insulated Flex Duct	160	lf	\$	5.88	\$	941
Paint Interior Doors	1	ea	\$	65.63	\$	66
Accessable Hardware All Interior Doors	1	set	\$	208.25	\$	208
Subtotal Interior Refinish						\$ 16,079
Option: Upgrade for Use as Office Space:						
Building Upgrade						
HVAC Gas Fired Furnace	1	ea	\$	1,785.00	\$	1,785
HVAC Combustion Air Venting	2	ea	\$	44.03	\$	88
HVAC Ducting	390	lb	\$	4.63	\$	1,805
Insulation	1200	sf	\$	2.25	\$	2,699
6" Insulated Flex Duct	160	lf	\$	5.88	\$	941
Upgrade Electrical	1034	sf	\$	3.57	\$	3,691
						\$ 11,009
Fire Safety Upgrade						
Sprinkler Attic/Main/Crawl Space Dry Pipe	1600	sf	\$	7.08	\$	11,329
Smoke Alarm System	1600	sf	\$	1.79	\$	2,856
Upgrade Water Main	50	lf	\$	33.44	\$	1,672
Subtotal Fire Safety						\$ 15,857

Uniformat Summary

<u>Bldg 171</u>			Percent
Demolition		\$ 22,107	11.6%
Exterior Demolition	\$ 14,208		
Lead Base Paint Removal	\$ 4,749		
HVAC Demolition	\$ 274		
Interior Walls, Ceiling & Floor Demolition	\$ 2,876		
Building Remodel		\$ 69,610	36.6%
Exterior Regrading	\$ 1,000		
Exterior Building Refinish	\$ 52,531		
Interior Refinish	\$ 16,079		
Subtotal Direct Construction Costs		\$ 91,718	48.2%
Location Factor (42%)		\$ 38,521	20.3%
Design Contingency (20%)		\$ 18,344	9.6%
Total Direct Construction Cost		\$ 148,582	78.1%
General Conditions (8%)		\$ 11,887	6.3%
Overhead and Profit (20%)		\$ 29,716	15.6%
Total NET Construction Cost		\$ 190,186	100.0%
<u>Bldg 171 Upgrade to Office Space</u>			Percent
Note: No Interior Partitions, Water or Waste Services included.			
Building Upgrade		\$ 26,866	48.2%
Building Upgrade	\$ 11,009		
Fire Safety Upgrade	\$ 15,857		
Subtotal Direct Construction Costs		\$ 26,866	48.2%
Location Factor (42%)		\$ 11,284	20.3%
Design Contingency (20%)		\$ 5,373	9.6%
Total Direct Construction Cost		\$ 43,523	78.1%
General Conditions (8%)		\$ 3,482	6.3%
Overhead and Profit (20%)		\$ 8,705	15.6%
Total NET Construction Cost		\$ 55,709	100.0%

NPS Auto Shop - Building # 963

Year Built 1949

Recommended Use

Retain use as vehicle repair facility.

Summary Of Recommended Stabilization

Drainage: Re-grade soil around building to drain water away from building foundation.

Roofing: Needs removal and replacement. Fascia, barge boards and trim need replacement.

CMU Walls: Areas in need of repair/replacement/re-pointing.

Exterior concrete apron slab: Needs replacement.

Exterior garage doors and steel windows: Need repair/replacement.

Restroom: Needs to be re-built per ADA.

Water service: Old and needs replacement.

Electrical: Old portions of system need replacement.

Hazmat: Asbestos shingles at gable ends and lead-based paint is suspected, testing and potential mitigation required.

Finishes: Re-painting as required by required repairs.

Building Evaluation

Building does not fit in with the rustic building construction context of the area. The following is the list and discussion of architectural features to be retained if possible (if building considered significant):

Exterior

- Overall form and materials of the structure

Existing Conditions

The building is in overall fair condition. It has been occupied and but not maintained properly over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Fair condition. The corrugated metal roofing is deteriorating and in need of removal and replacement soon.

2. Roof Structure and Trim: Good condition - the roof structure is performing adequately. Interior members are in good condition. Exposed trim is in poor condition – Fascia / barge is deteriorated and need of repair / replacement.
3. CMU Walls: Fair to Poor condition – re-pointing / repair / replacement required. Need to seal through wall penetrations. Need to seal walls with waterproof coatings of some type / paint.
4. Wood Wall Frame: Fair condition.
5. Wall Siding: Fair condition. Asbestos (?) shingle siding on gable ends appears to be intact – in need of re-paint.
6. Foundation / Floor Structure: Good to Fair condition. Concrete foundation / floor slab performing adequately. Concrete slab apron at building front (1600-2000 SF) is cracking and settling and in need of repair / replacement.
7. Steel Windows: Poor condition – repair / rehab of frames and sash required. Replacement of glass and re-glazing of all units required.
8. Doors: Poor condition – repair / reconstruction of sliding doors and track system / required.
9. Interior Finishes: Paint on exterior CMU walls (poor) needs new paint. Interior partition walls and ceiling finishes are painted gypsum board (poor) needs new paint and simple 1x wood trim (poor) needs new paint. Floor is unfinished concrete slab (fair.) Restroom is poorly equipped and poorly finished, and not ADA compliant.
10. Building Systems: Fair condition. Electrical, plumbing, and mechanical systems appear to be performing adequately. Old electrical wiring and devices need replacement. Old water service needs replacement.
11. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based. It is also suspected that the shingle siding is asbestos-containing.

Rehabilitation Scope Of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove corrugated metal roofing.
 - Remove loose and scaling exterior paint.
 - Remove poorly constructed restroom.
 - Remove gable end shingle siding (if contains asbestos.)
2. Excavation and Foundation:
 - Remove / Replace deteriorated / settled exterior apron slab.
3. Roof Structure and Roofing:
 - Repair / replace fascia and barge rafters in kind.

- Install new corrugated metal roofing.
 - Install R-30+ ceiling insulation.
4. Exterior Frame and Siding Repair:
 - Repair / replace damaged CMU.
 - Prime, caulk and paint exterior.
 5. Window and Repair:
 - Remove loose paint and corrosion. Repair window frames and sash. Replace glass and re-glaze.
 - Prime and paint.
 6. Door Repair:
 - Repair / Reconstruct sliding garage doors. Re-glaze glass.
 - Prime and paint.
 7. Interior Finishes:
 - Paint interior walls.
 8. Mechanical:
 - New water service piping.
 - New HVAC (? Depending upon change in use for building.)
 - New plumbing for new ADA compliant restroom (? Depending upon change in use for building.)
 9. Electrical:
 - Replace old portions of wiring, boxes, receptacles and lighting.

Bldg 963

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 963					
Exterior Demolition					
	Remove Corrigated Galvanized Roofing	1788	sf	\$ 0.51	\$ 915
	Remove End Shingle Asbestos	256	sf	\$ 2.02	\$ 518
	Disposal Asbestos	1	lot	\$ 523.60	\$ 524
	Remove Concrete Slab	1600	sf	\$ 7.74	\$ 12,376
	Remove Barge Board/Facia	160	lf	\$ 0.49	\$ 78
	Remove Sliding Exterior Door	2	ea	\$ 297.50	\$ 595
	Remove Door Framing	1	ea	\$ 297.50	\$ 298
	Subtotal Exterior Demolition				\$ 15,303
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	200	lf	\$ 11.79	\$ 2,359
	Collect and Bag Residue	2	bags	\$ 7.97	\$ 16
	Subtotal Lead Base Paint				\$ 2,375
Bathroom Demolition					
	Remove W/C	1	ea	\$ 44.63	\$ 45
	Remove Lav	1	ea	\$ 35.70	\$ 36
	Remove Water Heater	1	ea	\$ 35.70	\$ 36
	Remove Shower Surround	42	sf	\$ 1.19	\$ 50
	Remove Plumbing Piping	400	lf	\$ 2.37	\$ 947
	Haul Away Rubble (200 Mile Round Trip)	3	trip	\$ 238.00	\$ 714
	Subtotal Bathroom Demolition				\$ 1,827
Interior Walls, Ceiling & Floor Demolition					
	Remove Electrical	1536	sf	\$ 2.30	\$ 3,528
	Remove Interior Partitions	30	lf	\$ 11.14	\$ 334
	Subtotal Interior Walls, Ceiling & Floor				\$ 3,862
Exterior Regrading					
	Regrade Exterior of Building for Drainage	1	lot	\$ 2,000.00	\$ 2,000
	Subtotal Regrading				\$ 2,000
Exterior Building Refinish					
	Repair Repoint Block Walls	2600	lf	\$ 2.38	\$ 6,188
	Repoint Exterior Foundation Walls	100	cf	\$ 5.70	\$ 570
	Rafter Anchors	50	ea	\$ 2.58	\$ 129
	Ceiling Joist Anchors	50	ea	\$ 2.37	\$ 118
	Spike Grids	100	ea	\$ 2.95	\$ 295
	#30 Roof Felt	18	sq	\$ 23.10	\$ 416
	New Concrete Floor w/Rebar & Finish	1600	sf	\$ 2.39	\$ 3,827
	Corrigated Steel Roofing	1788	sf	\$ 2.64	\$ 4,724
	Drip Flashing	180	lf	\$ 2.23	\$ 401
	Ridge Vent	50	lf	\$ 4.11	\$ 205
	Flashing Around Vents, Chimneys, Etc.	20	sf	\$ 6.72	\$ 134
	R30 Roof Insulation	1800	sf	\$ 0.94	\$ 1,692

Bldg 963

New End Wall Framing for Board & Batten	256	sf	\$ 1.39	\$ 356
New Board and Batten Siding	256	sf	\$ 6.82	\$ 1,746
3/8" OSB Sheathing	256	sf	\$ 0.77	\$ 198
#30 felt on Walls	3	csf	\$ 23.10	\$ 69
Door Trim	45	lf	\$ 83.30	\$ 3,749
New Sliding Doors	2	ea	\$ 1,785.00	\$ 3,570
New Sliding Door Frame	1	ea	\$ 703.00	\$ 703
Window Repair/Replace	6	ea	\$ 415.20	\$ 2,491
Seal Exterior Wall	1920	sf	\$ 0.56	\$ 1,074
Paint Exterior	1920	sf	\$ 0.56	\$ 1,074
Paint Window/Trim	300	lf	\$ 0.44	\$ 132
Subtotal Exterior Building Refinish				\$ 33,861
Interior Refinish				
Seal Interior Block Wall	1920	sf	\$ 0.44	\$ 845
Paint Walls	1920	sf	\$ 0.44	\$ 845
Paint Interior Doors	2	ea	\$ 65.63	\$ 131
Accessible Hardware All Interior Doors	2	set	\$ 208.25	\$ 417
Shower Rough in	1	ea	\$ 409.96	\$ 410
Shower Surround w/ Handicap Seat	1	ea	\$ 5,250.28	\$ 5,250
Lavatory	1	ea	\$ 449.23	\$ 449
Rough in	1	ea	\$ 656.88	\$ 657
W/C	1	ea	\$ 327.25	\$ 327
Rough In	1	ea	\$ 358.19	\$ 358
W/C Partitions	1	ea	\$ 661.64	\$ 662
Handicap Accessories-W/C	1	set	\$ 380.80	\$ 381
Dryer Venting	1	set	\$ 44.03	\$ 44
Water Heater Venting	1	set	\$ 290.36	\$ 290
Water Heater Hookup	1	set	\$ 51.17	\$ 51
HVAC Combustion Air Venting	2	ea	\$ 44.03	\$ 88
HVAC Ducting	390	lb	\$ 4.63	\$ 1,805
Insulation	1200	sf	\$ 2.25	\$ 2,699
6" Insulated Flex Duct	160	lf	\$ 5.88	\$ 941
Sewer Piping	100	lf	\$ 45.28	\$ 4,528
Vent Pipe	100	lf	\$ 20.83	\$ 2,083
Domestic Water Piping	100	lf	\$ 7.43	\$ 743
Water Pipe Insulation	100	lf	\$ 3.30	\$ 330
Rehab Building Electrical	1100	sf	\$ 5.95	\$ 6,545
Subtotal Interior Refinish				\$ 30,879
Fire Safety Upgrade				
Sprinkler Attic/Main/Crawl Space Dry Pipe	1792	sf	\$ 7.08	\$ 12,688
Smoke Alarm System	1792	sf	\$ 1.79	\$ 3,199
Upgrade Water Main	75	lf	\$ 33.44	\$ 2,508
Subtotal Fire Safety			\$ -	\$ 18,395

Uniformat Summary

		Bldg 963			Percent
		Demolition		\$ 23,367	12.5%
		Exterior Demolition	\$ 15,303		
		Lead Base Paint Removal	\$ 2,375		
		Bathroom Demolition	\$ 1,827		
		Interior Walls, Ceiling & Floor Demolition	\$ 3,862		
		Building Remodel		\$ 66,740	35.7%
		Exterior Regrading	\$ 2,000		
		Exterior Building Refinish	\$ 33,861		
		Interior Refinish	\$ 30,879		
		Subtotal Direct Construction Costs		\$ 90,107	48.2%
		Location Factor (42%)		\$ 37,845	20.3%
		Design Contingency (20%)		\$ 18,021	9.6%
		Total Direct Construction Cost		\$ 145,973	78.1%
		General Conditions (8%)		\$ 11,678	6.3%
		Overhead and Profit (20%)		\$ 29,195	15.6%
		Total NET Construction Cost		\$ 186,845	100.0%
		Bldg 963 Life Safety Upgrade			Percent
		Fire Safety Upgrade		\$ 18,395	48.2%
		Fire Safety Upgrade	\$ 18,395		
		Subtotal Direct Construction Costs		\$ 18,395	48.2%
		Location Factor (42%)		\$ 7,726	20.3%
		Design Contingency (20%)		\$ 3,679	9.6%
		Total Direct Construction Cost		\$ 29,800	78.1%
		General Conditions (8%)		\$ 2,384	6.3%
		Overhead and Profit (20%)		\$ 5,960	15.6%
		Total NET Construction Cost		\$ 38,144	100.0%

Stable - Building # 1098

Year Built 1949

Recommended Use

Retain use for storage and isolation of sick animals (mules).

Summary of Recommended Stabilization

Drainage: Re-grade soil around building to drain water away from building foundation.

Roofing: Needs removal and replacement. Areas of exposed rafter tails, barge boards and trim need replacement.

Wall frame: In need of repair/replacement-in-kind.

Wall siding: In need of repair/replacement-in-kind.

Exterior windows and doors: Need repair/replacement.

Floor slab: Needs removal and replacement.

Building Systems: Electrical, plumbing and mechanical need replacement.

Hazmat: Lead-based paint is suspected, testing and potential mitigation required.

Finishes: Replace finishes and re-paint in entirety.

Building Evaluation

The rustic building construction does not fit into the trailer park context of the area. The following is the list and discussion of architectural features to be retained if possible:

Exterior

- Overall form and materials of the structure

Existing Conditions

The building is in overall poor condition. It has been used seasonally and periodically and but not maintained properly over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Poor condition. The corrugated metal roofing is deteriorating and in need of removal and replacement soon.
2. Roof Structure and Trim: Fair to poor condition - the roof structure appears to be performing adequately. Interior members are in good to fair condition. Exposed rafters and fascia / barges are deteriorated and need of repair / replacement.

3. Wood Post and Beam and Wall Frame: Poor condition. Most framing members are deteriorated and in need of replacement.
4. Wall Siding: Poor condition. Most of siding is deteriorated and need of replacement
5. Foundation / Floor Structure: Poor condition. Concrete foundation / floor slab is not performing adequately. Concrete slab cracking and settling and in need of replacement.
6. Wood Windows: Poor condition – repair / rehab of frames and sash required. Replacement of glass and re-glazing of all units required.
7. Doors: Poor condition – repair / reconstruction of doors and replacement of hardware is required.
8. Interior Finishes: Replacement of wood members and paint required throughout.
9. Building Systems: Poor condition. Electrical, plumbing, and mechanical systems not intact.
10. Hazardous Materials: It is suspected that the paint (original – under existing latex coats) is lead-based.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove corrugated metal roofing.
 - Remove loose and scaling exterior paint.
 - Remove deteriorated sheathing.
 - Remove deteriorated wood structural and finish members.
2. Excavation and Foundation:
 - Remove / Replace deteriorated / settled exterior concrete slab.
3. Roof Structure and Roofing:
 - Repair / replace rafters, fascia and barge rafters in kind.
 - Install new corrugated metal roofing.
 - Install R-30+ ceiling insulation.
4. Exterior Frame and Siding Repair:
 - Replace all deteriorated wood framing members in kind.
 - Prime, caulk and paint exterior.
5. Window and Repair:
 - Remove loose paint and repair window frames and sash. Replace glass and re-glaze.
 - Prime and paint.

6. Door Repair:
 - Repair / Reconstruct doors. Re-glaze glass.
 - Prime and paint.
7. Interior Finishes:
 - Paint interior ceiling and partition walls.
8. Electrical:
 - Add service, wiring, boxes, receptacles and interior lighting

DSC-22 (6/97)					
Denver Service Center - Estimate				Estimate By:	B Heinley
Project:	Eleven Building Condition Assessment-North Rim			Date:	27-Jun-03
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022			Reviewed By:	
				Date:	
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 1098					
Exterior Demolition					
	Remove Corrigated Galvanized Roofing	2260	sf	\$ 0.51	\$ 1,156
	Remove Eave Sheathing	1664	sf	\$ 0.49	\$ 812
	Remove Concrete Slab	2320	sf	\$ 8.93	\$ 20,706
	Remove Exterior Dutch Door	1	ea	\$ 59.50	\$ 60
	Remove Hay Loft Doors	4	ea	\$ 29.75	\$ 119
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove Sill	0.09	mbf	\$ 916.30	\$ 82
	Remove Framing	2.91	mbf	\$ 916.30	\$ 2,666
	Remove and Salvage Windows	10	ea	\$ 49.98	\$ 500
	Remove Window Trim	150	lf	\$ 0.67	\$ 100
	Subtotal Exterior Demolition				\$ 26,499
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	1000	lf	\$ 11.79	\$ 11,793
	Collect and Bag Residue	10	bags	\$ 7.97	\$ 80
	Subtotal Lead Base Paint				\$ 11,873
Interior Walls, Ceiling & Floor Demolition					
	Remove Electrical	1512	sf	\$ 0.89	\$ 1,349
	Subtotal Interior Walls, Ceiling & Floor				\$ 1,349
Exterior Regrading					
	Regrade Exterior of Building for Drainage	1	lot	\$ 3,500.00	\$ 3,500
	Subtotal Regrading				\$ 3,500
Exterior Building Refinish					
	1x12 Eave Sheathing	1.6	mbf	\$ 3,599.75	\$ 5,760
	Rafter Anchors	82	ea	\$ 2.58	\$ 212
	Ceiling Joist Anchors	82	ea	\$ 2.37	\$ 194
	Spike Grids	164	ea	\$ 2.95	\$ 484
	Corrigated Steel Roofing	2260	sf	\$ 2.64	\$ 5,970
	3/8" OSB Sheathing	2260	sf	\$ 0.77	\$ 1,748
	#30 Roof Felt	23	sq	\$ 23.10	\$ 531
	Drip Flashing	220	lf	\$ 2.23	\$ 490
	Ridge Vent	72	lf	\$ 4.11	\$ 296
	Flashing Around Vents, Chimneys, Etc.	40	sf	\$ 6.72	\$ 269
	New Structural Framing	2.91	mbf	\$ 1,475.60	\$ 4,294
	Window Trim	150	lf	\$ 46.77	\$ 7,015
	Dutch Door	1	ea	\$ 297.50	\$ 298
	Hay Loft Doors	4	ea	\$ 297.50	\$ 1,190
	Window Repair/Replace	10	ea	\$ 311.14	\$ 3,111
	Paint Exterior	2000	sf	\$ 0.56	\$ 1,119
	Paint Window/Trim	150	lf	\$ 0.44	\$ 66
	Subtotal Exterior Building Refinish				\$ 33,046
Interior Refinish					

Bldg 1098

	New Concrete Floor w/Rebar & Finish	1600	sf	\$	3.58	\$	5,731
	Rehab Building Electrical	1100	sf	\$	2.38	\$	2,618
	Subtotal Interior Refinish					\$	8,349

Uniformat Summary

<u>Building 1098</u>			Percent
Demolition		\$ 39,721	22.6%
Exterior Demolition	\$ 26,499		
Lead Base Paint Removal	\$ 11,873		
Interior Walls, Ceiling & Floor Demolition	\$ 1,349		
Building Remodel		\$ 44,895	25.6%
Exterior Regrading	\$ 3,500		
Exterior Building Refinish	\$ 33,046		
Interior Refinish	\$ 8,349		
Subtotal Direct Construction Costs		\$ 84,616	48.2%
Location Factor (42%)		\$ 35,539	20.3%
Design Contingency (20%)		\$ 16,923	9.6%
Total Direct Construction Cost		\$ 137,078	78.1%
General Conditions (8%)		\$ 10,966	6.3%
Overhead and Profit (20%)		\$ 27,416	15.6%
Total NET Construction Cost		\$ 175,460	100.0%

Campground Laundry/Shower - Building # 1568

Year Built Unknown

Recommended Use

Retain use as a laundry/shower facility.

Summary of Recommended Stabilization

Roofing: Areas of shingle roofing need repair. Areas of fascia/gutter need replacement.

Exterior CMU walls: Openings in walls apparently made without lintels in need of repair.

Building systems: Water, sewer, and propane services may need replacement soon.

Finishes: Re-painting as required by required repairs.

Building Evaluation

Building does not fit in with the rustic building construction context of the area. The following is the list and discussion of architectural features to be retained if possible (if building considered significant):

Exterior

- Overall form and materials of the structure

Existing Conditions

The building is in overall good condition. It has been occupied and maintained properly over the years. Re-grading around the building to provide adequate drainage is required.

Assessment of Conditions:

1. Roofing: Fair condition. The wood shingle roofing has areas in need of repair and perhaps replacement of entire roofing in needed soon.
2. Roof Structure and Trim: Good condition - the roof structure is performing adequately. Interior and exposed members are in fair condition. Exposed rafter tails, barge boards and trim are in fair condition – Fascia / gutter is deteriorated and need of repair / replacement.
3. CMU Wall Frame: Good to fair condition – some repair / replacement required where openings made without lintels. Addition in rear is wood framed (good.)
4. Wall Siding: Good condition wood T-111 siding on addition in rear.
5. Foundation / Floor Structure: Good to Fair condition. Concrete foundation / floor slab performing adequately. Some minor spalling of exposed foundation wall at west side. Concrete porch and walks settling and in need of repair / replacement. Windows: Poor condition – repair / rehab of frames and sash required.

6. Doors: Good condition.
7. Interior Finishes: Paint on exterior CMU walls (good.) Interior partition wall and ceiling finishes are painted gypsum board (good) and simple 1x wood trim (poor.) Flooring is quarry tile on concrete slab (good.)
8. Building Systems: Fair condition. Systems are old but appear to be performing adequately today. Newer electrical service but wiring and devices old; plumbing system, especially water service, sewer, and propane service may need replacement soon; HVAC appears to be in good condition.

Rehabilitation Scope of Work

The following is an outline of the work needed.

1. Demolition:
 - Remove damaged wood roofing shingles.
 - Remove damaged fascia/gutter.
 - Remove loose and scaling exterior paint.
2. Excavation and Foundation:
 - Repair foundation where settled.
 - Remove Replace deteriorated / settled exterior porch slabs.
3. Roof Structure and Roofing:
 - Repair / replace fascia and gutter in kind.
 - Install new wood shingles.
 - Install R-30+ ceiling insulation.
4. Exterior Frame and Siding Repair:
 - Repair / replace damaged CMU in kind add lintel steel as required.
 - Prime, caulk and paint exterior.
5. Window and Door Repair:
 - Remove loose paint and corrosion. Repair window frames and sash, and doors.
 - Prime and paint.
6. Interior Finishes:
 - Replace damaged gypsum board.
 - Replace damaged gypsum board.
7. Building Systems:
 - Replace water, sewer, and propane service piping. Replace electrical wiring and devices.

DSC-22 (6/97)					
Denver Service Center - Estimate			Estimate By: B Heinley		
Project:	Eleven Building Condition Assessment-North Rim		Date: 27-Jun-03		
Park:	Grand Canyon National Park				
Package:	8219-1001-Y7Z PMIS-70022		Reviewed By:		
			Date:		
Estimate is Based on 2003 Costs					
Class "C" Estimate					
Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
Building 1568					
Exterior Demolition					
	Remove Shake Roof	2100	sf	\$ 0.55	\$ 1,150
	Remove Concrete Slab	416	sf	\$ 8.93	\$ 3,713
	Remove Exterior Doors	3	ea	\$ 14.70	\$ 44
	Remove Gas Service Regulator	1	lot	\$ 178.50	\$ 179
	Remove Electric Service Equipment	1	lot	\$ 297.50	\$ 298
	Remove Gutter	100	lf	\$ 0.98	\$ 98
	Remove Downspouts	40	lf	\$ 0.98	\$ 39
	Remove Facia	0.1	mbf	\$ 916.30	\$ 92
	Subtotal Exterior Demolition				\$ 5,611
Lead Base Paint Removal					
	Chemical Strip paint to 12" Wide	500	lf	\$ 11.79	\$ 5,896
	Collect and Bag Residue	5	bags	\$ 7.97	\$ 40
	Subtotal Lead Base Paint				\$ 5,936
Mechanical Services					
	Remove Plumbing Piping	600	lf	\$ 2.37	\$ 1,421
	Remove Dryer Ducting	1	lot	\$ 297.50	\$ 298
	Haul Away Rubble (200 Mile Round Trip)	3	trip	\$ 238.00	\$ 714
	Subtotal Bathroom Demolition				\$ 2,432
Interior Walls, Ceiling & Floor Demolition					
	Remove Electrical	1664	sf	\$ 2.30	\$ 3,822
	Remove Washer	4	ea	\$ 29.75	\$ 119
	Remove Dryer	8	ea	\$ 29.75	\$ 238
	Remove Sheet Rock (20%of Walls/Ceiling)	900	sf	\$ 0.24	\$ 214
	Subtotal Interior Walls, Ceiling & Floor				\$ 4,393
Exterior Regrading					
	Regrade Exterior of Building for Drainage	1	lot	\$ 3,500.00	\$ 3,500
	Subtotal Regrading				\$ 3,500
Exterior Building Refinish					
	#30 Roof Felt	21	sq	\$ 23.10	\$ 485
	Shake Roof	21	sq	\$ 274.30	\$ 5,760
	Drip Flashing	160	lf	\$ 2.23	\$ 356
	Ridge Vent	52	lf	\$ 4.11	\$ 213
	Flashing Around Vents, Chimneys, Etc.	40	sf	\$ 6.72	\$ 269
	R30 Roof Insulation	1300	sf	\$ 0.94	\$ 1,222
	New Steel Lintel	3	ea	\$ 33.50	\$ 100
	Gutters	100	lf	\$ 4.41	\$ 441
	Downspout	40	lf	\$ 4.40	\$ 176
	Fascia	170	lf	\$ 3.00	\$ 510
	New Concrete Floor w/Rebar & Finish	1600	sf	\$ 2.39	\$ 3,827
	Full Exterior Door	5	ea	\$ 703.00	\$ 3,515
	Window Repair	12	ea	\$ 311.14	\$ 3,734

Bldg 1568

Paint Exterior	1500	sf	\$	0.56	\$	839
Paint Window	150	lf	\$	0.44	\$	66
Subtotal Exterior Building Refinish					\$	21,514
Interior Refinish						
Replace Gypboard	200	sf	\$	0.92	\$	183
Wood Baseboards	50	lf	\$	3.32	\$	166
Paint Walls,Ceiling	5320	sf	\$	0.44	\$	2,342
Paint Interior Doors	2	ea	\$	65.63	\$	131
Accessable Hardware All Interior Doors	2	set	\$	208.25	\$	417
Water Heater Venting	1	set	\$	290.36	\$	290
Water Heater Hookup	1	set	\$	51.17	\$	51
Dryer Venting	8	ea	\$	119.00	\$	952
Sewer Piping	150	lf	\$	45.28	\$	6,792
Vent Pipe	250	lf	\$	20.83	\$	5,206
Domestic Water Piping	300	lf	\$	7.43	\$	2,228
Water Pipe Insulation	300	lf	\$	3.30	\$	989
Gas Piping	150	lf	\$	6.78	\$	1,017
Rehab Building Electrical	1664	sf	\$	9.16	\$	15,247
Reinstall Washer	4	ea	\$	29.75	\$	119
Reinstall Dryer	8	ea	\$	29.75	\$	238
Reinstall Gas Regulator	1	ea	\$	119.00	\$	119
Subtotal Interior Refinish					\$	36,488

Uniformat Summary

		<u>Building 1568</u>		Percent
	Demolition		\$ 20,524	12.1%
	Exterior Demolition	\$ 5,611		
	Lead Base Paint Removal	\$ 5,936		
	Mechanical Services	\$ 2,432		
	Interior Walls, Ceiling & Floor Demolition	\$ 6,545		
	Building Remodel		\$ 61,503	36.2%
	Exterior Regrading	\$ 3,500		
	Exterior Building Refinish	\$ 21,514		
	Interior Refinish	\$ 36,488		
	Subtotal Direct Construction Costs		\$ 82,027	48.2%
	Location Factor (42%)		\$ 34,451	20.3%
	Design Contingency (20%)		\$ 16,405	9.6%
	Total Direct Construction Cost		\$ 132,884	78.1%
	General Conditions (8%)		\$ 10,631	6.3%
	Overhead and Profit (20%)		\$ 26,577	15.6%
	Total NET Construction Cost		\$ 170,092	100.0%

Appendix 4. References

Analyses Commissioned to Support Development Planning Effort

Building Condition Assessment Report - Eleven Buildings North Rim, Grand Canyon National Park, prepared by United States Department of the Interior, National Park Service, Denver Service Center, April 2003.

Choosing By Advantages Report - Enhancing Visitor Orientation and Interpretation and Adaptive Re-Use of Existing Structures Alternatives Evaluation for the North Rim, Grand Canyon National Park, prepared by URS Corporation, October 2003.

Visitation and Transportation Analysis - Memorandum for the North Rim Development Plan, Grand Canyon National Park, Arizona, prepared by Bill Byrne, David Evans and Associates, Inc., December 4, 2002.

Compliance Completed to Support Development Planning Effort

Environmental Assessment, North Rim Development Plan, Grand Canyon National Park, prepared by Debbie Lutch, Grand Canyon National Park, June 2005

Finding of No Significant Impact, North Rim Development Plan, Grand Canyon National Park, signed by the acting Intermountain Regional Director, September 16, 2005.

North Rim Development Plan Programmatic Agreement, signed by the Superintendent of Grand Canyon National Park and the Arizona State Historic Preservation Officer, September 6, 2005.

Other Documents Referenced

Cultural Landscape Report 100% Draft Submission - North Rim Bright Angel Peninsula Developed Area, Grand Canyon National Park, John Milner and Associates, May 2003.

Development Concept Plan - North Rim Visitor Facilities, Draft Supplemental Environmental Statement to the Final Master Plan and Environmental Impact Statement, United States Department of the Interior, National Park Service, Western Regional Office, December 1990.

Development Concept Plan and Environmental Assessment (Draft) - Grand Canyon North Rim, Grand Canyon National Park, United States Department of the Interior, National Park Service, Denver Service Center, February 1988.

Environmental Assessment/Assessment of Effect: North Rim Emergency Services/Wildland Fire Facility and Preservation Treatments of Exposed Frame Cabins, Grand Canyon National Park, U.S. Department of the Interior.

Frame Cabins Rehabilitation Study - Grand Canyon North Rim, Grand Canyon National Park, Architectural Resource Group, January 2001.

General Management Plan - United States Department of the Interior, National Park Service, Denver Service Center, August 1995.

General Management Plan Environmental Impact Statement (Draft) - Grand Canyon National Park, Arizona, United States Department of the Interior, National Park Service, Denver Service Center, March 1995.

Housing Management Plan - Grand Canyon National Park, United States Department of the Interior, National Park Service, Grand Canyon National Park, April 2002.

Appendix 5. Planning Participants

National Park Service, Grand Canyon National Park

Jennie Albrinck	North Rim Supervisory Interpreter
Janet Balsom	Cultural Resources Branch Chief
Jim Boucher	North Rim Unit Facility Manager
Kevin Cochary	North Rim District Ranger (former)
Michael Leary	Landscape Architect
Debbie Lutch	Natural Resource Specialist
Mark McCutcheon	North Rim District Ranger
Greg McGregor	Mechanical Engineer
Shelley Mettlach Niedernhofer	Fee Demo Program Manager (former)
Robert Powell	Historical Architect
Laura Shearin	Concessions Contract Specialist
Vicky Stinson	Fee Demo Program Manager, Landscape Architect
Phil Walker	North Rim Unit Manager
Susan Weaver	Cultural Resource Specialist
Sara White	Compliance Officer

National Park Service, Denver Service Center

Elaine Carr	Architect
Paul Cloyd	Project Manager (former)
Michele D'Arcy	Project Manager, Landscape Architect
Jack Hagen	Architect
Ben Heinley	Cost Estimator

David Evans and Associates

Bill Byrne	Transportation Planning Engineer
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URS Corporation

Mark Watson	CBA Facilitator
John Williams	CBA Cost Estimator

