



Congestion Assessment

*White Sands National
Monument*

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WASO Congestion Management
Program



National Park Service
U.S. Department of the Interior

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Congestion Assessments Description

Congestion Assessments provide short-term technical transportation support to national parks, in cooperation with regional transportation coordinators. Parks with congestion have difficult to manage challenges which impact visitor experience, resources, safety, asset management and park operations.

These assessments use the first three (3) steps in the 7-step Congestion Management Toolkit process. Assessments use a structured approach to exploring high-level park congestion issues and information, then matches those issues with a wide range of potential congestion mitigation tools at the end of the report. Assessments are not decision-making documents or transportation plans. Post-assessment technical support is available from regional transportation coordinators, the Denver Service Center, Federal Lands Highway (FHWA) and the Volpe National Transportation Systems Center.

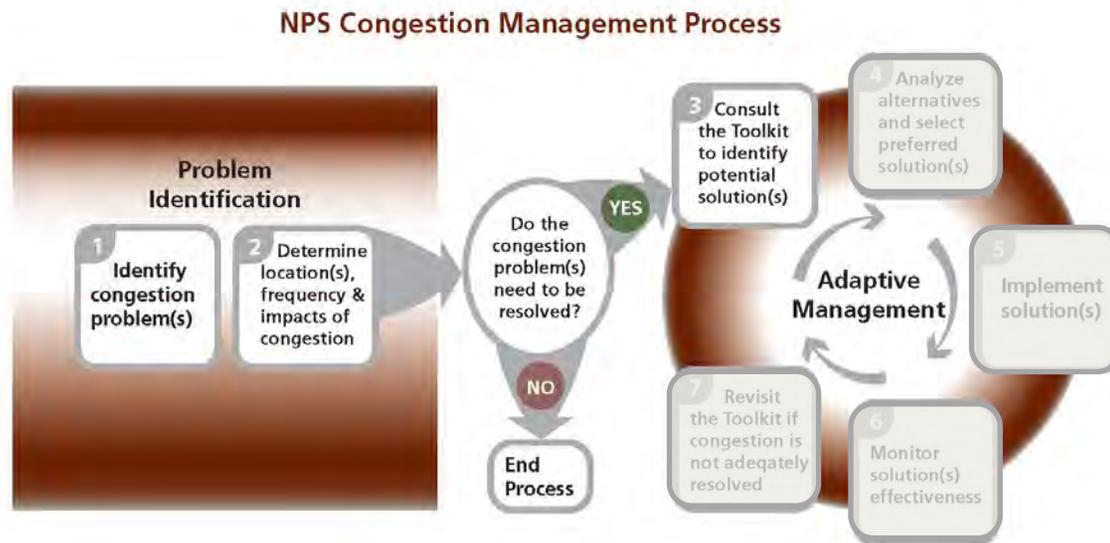


Figure 1. The NPS Congestion Management Process

For more information about the Congestion Management Program and related technical support, please contact Linda MacIntyre, Program Manager at 303 969-2483. The Congestion Management Toolkit can be found at www.nps.gov/transportation/pdfs/NPS-CMS_Toolkit.pdf.

Background

White Sands National Monument was established on January 18, 1933 under the presidential proclamation of President Herbert Hoover “for the preservation of the white sands and additional features of scenic, scientific, and educational interest . . .” The monument is situated about 15 miles southwest of Alamogordo, New Mexico, at the northern end of the Chihuahuan Desert in the Tularosa Basin. Positioned between the Organ, Sacramento, and San Andres mountain ranges, the monument protects a major portion (about 115 square miles) of the world’s largest gypsum dunefield. Among the most prominent features of the park are the brilliant white dunes that rise up to 60 feet in some places and move as much as 30 feet per year. What may appear to many as a virtual wasteland actually supports a diverse ecosystem that is uniquely adapted to the gypsum dune landscape. Described as part of a “wet eolian system,” the White Sands dunefield is influenced by eolian (wind-related) processes and surface and groundwater hydrology. The two principal features in White Sands National Monument—the gypsum dunes and playas—typify these processes, attesting to past and present eolian and pluvial (precipitation-related) activities and groundwater discharge. Alkali Flat covers the western portion of the monument and extends southward to Lake Lucero, a playa lake in the southeast corner of the monument. Here, dazzling displays of selenite crystals, which serve as the source of the gypsum dunes, extend across the alkaline mudflats of the lakeshore, creating a geologic showcase found nowhere else in the national park system. Uniquely adapted “white-colored” species can also be found throughout the monument, and include an animal from every class of vertebrate, except birds, in North America. Additionally, White Sands National Monument is a host to a variety of vegetation communities including alkali sacaton grasslands, desert scrub (mesquite and creosote), and isolated groves of cottonwood trees.

While the gypsum dunes and the playas are the two principal features at the monument, White Sands National Monument is “more than a sandbox.” Extraordinary cultural, paleontological, and outdoor recreation opportunities abound. The monument features perhaps thousands of archeological sites scattered throughout the backcountry, including unique archeological sites called gypsum hearth mounds that are found nowhere else in North America. Additionally, the monument headquarters is an historic district listed in the National Register of Historic Places. This unique setting inspires learning, appreciation, and stewardship. The richness and diversity of human interaction with this region—from an unusual density of ancient hearth sites, to explorations of Spanish Conquistadores, to the posting of Buffalo Soldiers, to aeronautical experimentation—provides opportunities for comparing and contrasting the values and adaptations of former cultures to those of our own. About 12,000 to 24,000 years ago, the monument’s playa lakes were part of a much larger lake known as Lake Otero, which sustained a wide array of Cenozoic species. Today, Ice Age fossil trackways can be found along the much broader shoreline of the Lake Otero, including fossil track sites of Pleistocene mammals, primarily proboscidean (mammoth or mastodon), as well as a variety of other plant and animal life from the era. A mega-track site is the most significant paleontological discovery at White Sands National Monument to date, and represents one of the largest concentrations of Cenozoic fossil tracks within the United States and possibly the world. Significant trackways have also been found on Alkali Flat and the southern shoreline of Lake Lucero.

Over 600,000 people visited the monument in 2017 to experience and learn about this amazing place. In the process, visitors also enjoy one-of-a

kind hiking, sledding, backcountry camping, and other dispersed outdoor recreation experiences. In addition, the wide-open landscape offers unparalleled scenery and vast, unfettered views spanning from horizon to horizon. By night, blankets of stars stretch across the sky, creating exceptional photographic and stargazing opportunities.

Congestion Problems: Locations, Frequency and Impacts

The Historic District of White Sands National Monument was constructed in the 1930s and is listed on the National Register of Historic Places. The Monument is located on US Route 70 (US 70) in southern New Mexico between Alamogordo and Las Cruces. US 70 began as a dirt road that was paved in the 1950s and is currently a four lane divided highway. The visitor center and gift shop, administrative area, maintenance area, employee housing are located in the Historic District and is the focal point of congestion. The entrance to the Historic District was improved during the late 1970s. The Monument receives year round visitation that slightly peaks March through May. While the road leading to the Monument has been improved over time, and park visitation has increased by approximately 40% within the last ten year, there have been minimal changes to the historic district.

Signage on Dunes Drive just after entering the Monument is potentially confusing. Vehicles must quickly decide to make a right turn into the visitor center parking lot or proceed down Dunes Drive to the fee booth. This causes drivers to occasionally stop on Dunes Drive as they make their decision which can lead to backups on US 70. Due to the relatively short distance between the intersection of US 70 and the visitor center parking lot, congestion also occurs at the monument entrance when there is congestion in that parking lot. In addition, at the US 70 intersection, there have been traffic accidents including visitor fatalities associated with egress to the monument.

The south parking lot in front of the visitor center lot has 14 marked spaces for cars, six to nine spaces for large vehicles, and four accessible spaces. It is full and congested most days during peak season, special events, and holidays. Given the current striping, the lot is difficult for large vehicles to park and circulate. Parking in unmarked spots frequently prevents vehicles from easily entering or exiting the lot. People often stop at the Monument to use the restroom since it is convenient stop for travelers.



The north parking lot is behind the visitor center and has 26 marked spaces for cars. It is also full and congested most days during peak season, special events, and holidays, specifically if a RV attempts to park there. When both parking lots are full, Monument staff direct visitors to park in the administrative area. Pedestrian-vehicle conflicts occur as visitors walk across Dunes Drive from the administrative area to the visitor center/gift shop complex.

The Monument is mostly surrounded by US Department of Defense lands, including the White Sand Missile Range and Holloman Air Force Base.

There is a formal cooperative relationship between the Monument and the missile range to maintain the long-term success of their different missions. Military tests are conducted on the missile range three to five times per month that affects the monument. During the tests, the monument closes the gate on Dunes Drive north of the historic district to prevent visitors from accessing areas that are restricted due to safety concerns. The tests are two and three hours long, typically in the morning. When the tests are conducted midday, the Monument staff clears the closed portion of the monument prior to the test. Visitors wanting to access the dunes following a test, will line up in their cars on the Residential Road and through Residence Circle to wait for the dunes to re-open.

Outside of the historic district, congestion also occurs at the entrance station during the full moon night events typically 6 times a year during the warmer months and holidays such as Easter. About 1,200 cars with two to three visitors per car enter the park during a three hour period for the full moon night events. About 2,000 cars enter the park during the Easter holiday weekend. During these times, vehicles will back up about a quarter of a mile onto US 70, without any place to safely turn around if they choose to leave the line. There are times, like during the White Sands Balloon Invitational in Alamogordo, that traffic will back up several miles starting at the monument and impedes traffic on US 70.

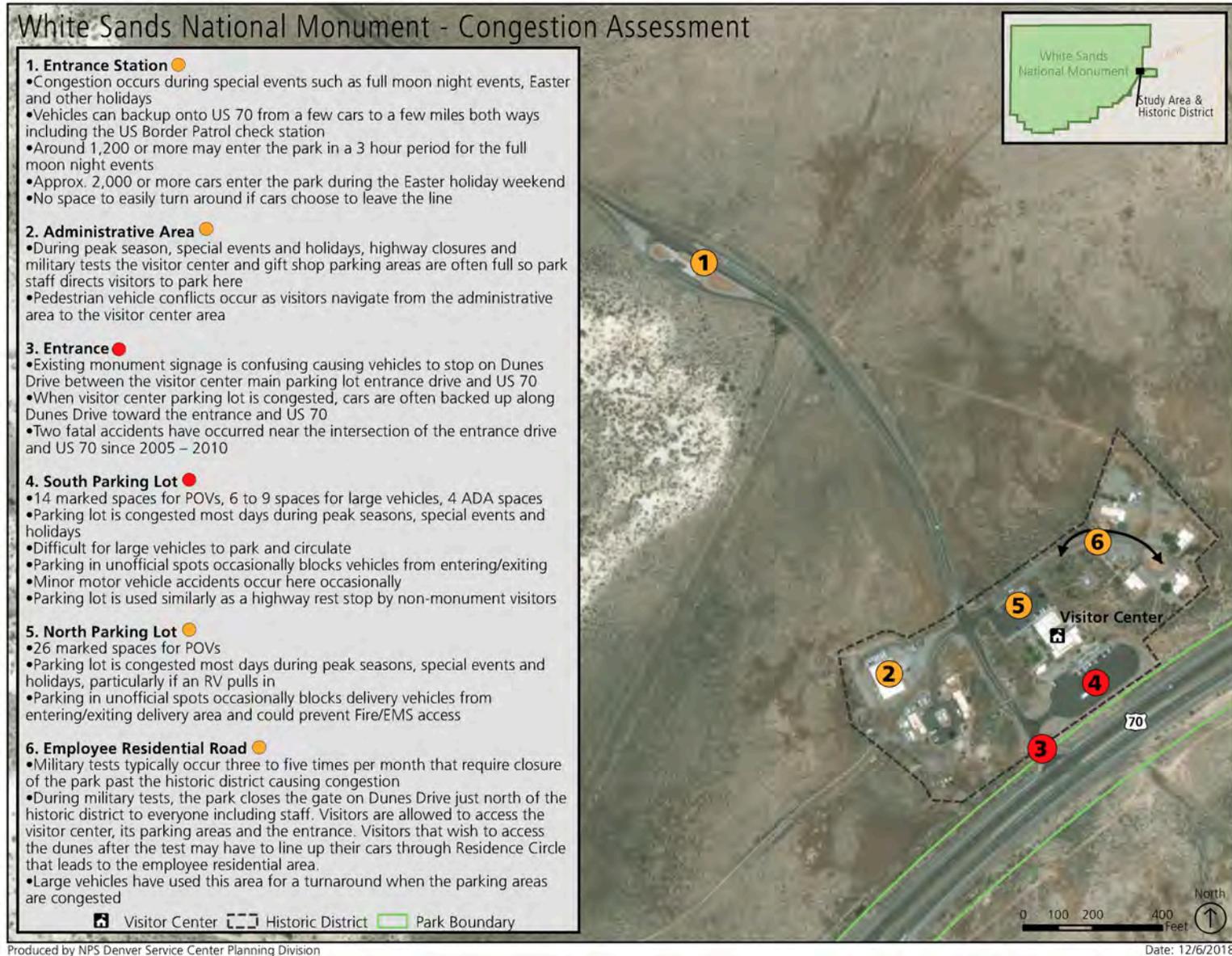
Table 1 summarizes the impacts congestion has on the Park, based on the NPS 2010 Congestion Survey of all parks. Collecting the same data from all park units with Congestion Assessments enables NPS to consistently track issues at the Congestion Management Program level to identify trends.

Table 1

Congestion Survey Questions (7)	Park Responses
<p>1) What are the impacts of congestion on visitor experience and resources?</p>	<p>Select one or more: <input checked="" type="checkbox"/> visitor experience <input checked="" type="checkbox"/> safety <input checked="" type="checkbox"/> park operations <input checked="" type="checkbox"/> park facilities <input type="checkbox"/> natural resources <input checked="" type="checkbox"/> cultural resources <input type="checkbox"/> other</p>
<p>2) How is safety affected by congestion?</p>	<p>Select one or more: <input checked="" type="checkbox"/> ped/bike conflicts with vehicles <input checked="" type="checkbox"/> delayed emergency response <input checked="" type="checkbox"/> clustering of vehicle crashes <input type="checkbox"/> ped/bike conflicts <input type="checkbox"/> other OR <input type="checkbox"/> safety is not an issue</p>
<p>3) Where is congestion present in the park?</p>	<p>Select one or more: <input checked="" type="checkbox"/> parking areas <input checked="" type="checkbox"/> roadways providing access to the park <input checked="" type="checkbox"/> visitor center <input checked="" type="checkbox"/> park entrance station <input type="checkbox"/> primary park vehicle tour route <input checked="" type="checkbox"/> pedestrian loading areas <input type="checkbox"/> pedestrian paths/trails <input type="checkbox"/> trailheads <input type="checkbox"/> scenic overlooks <input type="checkbox"/> transit stops <input type="checkbox"/> other park attractions</p>

Congestion Survey Questions (7)	Park Responses
<p>4) During which of the following timeframes is congestion present?</p>	<p>Select one or more:</p> <p><input type="checkbox"/> only during major peak season holidays (1-10 days)</p> <p><input type="checkbox"/> only during peak season (31-75 days/year)</p> <p><input checked="" type="checkbox"/> on weekends (52-114 days)</p> <p><input checked="" type="checkbox"/> on weekdays (more than 114 days)</p> <p><input checked="" type="checkbox"/> special events</p>
<p>5) Is the park actively managing congestion?</p>	<p>The Monument has actively been managing traffic congestion since the 1960s with monument staff along with considering infrastructure solutions that are described in congestion-related data, plans and trends section. Recently, the Monument has worked with the Harper’s Ferry Center to install new wayfinding signs and has been directing traffic during high congestion periods.</p> <p>The Monument recently revisited restriping the south parking lot but determined to keep the previous configuration and is planning for a new parking expansion outside the historic district.</p> <p>When entrance station congestion reaches the intersection with US 70, visitors are waved through the kiosk without paying the entrance fee, and visitors do not have the opportunity to ask questions or receive monument information and safety messages.</p> <p>The Monument is working with New Mexico Department of Transportation (NMDOT) to improve safety concerns due to vehicular backups at the monument entrance and the intersection of US 70. Those improvements are described in the congestion-related data, plans and trends section.</p>
<p>6) Has your current congestion mitigation strategy (or strategies) been successful?</p>	<p>Limited success.</p>
<p>7) Has the park been partnering with other groups or agencies to manage congestion?</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If yes, what groups or agencies?</p> <p>NMDOT, White Sands Missile Range, NM State Police, Otero County Sherriff Department, Border Patrol</p>

Figure 2



Congestion-Related Data, Plans and Trends

1960s Road & Parking Lot Designs

Congestion issues are not new at WHSA. The monument has been exploring potential infrastructure solutions since the 1960s and has provided the congestion assessment team with five design options to re-locate the entrance road, parking lots, and other facilities. Drawings of the options are attached.

1976 Master Plan

Vehicular traffic congestion is identified at the beginning of the plan as a current and past problem potentially compromising the monuments natural resources and visitor experiences. The Plan states monument facilities cannot accommodate an increase in visitors because the entrance road at US 70 and the main visitor center parking lot have "...an incompatible mixture of automobile and pedestrian circulation. This situation is hazardous to the public, and must be corrected."

The Plan includes recommendations to mitigate the vehicular traffic congestion and minimize vehicle-pedestrian conflicts:

1. Add an internal road parallel, and connected to the Heart of the Dunes Road to establish a one-way traffic pattern and increase roadway capacity.
2. Add a paved parking lot northwest of the visitor center, connected to Residential Drive and Heart of the Dunes Road.
3. Provide automobile caravan tours to Lake Lucero.

1978 Transportation Study

This study states the congestion problem at the visitor center is related to the layout of the access roads, parking lot, and buildings. At the time of the study, all traffic entering or leaving the monument had to drive through the visitor center parking lot causing confusion and unsafe conditions. Pedestrian/vehicular conflicts were also identified. The study makes these recommendations:

1. Construct new entrance road and implement parking lot modifications in the Visitor Center area to improve circulation, vehicular and pedestrian safety.
2. Do not build a new road (Dunes Drive) due to unacceptable significant adverse impacts.
3. Consider implementation of a transit system.

As a result of this study, a new entrance road was constructed and parking lot modifications were made. No further transportation improvements have been made in the historic district since these updates.

Visitation Trends

Figure 3 shows increasing recreation visitation from 1932 to 2017 with some fluctuations. Visitation was about at current levels during the mid to late 1990s followed by a decline. Within the past ten years, WHSA visitation has increased 40%. In 2018, visitation continues to rise. Figure 4 displays recreation visits by month from 2008 to 2017 and shows that visitation is stable throughout the year with slight peaks in March and July. Recreation visits are estimated using inductive loop traffic counter that is located at the entrance road to the park. The vehicle count is reduced for non-recreation vehicles (actual count), non-reportable vehicles (30 per day), and buses. The reduced vehicle count is multiplied by the persons-per-vehicle multiplier of 3.2. WHSA continues to see trends in increased visitation, although the rate of growth is slowing.

Figure 3

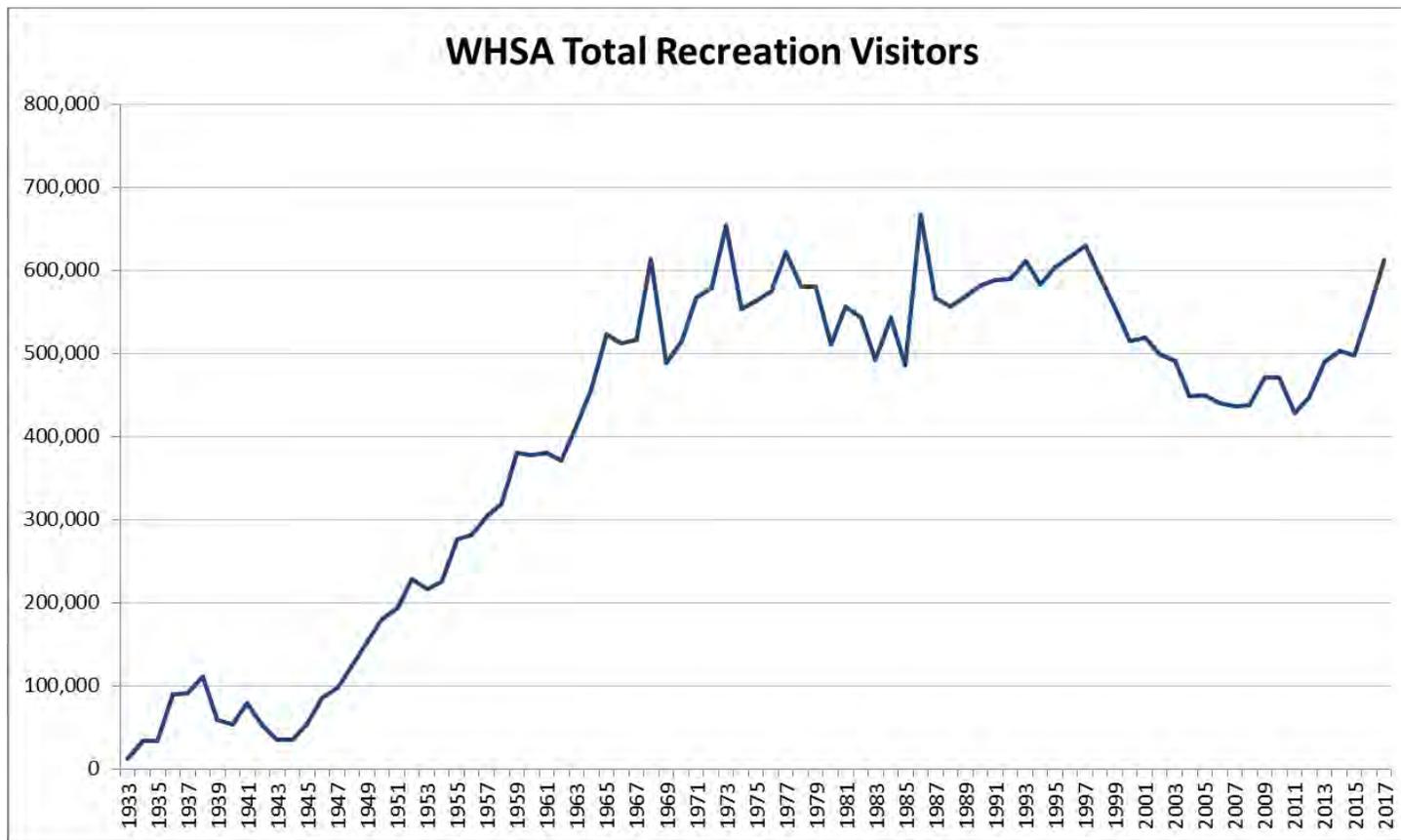
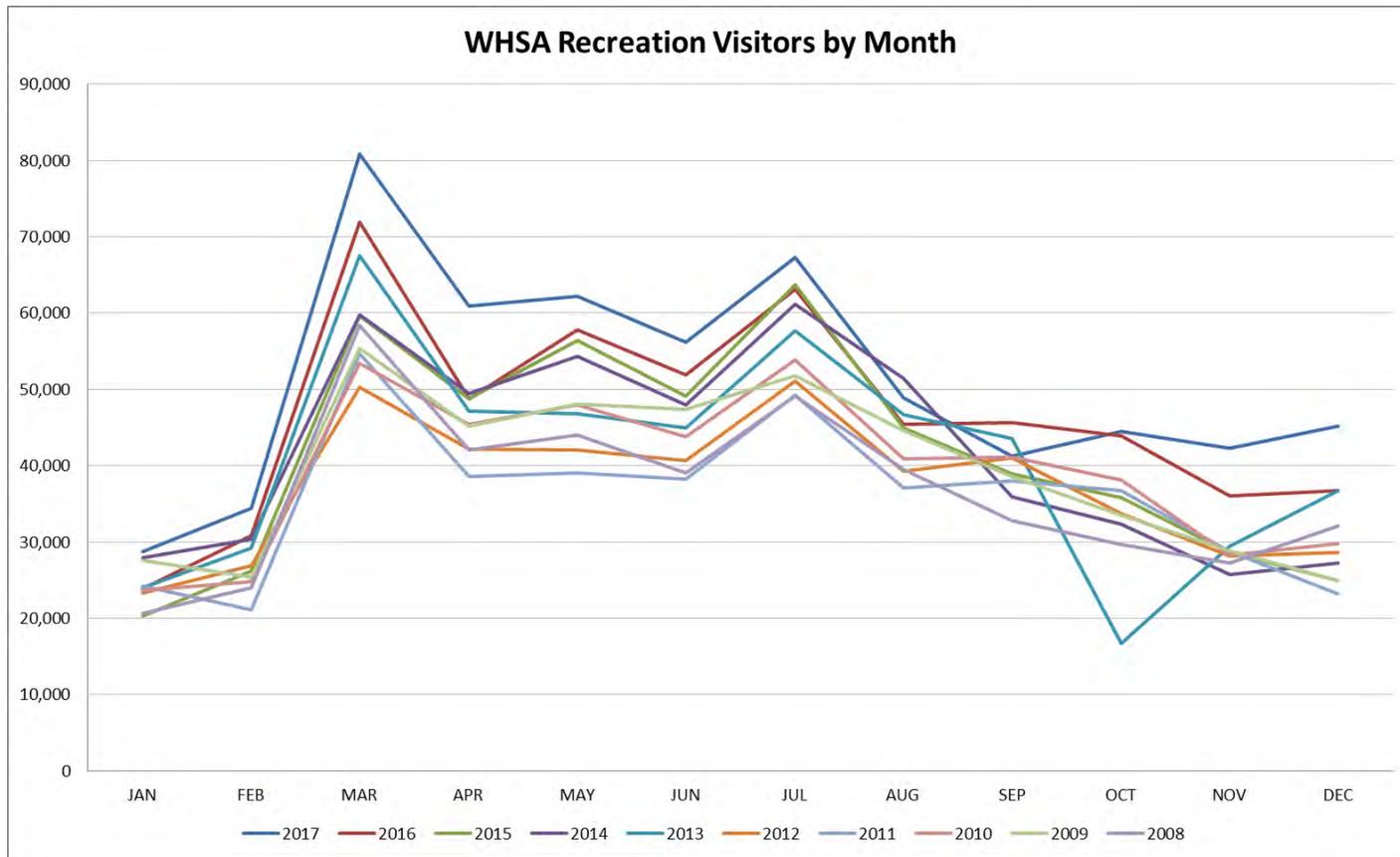


Figure 4



2012 Visitor Study

The visitor study was a survey of 226 randomly selected monument visitors, conducted July 17-23, 2012, and did not include questions regarding vehicular access, parking, or congestion. A little more than 40% of visitor groups obtained trip planning information from the monument website. Eleven percent of visitor groups were residents of Alamogordo, Tularosa, and Las Cruces. The survey identified about sixty percent of the visitors had arrived in private cars. About three-quarters of all monument visitors parked and went into the visitor center, and drove on Dunes Drive. The average length of stay was 3.3 hours. Currently, anecdotal observations from staff estimates that visitors stay in the visitor center area approximately 30 minutes. Of about 120 written comments from visitors, one comment related to congestion recommending the addition of a monument entrance drive.

2016 Foundation Document

In the *Visitor Experience and Opportunities* section, existing congestion is identified as a result of inadequate parking area, and recommends developing a plan to improve the front entrance configuration including the parking area, road access, visitor services, comfort station, and entrance road intersection with US 70. In the *Identification of Key Issues and Associated Planning and Data Needs* section, congestion is a key issue because the entrance road intersection with US 70 was designed in the 1930s, and does not adequately accommodate contemporary vehicle types or the current volume of traffic entering the Park. Inadequate parking area is defined as a “...continuing concern with regards to safety and traffic flow.”

New Mexico Department of Transportation Road Safety Audit for US Route 70 (MP 200) – May 2014

The report was conducted in response to severe congestion complications along US 70 in each direction from the WHSA entrance road. The existing highway geometry, crash data, and peak hour traffic counts were used to identify existing conditions requiring changes to mitigate or eliminate current highway congestion at the monument entrance. The ten year crash history was analyzed for the report, and there were 19 crashes recorded with one fatality, four with injuries, and ten with property damage only. There was also another crash fatality documented in 2012. Recommended changes to US 70 include:

1. Add median treatment with clear designation of the travel and turn lanes.
2. Relocate the monument entrance drive either 850 feet or 1,200 feet east into a tangent alignment of the state highway.
3. Add signage and improved pavement markings at the monument entrance drive intersection.
4. Add a traffic signal at the monument entrance drive intersection.

Recommendations one, three, and four are currently be implemented by NM DOT.

Potential Legislative Boundary Expansion

Sen. Martin Heinrich (D-NM) introduced legislation during the 115th Congress to re-establish the White Sands National Monument as White Sands National Park in the State of New Mexico; however, the bill was not enacted. In addition to park designation, the bill would have also finalized a land exchange with the Department of the Army in which the Army would convey 8,592 acres to the National Park Service that may be used for additional recreation opportunities among others. Congress may introduce a new bill in the next legislative session. If additional land is acquired, the Monument should consider if new developments and/or activities would improve or exacerbate current congestion conditions.

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

The Monument received funding through the Line Item Construction Program for PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms. Design for this project will begin in 2020 with construction in 2023. This project will resolve problems with egress, accessibility, and the electrical system at the 1936 Works Progress Administration (WPA) Spanish Pueblo-Revival style visitor center listed on the National Register of Historic Places. The project also includes constructing a new accessible restroom located adjacent to the visitor center. The Monument needs this built as soon as possible so is exploring using FLREA funds to construct the facility. During construction, the visitor center parking lot will be used for staging and short-term office space. Temporary visitor parking will be north of, and outside the historic district to provide parking during project construction.

PMIS 250415 Construct Temporary Oversized Vehicle Parking

Funding to construct a new temporary oversized vehicle parking lot adjacent to the visitor center and gift shop area has been secured through the park's recreation fee revenue. This lot will be the main parking area during the nine-month renovation project referenced above because the Monument has no other visitor parking areas in the historic district. Because there are severe current parking supply shortages, this temporary parking lot design should also consider the long term parking needs that includes long vehicle parking. Attached are some proposed parking lot designs to consider.

Parking Lot Demand Analysis

The Monument provided traffic counter data from 2008 through 2018 indicating the number of vehicles entering the monument daily. The above referenced NM DOT Road Safety Audit also included Monument ingress and egress traffic data collection. That data was used to understand daily traffic flow patterns. Those patterns were then applied to average daily traffic data from March and June of 2018. From the 2012 Visitor Survey, the Monument believes visitors spend about 30 minutes in the visitor center area before proceeding on to the dunes. Therefore, the visitor center parking turnover rate is two cars per space per hour. The congestion assessment team used this information to complete a parking lot demand analysis for the design of the parking lot during the upcoming Line Item Construction Project. Figure 5 displays the results, and the details are in the attachments. These numbers should be thought of as a range +/- 30% due to inconsistent data collection times and some assumptions. The Monument should consider updating the data used in this analysis to refine the parking demand.

Figure 5

WWSA Parking Demand Analysis					
Parking Demand					
	Current Conditions		10 Year Historic Growth		If NM becomes NP
Mar-18	62	Mar-28	87	91	
Jun-18	44	Jun-28	62	65	
Peak Day	111	Peak Day	155	235	
Parking Supply					
POVs					
South Parking Lot	14				
North Parking Lot	26				
Total Parking Spaces	40				
Parking Shortage					
	Current Conditions		10 Year Historic Growth		If NM becomes NP
Mar-18	22	Mar-28	47	51	
Jun-18	4	Jun-28	22	25	
Peak Day	71	Peak Day	115	195	

Due to traffic counter limitations, it is unknown how many large vehicle parking spaces are needed. The Monument is considering upgrading their traffic counters to provide vehicle classification information.

Recommendations for Congestion Management

NPS' Congestion Management Toolkit (www.nps.gov/transportation/pdfs/NPS-CMS_Toolkit.pdf) offers over 50 congestion mitigation tools specifically selected for NPS congestion conditions and concerns. Some tools are well-known (building parking, adding transit), other very effective tools are not as well known (managing circulation, posting traffic information on social media, special events management, etc.). This chart is designed to assist the monument to understand what tools would be effective based on the problems identified during the congestion assessment process. It also includes information important to help the monument understand key issues related to implementation of each tool. Below the chart is a reference table that provides details regarding cost and timeframes for implementing congestion tools. As recommendations from the congestion assessment, traffic safety study, and transportation and visitor distribution vision plan are implemented, the monument should think of transportation as an integrated system and the ripple effects actions will have across the system. Key contacts for additional information, potential funding resources technical support, and next steps are:

IMR Federal Lands Transportation Program Coordinator: Sena Wiley

Park Point of Contact for Project Implementation: Marie Sauter, Superintendent

CONGESTION MANAGEMENT TOOL (from NPS Congestion Management Toolkit)	WHAT SPECIFIC PARK PROBLEMS WOULD THIS TOOL ADDRESS?	COST/ TIMEFRAME	IMPLEMENTATION CONSIDERATIONS	IMPLEMENTATION NEXT STEPS
<p>PREPAYMENT OF ENTRANCE FEES AND TRANSIT FEES Prepayment of entrance fees and transit fees allows visitors to pay for entrance or transit fees prior to entering the park. Usually Prepayment is done online or at an automated fee machine (kiosk for self-paying fees) in the gateway community.</p>	<p>visitor experience park operations</p>	<p>Cost: \$0-\$50,000 Timeframe: Near Term</p>	<p>PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes Other: coordinate with Regional Transportation Coordinator and Regional Fee Manager</p>	<p>This tool may be beneficial for special events when there are long lines at the entrance station. Prepayment of entrance fees should be advertised at the monument visitor center, in the gateway communities, and on the Monument website and social media outlets. Currently, there are two options available to parks: Your Pass Now or Pay.gov Several parks use Your Pass Now including Grand Canyon, Glacier, and Yellowstone National Park. Rocky Mountain National Park uses Pay.Gov: Fees & Passes</p>
<p>SIGNAGE AND WAYFINDING Signage and wayfinding techniques guide visitors to their destinations and are particularly helpful in an unfamiliar environment.</p>	<p>visitor experience safety park operations</p>	<p>Cost: \$0-\$100,000 Timeframe: Immediate to Near Term</p>	<p>PMIS needed? Yes EA/EIS needed? No Suitable for a pilot project? Yes</p>	<p>Consider removing confusing signage at entrance. Use temporary sandwich boards during high visitation periods to direct visitors. Use signage to direct large vehicles to administrative area parking; consider pedestrian crossing back to VC complex.</p>
<p>511 TRAVELER INFORMATION NUMBER 511 is the Traveler Information Phone Number. 511 systems provide local traveler information such as traffic congestion, maintenance, construction, tourism, road conditions, and public transportation.</p>	<p>visitor experience safety park operations</p>	<p>Cost: \$0-\$50,000 Timeframe: Immediate to Near Term</p>	<p>PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes</p>	<p>New Mexico's 511 service is connected to NMROADS.COM. Currently there is a permanent alert on the service regarding the White Sands Missile Range military tests closures on US 70 but Monument closures are not included. The Monument should determine if information regarding the monument closures could be added.</p>
<p>DYNAMIC/VARIABLE MESSAGE SIGN Dynamic/Variable message signs (both portable and permanent) are used to provide en-route information and alerts to visitors.</p>	<p>visitor experience safety park operations</p>	<p>Cost: \$0-\$50,000 Timeframe: Immediate to Near Term</p>	<p>PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes</p>	<p>The Monument could use a variable message sign (VMS) during military test closures and other special events to provide visitor information regarding prepayment of entrance fees. There are two, existing, permanent VMSs providing information about road closures coming out of Las Cruces and Alamogordo. The Monument should determine if monument information could be added to the existing VMSs.</p>
<p>TRAVELER INFORMATION Utilize existing local hospitality services (e.g., website, hotels, and gateway communities) to provide information about congestion management for visitors and local residents.</p>	<p>visitor experience safety park operations</p>	<p>Cost: \$0-\$50,000 Timeframe: Immediate</p>	<p>PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes</p>	<p>Provide information regarding military test closures, special events, parking, prepayment of entrance fees at chamber of commerce, other visitor centers, local hotels in Las Cruces and Alamogordo, and at regional RV parks. Add talking points at particular times of year to social media and website alerts.</p>

<p><u>MEDIA/SOCIAL MEDIA/MOBILE DEVICE APPS</u> With smart phones rising in popularity, the use of social media (e.g., Facebook, YouTube, Twitter, Flickr, Tumblr, Instagram, blogs, and other programs) and mobile device apps have also become acceptable low cost ways to provide information.</p>	visitor experience safety park operations	Cost: \$0 - \$500,000 Timeframe: Immediate to Near Term	PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes	The Monument is currently using Facebook to warn visitors of military requested closures and high visitation periods. The Monument has a Twitter account but is not actively using it. The Monument could link their social media accounts using a social media management platform, such as HootSuite, to link their accounts for posts to appear on both platforms at once. Posts can also be scheduled in advance to be posted at times coordinated with special events. Consider using geofencing technology.
<p><u>PARTNERSHIPS, COLLABORATION, PUBLIC INVOLVEMENT, AND OUTREACH</u> There are many potential partners that parks/units can engage/outreach to in helping to solve transportation congestion problems. Includes NPS Rivers and Trails Conservation Assistance.</p>	visitor experience safety park operations	Cost: \$50,000 - \$500,000 Timeframe: Immediate to Near Term	PMIS needed? Maybe EA/EIS needed? Maybe Suitable for a pilot project? Yes Other: contact Regional Transportation Coordinator and Regional Fee Manager for more information	The Monument is currently partnering with NMDOT, White Sands Missile Range, NM State Police, Otero County Sherriff Department, and US Border Patrol to improve safety in, and around the Monument. These relationships are very important to the Monument and will continue. Other recommendations specifically discuss partnering with these other agencies. Consider partnering with organizations such as Good Sam.
<p><u>INCIDENT MANAGEMENT / SPECIAL EVENT MANAGMENT</u> Traffic incident management is about developing and implementing an incident management plan (this can also be used for special event management). This solution does not directly involve tangible hardware or infrastructure improvements, but is highly regarded method to integrate multiple operational tools that may involve Law Enforcement responsibilities.</p>	visitor experience safety park operations	Cost: \$50,000 - \$500,000 Timeframe: Near Term to Longer Term	PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes	During special events or large permitted events, the Monument develops an action plan with an incident commander. The Monument should continue this practice and consider implementing it during other high congestion periods (ex: Easter, special events and full moon nights.)
<p><u>PARKING MANAGEMENT AND PARKING AREA IMPROVEMENTS</u> Parking management is where visitors are informed that a parking lot is full in real time, either by person or via sign, and that they need to park elsewhere. Parking area improvements may include modifying the lot to decrease traffic conflicts and limiting the number of access points (entrances and exits).</p>	visitor experience safety park operations	Cost: \$50,000 - \$500,000 Timeframe: Near Term	PMIS needed? Yes EA/EIS needed? Maybe Suitable for a pilot project? Yes	The Monument should consider restriping the south parking lot. The Monument has considered multiple striping plans in the past but decided to keep the current configuration. If a new parking lot is developed for large vehicles, the Monument should consider eliminating large vehicle parking from the south parking lot. There is a Federal Highways RIP pavement preservation treatment scheduled for the Monument in 2024, and this would be an opportunity to restripe the existing parking lots.
<p><u>ENFORCEMENT/TRAFFIC MANAGEMENT</u> Specifying the road shoulder as a no-parking area through clear signing, striping, and/or additional enforcement will improve traffic flow and safety of the roadway.</p>	visitor experience safety park operations	Cost: \$100,000 – Over \$500,000 Timeframe: Near Term	PMIS needed? Maybe EA/EIS needed? Maybe Suitable for a pilot project? Yes	The entrance station kiosk area needs to be restriped to keep visitors moving. There are two kiosks, and visitors are confused as which one to approach, therefore cars stop at the intersection to determine next moves.

<p><u>SPEED MANAGEMENT</u> Speed management has three variations (1) increase compliance of existing posted speed limits, (2) reduce the maximum posted speed limit, and (3) implement a variable speed limit.</p>	safety	Cost: \$50,000 - \$500,000	PMIS needed? Maybe EA/EIS needed? Maybe Suitable for a pilot project? Yes	Speeding on the entrance road as visitors leave the monument is a safety issue. The Monument has placed rumble strips, speed humps, and speed radar to reduce speeds located in the paved section of Dunes Drive. The speed radar trailer is mobile and able to be relocated as needed. NMDOT has already added signs, blinking lights, speed radar signs on US 70.
<p><u>TRAFFIC MONITORING/DATA COLLECTION AND ANALYSIS</u> Data can be used to help a park/unit better understand their existing conditions and issues, and more precisely determine when, where and why congestion occurs.</p>	visitor experience safety park operations park facilities	Cost: \$0 - \$500,000	PMIS needed? Maybe EA/EIS needed? Maybe Suitable for a pilot project? Yes	To further understand parking lot demand, the number of large vehicles trying to monument should be determined with appropriate traffic counters placed at the south parking lot entrance. These counters would complement the existing traffic counters at the entrance and help determine vehicle classification system.
<p><u>EXPAND PARKING SUPPLY</u> Overflow parking on roadway shoulders and in “no parking” areas can be a source of congestion. In some cases, parking management and/or promoting the use of park and ride facilities can lessen this impact, but in others, the best option may be to increase parking supply.</p>	visitor experience safety park operations park facilities	Cost: \$100,000 – Over \$500,000	PMIS needed? Yes EA/EIS needed? Yes Suitable for a pilot project? Only if additional parking is unpaved	The Monument has an upcoming project to build a temporary parking area the Monument should consider for long term parking needs.
<p><u>VEHICLE USE RESTRICTIONS</u> Prohibiting or restricting certain vehicles (or certain sized vehicles) from areas in a park/unit can help improve traffic flow (reduce congestion), enhance visitor experience, and protect resources.</p>	visitor experience safety park operations	Cost: \$50,000 - \$100,000	PMIS needed? No EA/EIS needed? Maybe Suitable for a pilot project? Yes	The Monument should consider prohibiting large vehicles in the south parking area after the new parking area has been constructed. Large vehicles are restricted in the north parking lot, but the signage is difficult to see and therefore large vehicles park there. The Monument should consider new, larger signage and more highly visible sign locations. Occasionally bicyclists will park their vehicles in the historic district, and bike into the Monument. Large vehicles often unload their trailers in the historic district parking areas and drive into the monument. Both of these uses consume parking spots for many hours. As an alternative, these visitors could drive and park in the dunes area. With signage and visitor outreach, bicyclists and tractor trailer visitors could be discouraged from parking in the historic district.

<p><u>EXPAND OR IMPROVE BICYCLE/ PEDESTRIAN FACILITIES</u> Pedestrian and bicycle facilities allow visitors to travel to destinations by an alternate mode. Facilities could include widened road shoulders, a separated multi-use/non-motorized paved pathway, and unpaved trails and bike racks</p>	<p>visitor experience safety park operations park facilities</p>	<p>Cost: \$100,000 – Over \$500,000 Timeframe: Longer Term(6+ Years)</p>	<p>PMIS needed? Yes EA/EIS needed? Yes Suitable for a pilot project? No</p>	<p>When vehicles park in the administrative area, there are no defined pedestrian crossings to access the visitor center complex across the entrance road. The Monument could develop temporary crosswalk signage to be placed when the administrative area is used for overflow parking.</p>
<p><u>ADD ENTRANCE LANES/ STATIONS/BOOTHES</u> Adding entrance lanes/stations /booths would increase visitor throughput and decrease congestion and delay time.</p>	<p>visitor experience safety park operations park facilities</p>	<p>Cost: \$50,000 - \$500,000 Timeframe: Near Term</p>	<p>PMIS needed? Yes EA/EIS needed? Yes Suitable for a pilot project? Maybe</p>	<p>In the early 2000s, the entrance station was reconfigured to move it further away from historic district and add two traffic lanes. There is an unused iron ranger at the entrance station. The Monument should consider using it again. During special events and holidays, the Monument will open the middle lane to pre-purchased passes, or those re-entering with a register slip. The Monument should consider doing this more frequently if the Monument implements prepayment of entrance fees.</p>
<p><u>INTERSECTION IMPROVEMENTS (GEOMETRIC/ TRAFFIC CONTROL DEVICES)</u> Intersection improvements include two-way or yield control, multi-way stop control, roundabout, and signalization.</p>	<p>visitor experience safety park operations park facilities natural resources cultural resources</p>	<p>Cost: \$100,000 – Over \$500,000 Timeframe: Near Term to Longer Term</p>	<p>PMIS needed? Yes EA/EIS needed? No Suitable for a pilot project? No</p>	<p>Just beyond the entrance station kiosk there is a gate the monument closes during military test closures. When the gate is closed, there isn't enough space for a vehicle to safely turn around. The Monument should consider moving the gate to a more appropriate location to provide adequate turn around space.</p>
<p><u>INCREASE ROAD CAPACITY</u> Increasing roadway capacity can reduce congestion by increasing throughput, the space for vehicles, and by allowing space for vehicles to pass slow moving or turning vehicles. However, this tool should not be utilized purely for congestion management; it should be considered when the improvement also improves safety.</p>	<p>visitor experience safety park operations park facilities natural resources cultural resources</p>	<p>Cost: Over \$500,000 Timeframe: Longer Term (6+ Years)</p>	<p>PMIS needed? Yes EA/EIS needed? Maybe Suitable for a pilot project? No</p>	<p>The configuration of the historic district does not support current visitor use patterns. The distance from the monument entrance to the turn into the south parking lot does not allow enough space for stacking vehicles when the lot is congested. Monument staff believe a new entrance to the Monument should be developed to the east along US 70.</p>
<p><u>ACCELERATION/DECELERATION LANES</u> Acceleration/deceleration traffic lanes, also known as “climbing” or “passing” lanes allow faster moving vehicles to use a separate lane to pass slower vehicles.</p>	<p>visitor experience safety park operations park facilities natural resources cultural resources</p>	<p>Cost: \$50,000 - \$500,000 Timeframe: Near Term</p>	<p>PMIS needed? Yes EA/EIS needed? Maybe Suitable for a pilot project? Maybe</p>	<p>NMDOT has a project in 2019 to improve acceleration/deceleration lanes on US 70 to improve safety due to congestion backups from the Monument.</p>

Next Steps

Within 60 days of the final report, the Congestion Assessment team will meet with the monument point of contact and region to discuss how to implement the monument's high and medium priority congestion mitigation recommendations.

Monument support for development of PMIS statements, field support and testing, potential funding resources, data collection/analysis and other implementation activities is available from your regional transportation program coordinator. Technical assistance is available from NPS' Denver Service Center Transportation, FHWA's Federal Lands Highway Division, the Volpe National Transportation Systems Center, and/or private sector consultants.

Attachments:

Congestion Assessment Process and Participants

1960s Road and Parking Lot Designs

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

PMIS 250415 Construct Temporary Oversized Vehicle Parking & Associated Preliminary Designs

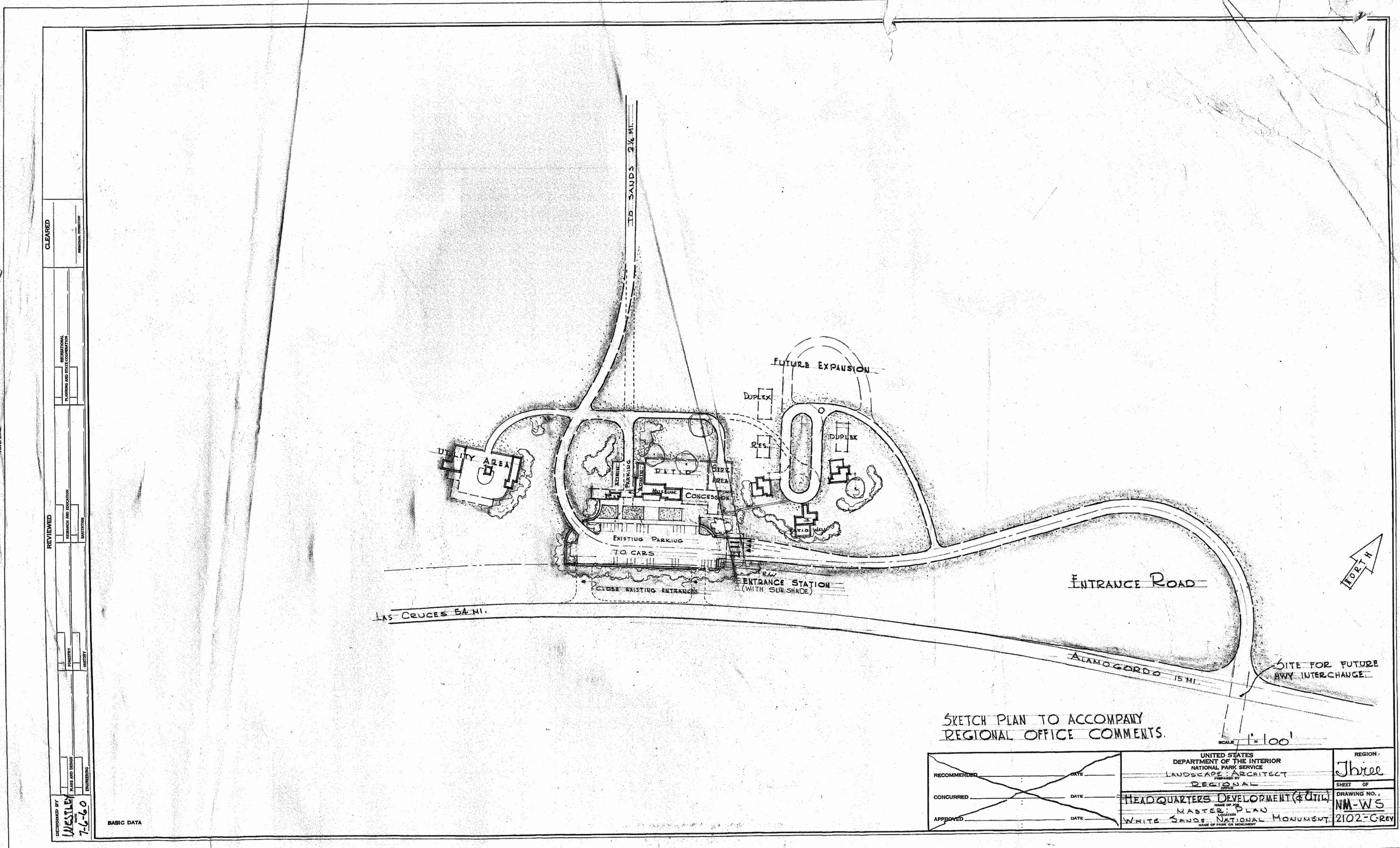
Parking Lot Demand Analysis

Congestion Assessment Process and Participants

The Congestion Assessment for MEVE was conducted in 2018, Erica Cole (IMR), Mark Holdeman (FHWA), and Laura Babcock (DSC) serving as the Congestion Assessment technical team and report authors. The Assessment included three conference calls/webinars with key members of the monument staff to briefly identify congestion problems, locations, severity of impacts, and potential solutions.

- Call #1 (06/18/18) Attendees: Marie Sauter, Superintendent; Aaron Summerlin, Chief Ranger; Laura Neilson, Facility Manager; Kelly Caroll, Chief of Interpretation; Daniel Crabb, Ranger; David Bustos, Law Enforcement Ranger; Robin Milne, Interpretive Ranger; Erica Cole, IMR Transportation Planner; Mark Holdeman, DSC Landscape Architect; Laura Babcock, DSC GIS Specialist
- Call #2 (07/24/18) Attendees: Marie Sauter, Superintendent; Aaron Summerlin, Chief Ranger; Laura Neilson, Facility Manager; Kelly Caroll, Chief of Interpretation; Daniel Crabb, Ranger; David Bustos, Law Enforcement Ranger; Robin Milne, Interpretive Ranger; Erica Cole, IMR Transportation Planner; Mark Holdeman, DSC Landscape Architect; Laura Babcock, DSC GIS Specialist

Call #3 – (09/06/18) Attendees: Marie Sauter, Superintendent; Aaron Summerlin, Chief Ranger; Laura Neilson, Facility Manager; Kelly Caroll, Chief of Interpretation; David Bustos, Law Enforcement Ranger; Robin Milne, Interpretive Ranger; Kim Hyatt, Historical Architect/Project Manager; Erica Cole, IMR Transportation Planner; Mark Holdeman, DSC Landscape Architect; Daniel Crabb, Ranger;



REVISIONS

REVIEWED	RESEARCH AND REVISION	RECREATIONAL PLANNING AND STATE COOPERATION	CLEARED
DESIGNED BY	LAND AND DESIGN	ENGINEERS	PERSONAL STRUCTURE

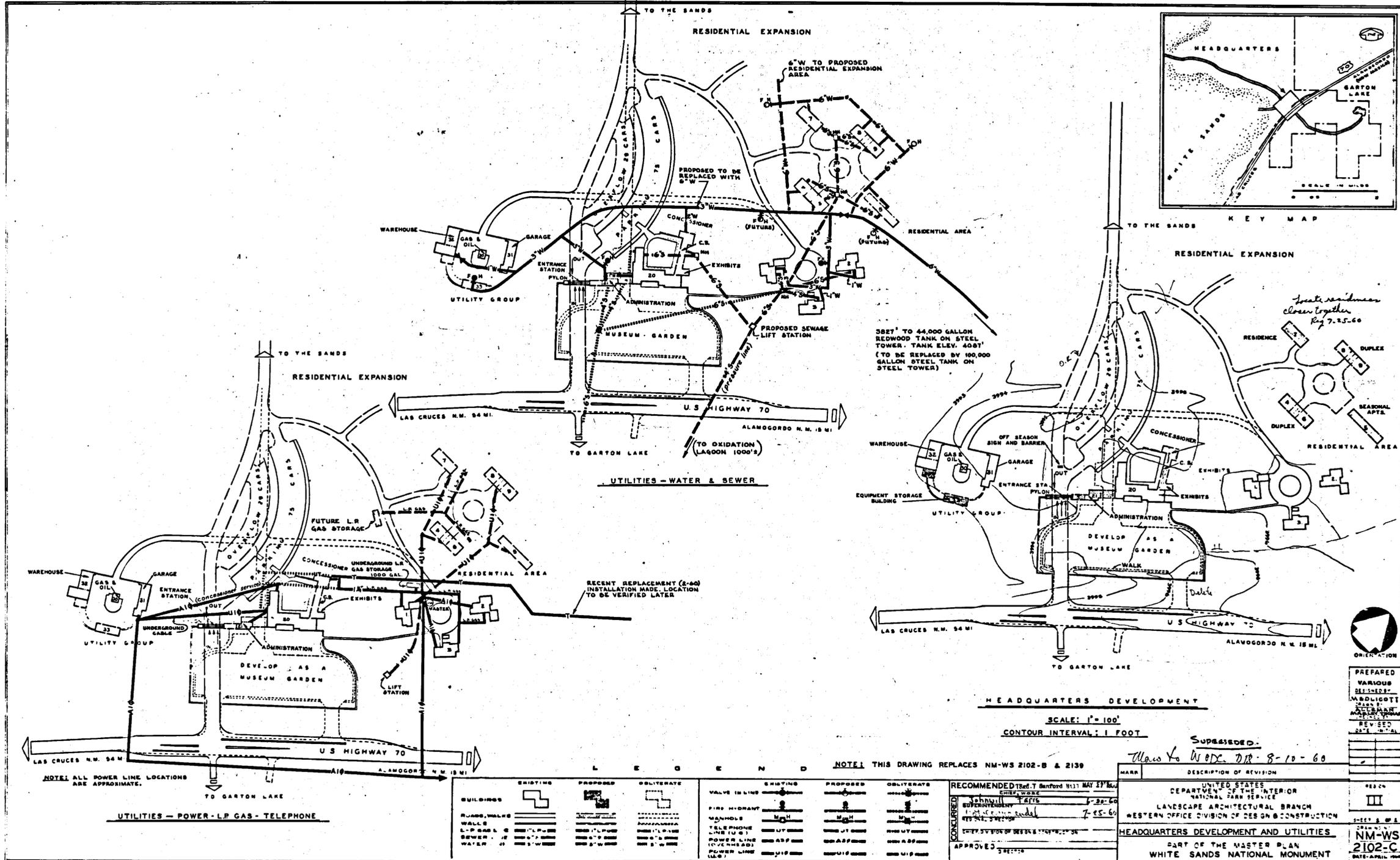
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BASIC DATA

SKETCH PLAN TO ACCOMPANY REGIONAL OFFICE COMMENTS.

RECOMMENDED _____ DATE _____ CONCURRED _____ DATE _____ APPROVED _____ DATE _____	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE LANDSCAPE ARCHITECT REGIONAL OFFICE	REGION / Three SHEET OF
	HEADQUARTERS DEVELOPMENT (4011) MASTER PLAN	DRAWING NO. / NM-W5
	WHITE SANDS NATIONAL MONUMENT <small>NAME OF PARK OR MONUMENT</small>	2102-CREV

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NOTE: ALL POWER LINE LOCATIONS ARE APPROXIMATE.

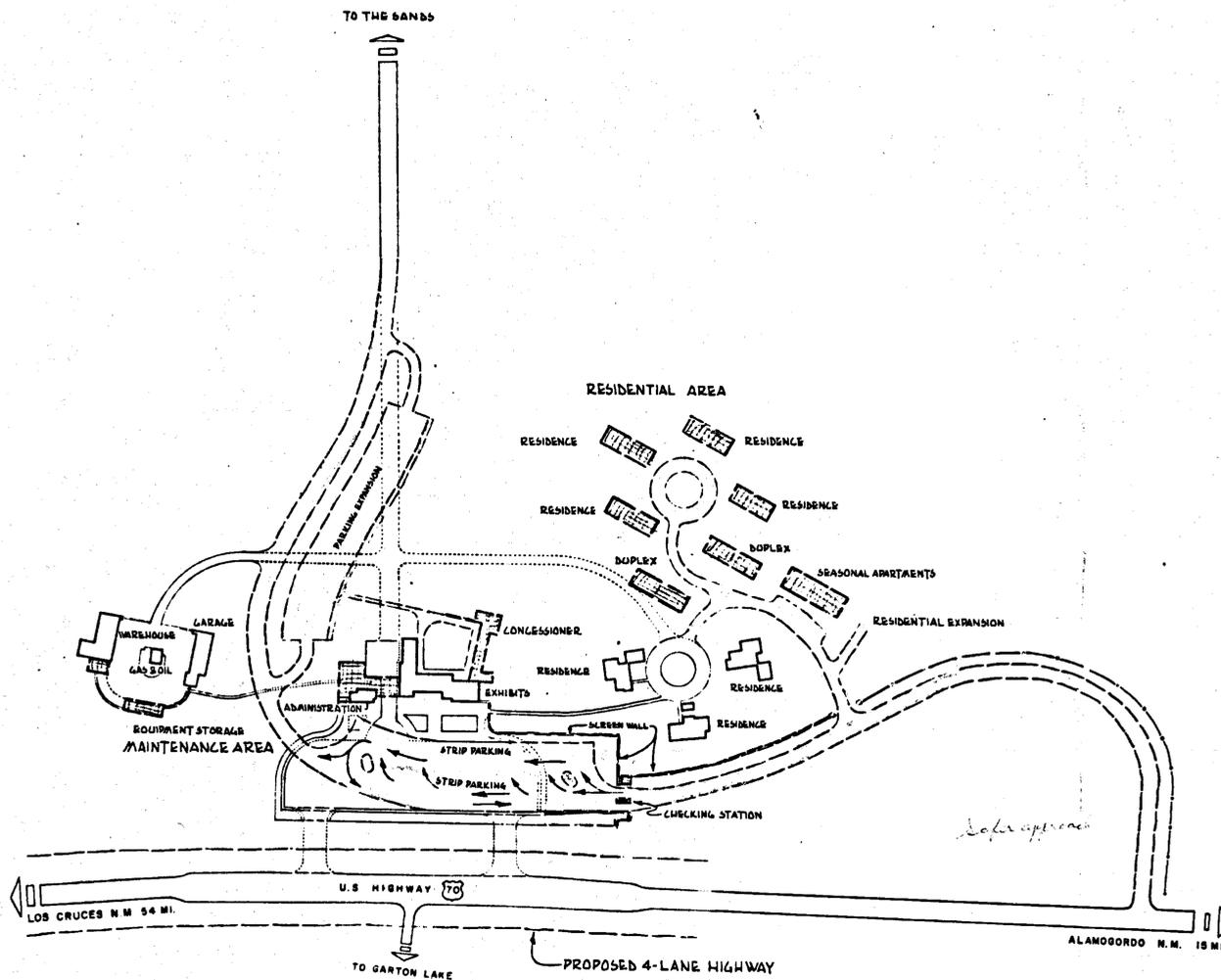
UTILITIES - POWER - LP GAS - TELEPHONE

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NOTE: THIS DRAWING REPLACES NM-WS 2102-B & 2139

RECOMMENDED	DATE	BY
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[Signature]	7-25-60	[Name]

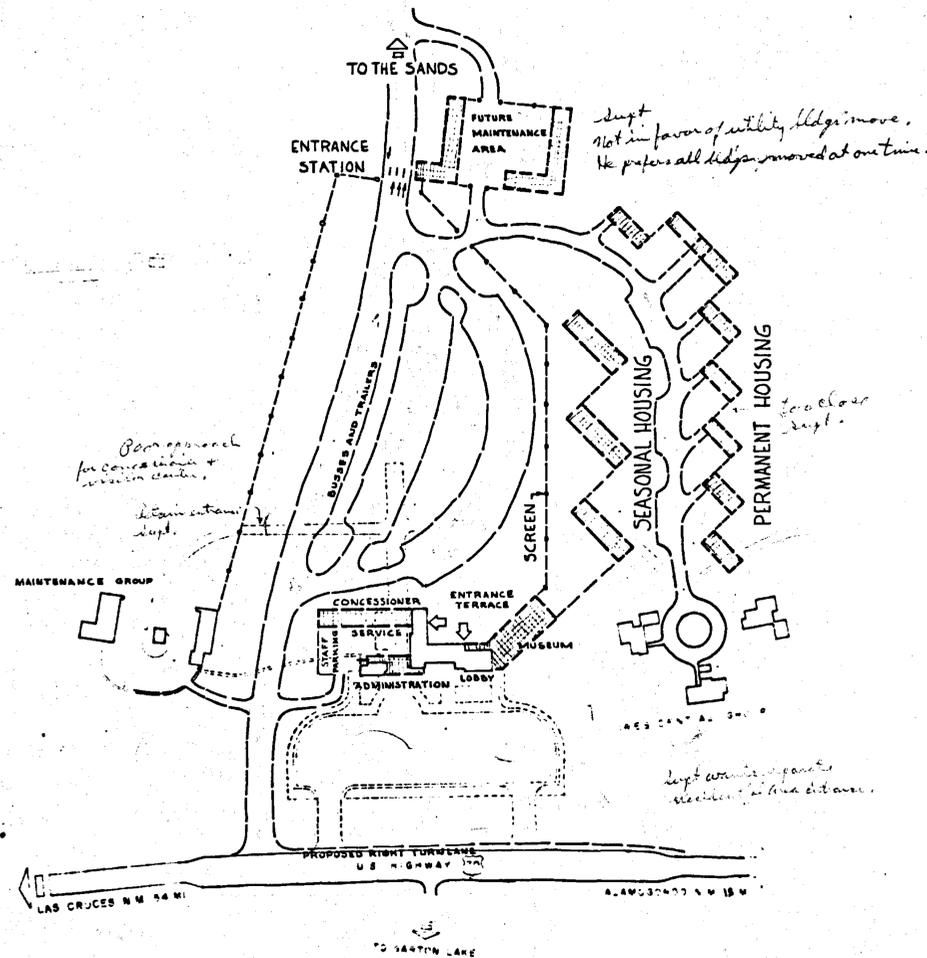
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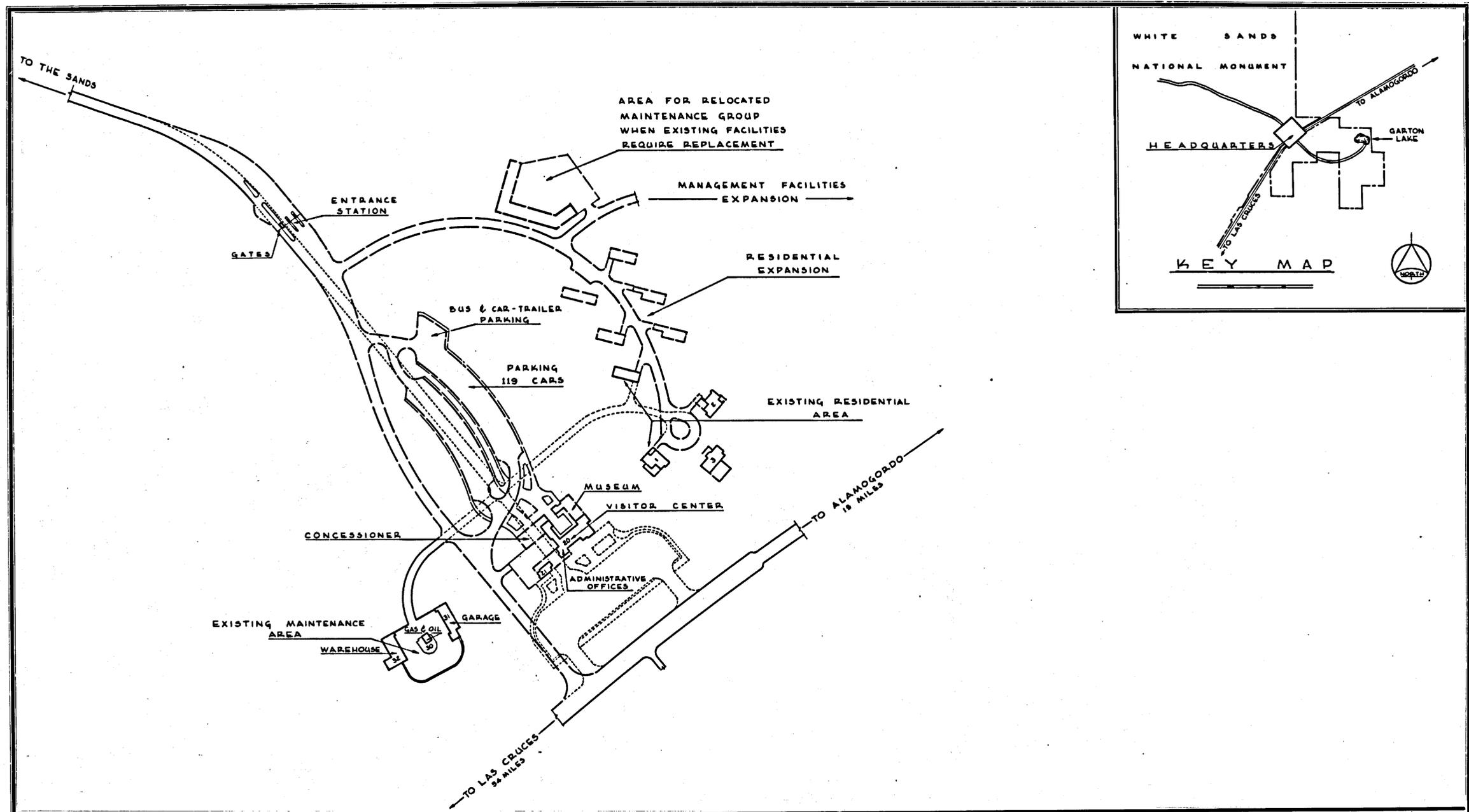
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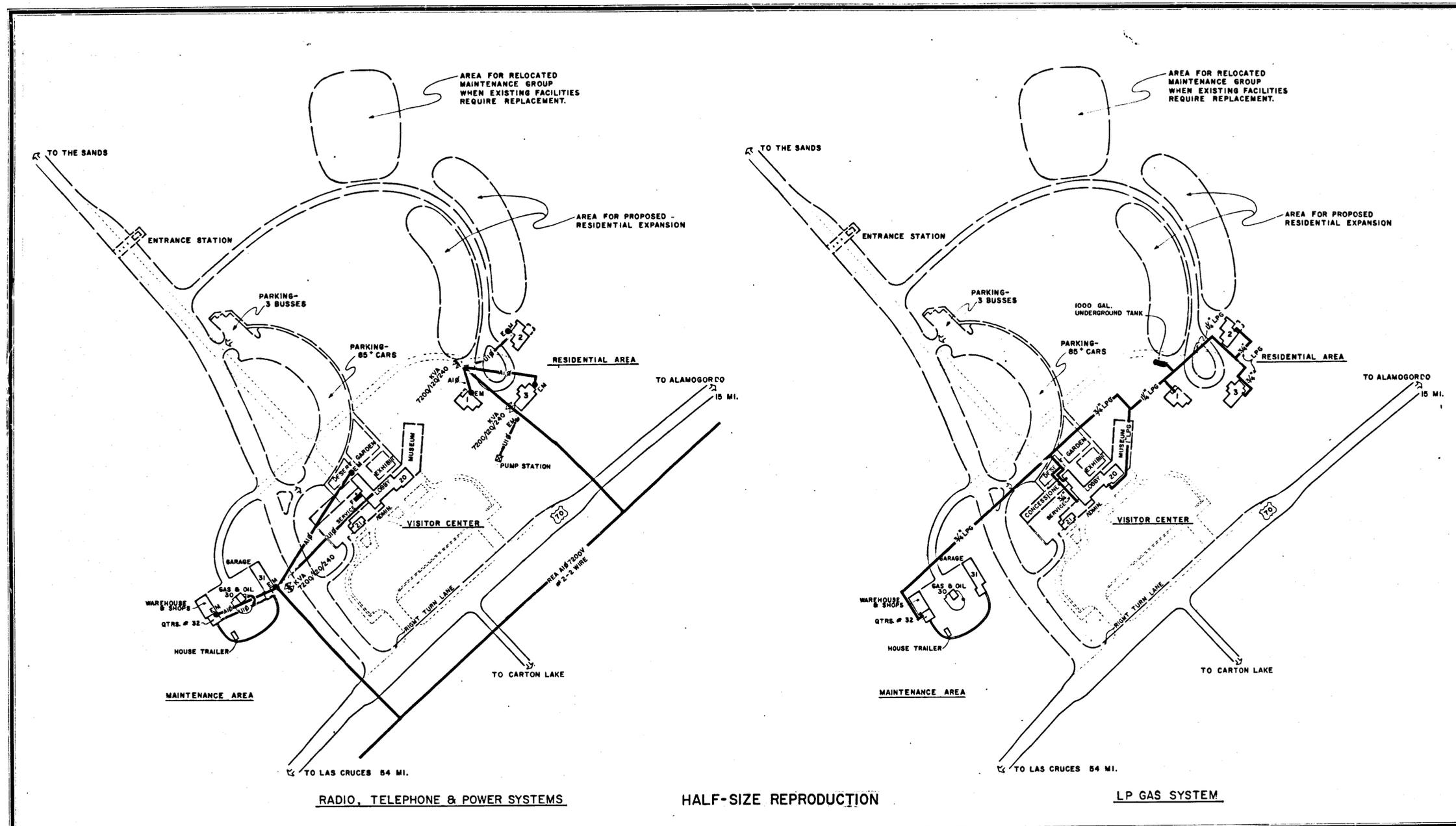


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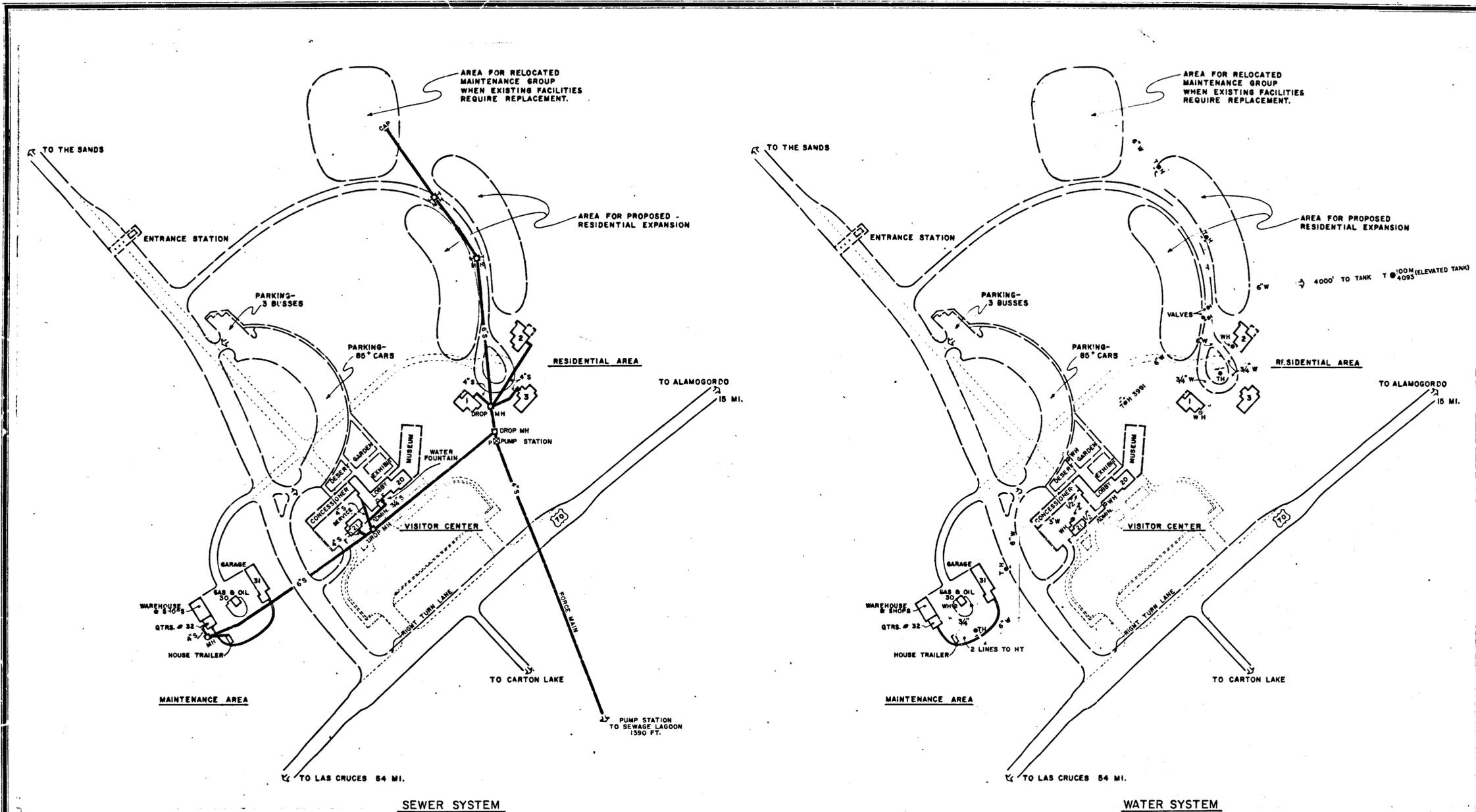
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PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

Project Identification - PMIS 223557	
Project Title: Upgrade Electrical Infrastructure and Consturct Visitor Center Restroom	Project Total Cost: \$2,664,589.22
Park/Unit: White Sands National Monument	Region: Intermountain
States: NM	Congressional District: NM02
Related Parent FMSS Work Order Number: 16301099	Reference Number: LIC FY23
Project Type: Facility , Historic , Imported from PST	Financial System Package Number: WHSA 223557
Contact Person: Laura Neilson	Contact Phone: 575-479-6124 x240
Project Status - PMIS 223557	
Date Imported: 06/24/15	Review Status: WASO-Reviewed on 03/09/2016
Date of Last Update: 11/13/17	Updated By: Katherine P. Lunsford
Project Narratives - PMIS 223557	
<p>Description</p> <p>This project will resolve problems with egress, accessibility, and the electrical system at the 1936 Works Progress Administration (WPA) Spanish Pueblo-Revival style visitor center, an 8,600 square foot (SF) adobe building listed on the National Register of Historic Places. Accessible egress hardware will be installed throughout the building, motorized operators will be installed at 5 pairs of exterior entrance doors, a new egress door will be added and an existing egress door will be widened. With the exception of the main electric service, meters, and some existing light fixtures, the entire electrical system will be removed and replaced, including replacing and consolidating the service equipment, panels, and subpanels; re-circuiting; and rewiring the entire building to provide adequate power distribution to meet present and future needs. Historic light fixtures and track lighting will be refurbished and reused in their existing locations. All other light fixtures will be replaced, using fixtures in keeping with the historic character of the building. Existing data/communications wiring (IT) and equipment will be removed and replaced to meet security requirements. New exit and emergency egress lighting will be provided, as well as a new security, fire detection and alarm system. The monument will evaluate adding a project to install a sprinkler system to enhance fire protection in the next 5 year plan. All wiring will be concealed in the adobe walls or the ceilings.</p> <p>Temporary visitor parking will be created north of the visitor center complex to offset lost parking during project.</p> <p>This project will construct a new accessible visitor center restroom. This includes wood frame construction of a 1,000 square foot structure providing 11 toilets, sinks, 3 urinals, and building systems. A fire protection system will be included, consisting of smoke and heat detection alarms and sprinklers. The new restroom will be located adjacent to the visitor center.</p>	
<p>Justifications</p> <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p><small>Background Information</small></p> <p><small>Project Description</small></p> <p><small>Justification</small></p> <p><small>Impact</small></p> <p><small>Conclusion</small></p> </div> <div style="flex: 2;">  </div> </div> <p>The Visitor Center is the first stop for most park visitors and experiences over 497,506 (2015) visitors annually. The VC is a multipurpose facility providing offices for eight park employees, two Western National Parks Association</p>	

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

employees, and six volunteers. In addition, the VC houses the museum, bookstore and theatre and the monument concessionaire is located in the complex, with gift shop, limited food service and warehouse.

The building does not conform to egress, accessibility, and electrical system requirements of the International Building Code, the Life Safety Code (NFPA 101), the Architectural Barriers Act Accessibility Standards (ABAAS), and the National Electric Code (NEC), nor to NPS sustainability and data/communications security requirements. The building is not accessible to persons with disabilities. The two main visitor center doors lack code-compliant hardware. There is not a code-compliant means of egress from a storage area and there is no functional exit or emergency egress lighting in the building.

The electrical system, wiring and equipment, has been supplemented with more modern wiring and equipment installed in a piecemeal fashion over the years. The electrical system is poorly constructed, illogical, complex, disjointed, and inadequately integrated into the historic fabric of the building. Problems include safety issues and excessive maintenance due to shorting and failure original wiring and devices; overloaded circuits resulting in frequently tripped breakers; insufficient grounding and ground fault circuit interruption protection; power, lighting, and data/communications systems that do not meet current needs, energy efficiency or security requirements, and poor controls.

The building does not have a security system, or fire detection and notification system. The installation of a security system will provide protection of the building, historic contents, visitors and employees.

Unless the work of this project is completed, the building will continue to have code, life safety, and accessibility deficiencies, and functional/safety problems with the electrical system that will continue to impact visitors and other building users, maintenance staff, and building operations. Deferred maintenance of the building will continue to grow, threatening the integrity of the historic fabric. See attached report, WHSA Electrical Trip Report 11-20-15 revision.pdf.

A new comfort station is needed to provide for adequate facilities for the over 500000 annual visitors. The visitor center restrooms are the only publicly available flush toilets and running water available in the monument. The restrooms will meet be accessibility requirements to visitors with disabilities under Architectural Barriers Act Accessibility Standards (ABAAS). Currently, the restroom facility available at the visitor center is too small to meet modern demands and is not ABAAS compliant. Expanding the restroom facilities within the existing building or building an addition are both impractical due to space restrictions and the need to preserve its historic fabric.

The restroom facility is also justified and needed to accommodate large numbers of visitors during special events and missile tests. A line of 10-30 people forms outside of the restrooms during these frequent events. During missile tests, White Sands Missile Range closes US Highway 70 and the visitors are required to stop at the visitor center while they wait for both the highway and the rest of the park to re-open. In addition, non-park travelers frequent the restrooms as they cross US 70. This concentration of visitors results in the restrooms being overwhelmed, causing substantial lines to form outside of the restrooms. Visitor satisfaction with the current restrooms is not acceptable, as measured by annual surveys. Out of all the park facilities and visitor services, the current restrooms receive the most complaints from visitors. In 2010, visitor satisfaction with the restrooms was rated at 63%, and in 2015, remains at 63% falling short of park GPRA goals.

"Reduce the footprint" requirement: With the addition of the new restroom facility, the net increase of square footage of the monument will be 1,000 square feet. The existing restroom will be repurposed into a visitor contact area and will not be demolished. The existing restroom is a contributing feature to the Historic District and the Visitor Center complex which is eligible for the National Register of Historic Places.

This sustainable project would decrease annual utility costs through installation of efficient building systems and reduce annual water consumption with the installation of water conserving fixtures.

Measurable Results

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

This project would reduce the deferred maintenance of the visitor center complex building, and would bring the structure into compliance with building code, life safety, egress, accessibility, sustainability and security requirements, to meet the present and future needs for the safe use and operation of the building as required in the International Building Code, the Life Safety Code (NFPA 101), the Architectural Barriers Act Accessibility Standards (ABAAS), and the National Electric Code (NEC).

This project would bring the visitor center complex in to compliance with NPS sustainability and data/communications security requirements.

This project will result in the construction of new visitor center men's and women's restrooms. The Monument would provide appropriately sized, fully accessible modern restrooms to the public (meeting the Architectural Barriers Act Accessibility Standards), and improve the visitor experience.

This project will improve visitor satisfaction and the monument would no longer be adversely affected by the restroom facilities. The monument expects visitor satisfaction score for restrooms to improve to 75%.

Energy efficiency would produce an annual savings of approximately \$1,000.00. Low flush toilets would save a minimum of 2 gallons per flush. With an annual average of 497,506 visitors a water conservation savings of approximately 500,000 gallons would be achieved annually.

For the first time in history the Monument would be able to provide the only fully accessible restrooms with running water available to the public.

DOI Attachment G Justifications - PMIS 223557

Scope of Benefits

1. Freeze the Footprint – the footprint of the complex will be increased by 1,000 sq. ft. with the construction of an accessible (ADA compliant) restroom.
2. Climate Change – VC upgrades will facilitate a better visitor experience with exhibits and interpretive programs on climate change effects specifically temperature and precipitation shifts beyond the historical range of variability.
3. Accessibility – the project will construct accessible restrooms & correct Visitor Center accessibility issues to comply with ABAAS standards.
4. Deferred Maintenance – The project will cure \$293,000 in deferred maintenance.
5. Health and Safety – A fire detection, alarm system and egress lighting will be installed.
6. Dark Night Sky, Natural Sound, etc. – Building exterior lighting will comply with NM dark night skies.
7. Sustainability- Sustainable construction techniques will minimize maintenance requirements and maximize life of building components. In the new restrooms, low water consumption toilets, waterless urinals, high efficiency hand dryers and sky lights will be installed.
8. Benefit to Visitor(s) and Direct Visitor Connection(s). This project improves the sole visitor center facility at the park that experiences over 497,506 annual visits. The health/life/safety factors will be greatly improved and the visitors will have a safer experience. Visitors will enjoy a new adequate and compliant restroom facility with the only running water in the monument.

Investment Strategy

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

1. Change in Operations and Maintenance - Total Cost of Facility Ownership will be reduced by: decreased maintenance costs realized through sustainable construction, component renewal, energy savings, and reduction in water consumption.
2. Square Footage Reduction – is planned to increase by 1,000 sq. ft. however the cost to maintain the facility will decrease.
3. Efficiencies within Operations – operational costs are expected to decrease as a result of savings realized through energy efficiencies and reduction in water usage. FTE dedicated to the facility will remain unchanged.
4. Leveraging a Larger Project – Contract savings will be realized by combining the building improvements with the addition of the restroom facility.
5. High Priority Assets – the Visitor Center complex is in optimizer band 1 thus is among the highest priority assets of the park. The (1936 constructed) visitor center building and complex are major contributing features on the National Register of Historic Places. The complex is one of the best examples of WPA construction in the Tularosa Basin.
6. Partnering or Partnership(s) - The visitor center complex houses the Western National Parks Association employees, association bookstore, and concessions facilities.
7. Cite Previous NPS Investments – Repair Interpretive Exhibits (PMIS 211047, 146174), Replace VC HVAC System (PMIS 162146), New Park Film (154964), Historic District Repairs/Restorations/Improvements (PMIS 54906)

Consequence of Failure to Act

1. Electrical system will continue to violate IBC code and present safety issues to employees who must service these lines and visitors due to poor egress in case of fire.
2. Impacts to Resources – The building is on the National Register of Historic Places. The fire detection system will serve to protect the facility and the correcting the deferred maintenance issues with preserve the historic structure.
3. Code Compliance – Once the project is complete the building will conform to egress, accessibility, and electrical system requirements of the International Building Code, the Life Safety Code (NPFA 101), the Architectural Barriers Act Accessibility Standards (ABAAS), and the National Electric Code (NEC).
4. Convey a Message of Balancing Risk – The project will significantly reduce the risk of fire due to the antiquated electrical system and egress risk in the event of a fire.
5. System Failure if Current Investment is not Complete – Critical improvement will be completed that will correct degradation issues of the historic structure. Electric systems issues are considered critical and correction will prevent electrical system failures and potential fire hazard.

Categories of Facilities Maintenance and Construction Needs - PMIS 223557

Capital Improvement Strategy Score: 742				Project Total DOI Score: 74.20	
CIS Element	Weighted Score	Percentage	Final Score		
Financial Sustainability	829	50%	415		Final Score
Visitor Use	805	30%	242	FCI/API	39.96
Resource	488	15%	73	Scope of Benefits	16.04
				Investment Strategy	17.45
				Consequences of Failure to Act	0.75

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

Protection			
Health and Safety	233	5%	12

Capital Asset Accounting Determination Results Summary - PMIS 223557

Facility (FMSS Location)	Historic Status	LCS	Legal Interest	Location Status	Asset Code / Facility Type	Work Type / Sub Work Type	Estimated Project Cost Distribution	Project Type
[109449] VC Concessions Gift Shop	5 - Not Evaluated		Owned	OPERATING	4100 - Building4129 - Other Institutional Uses	CI / LMFS (7.8%) FM / CRDM (63.3%) FM / DM (1.2%) FM / LMCO (5.2%) FM / RMDM (22.5%)	\$258,000.55 (9.7%)	A - Capitalized Asset
[113829] Historic Grounds	5 - Not Evaluated		Owned	OPERATING	3100 - Maintained Landscape3110 - Maintained Landscapes	FM / LMCO (100%)	\$13,369.76 (0.5%)	X - Non-Capitalized Asset
[236663] New VC Restroom Building Non-Historic	5 - Not Evaluated		Owned	PLANNED	4100 - Building4124 - Comfort Station	CI / EP (9.8%) CI / LMCO (16.2%) CI / NC (74.0%)	\$787,291.32 (29.5%)	A - Capitalized Asset
[24691] Visitors Center Building #20 - Historic	2 - National Register Listed	22642	Owned	OPERATING	4100 - Building4129 - Other Institutional Uses	CI / AL (1.0%) CI / LMCO (12.8%) CI / LMCO (0.8%) FM / CRDM (12.5%) FM / DM (31.3%)	\$1,569,596.47 (58.9%)	H - Heritage Asset

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

						FM / LMCO (31.0%) FM / LMFS (0.5%) FM / LMLS (6.9%) FM / RMDM (3.2%)		
[36063] VC Restroom Building # 21 - Historic	2 - National Register Listed	22643	Owned	OPERATING	4100 - Building4124 - Comfort Station	FM / DM (100%)	\$36,331.12 (1.4%)	H - Heritage Asset

Project Activities, Assets, Emphasis Areas - PMIS 223557

<p>Activities</p> <ul style="list-style-type: none"> • Capital Improvement • Construction • Compliance • Maintenance • Occupational Safety and Health • Preservation • Prevention • Protection • Rehabilitation • Removal • Structural Fire • Provide Visitor Services/Activities • Visitor Use Management 	<p>Assets</p> <ul style="list-style-type: none"> • Maintained Landscape • Building
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<p>Emphasis Areas</p> <ul style="list-style-type: none"> • Accessibility Compliance • Security Enhancement • A Call to Action: Preserving America’s Special Places • Deferred Maintenance • Health and Safety • Structural Fire Safety • Sustainability • Vanishing Treasures 	<p>Resources</p> <ul style="list-style-type: none"> • Fire Suppression System • Historic Structure • IT Application System
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Project Prioritization Information - PMIS 223557

Unit Priority: 1 out of 64 **IN FY 2018**

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

Project Assistance Needs - PMIS 223557	
<p>Is Assistance Needed: Yes [From Region] Yes [From Service Center]</p> <p>Project Assistance Needed in the Following Areas:</p> <ul style="list-style-type: none"> • Architectural and Engineering Services • Compliance • Project Management/Coordination • On-site Inspection /COTR • Contracting 	
Related OFS Funding Requests- PMIS 223557	
Request ID: 10562	Request title: Improve Maintenance and Safety Capabilities
Request ID: 26168	Request title: Improve resource protection, stewardship and operations at White Sands NM in preparation for the next 25 years
Request ID: 33039	Request title: Support Mission Critical Operations in Preparation for the Next 25 Years
Project Funding Component - PMIS 223557A	
Funding Component Title: Upgrade Electrical Infrastructure And Build New VC Restroom	Funding Component Request Amount: \$2,664,589.22
Funding Component Reference Number (Multi-purpose): 2023-20	Funding Component Type: Non-recurring
Funding Component Description: This component represents work covered by child work orders of FMSS Parent WO 16301099 with target start dates in FY 2019.	
Image Link (NPGallery Digital Asset Management System):	
	
Initial Planned FY: 2019	Requested Funding FY: 2023
Review Status: WASO-reviewed on 03/09/2016	
Date of Park Submission: 01/22/2016	Submitted By: Laura Neilson (Lneilson@Nps.Doi.Net)
Upper-level Review Status:	Fee-demo Submission Number:
Formulated FY: 2023	Funded FY:
Formulated Amount: \$2,665,000.00	Funded Amount:
Formulated Funding Source: Line Item Construction	Funded Funding Source:

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

Formulated Program: 5 Year Plan **Funded PWE Accounts:**

Youth Participation Summary

Project activities related to engaging individuals 35 years or younger in resource stewardship through education, volunteer and employment opportunities.

Planned Total Number of Youth Volunteers	Planned Total Number of Youth Employed	Planned Total Number of Youth Engaged
0	0	0

Related PEPC Information

Related PEPC Project Number	Compliance Status	Expected Compliance Date
35705	Closed Complete	
61431	In Process	
62351	Proposed	
62831	Proposed	
62832	Proposed	

Component Cost Estimates

Labor Cost Type: Contract

Estimated By: Imported From PST **Date of Estimate:** 01/01/2012

Estimate in 2012 dollars **Class of Estimate:** C

Cost Center: WHSAM0 - WHSA MAINTENANCE

Item	Description	Qty	Unit	Unit Cost	Item Cost
Estimated Labor Cost	Imported from PST	1	Lump	\$601,093.51	\$601,093.51
Estimated Material Cost	Imported from PST	1	Lump	\$806,323.21	\$806,323.21
Estimated Equipment/Tool Cost	Imported from PST	1	Lump	\$59,419.16	\$59,419.16
Estimated Service Cost	Imported from PST	1	Lump	\$0.00	\$0.00
Component Net Cost					\$1,466,835.88

Escalation Adjustments

Item	Description	Item Cost
Escalation 4% per year		\$791,290.57
Net Cost Estimate (Escalated)		\$2,258,126.45

Grossing Adjustments

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

Item	Description	Item Cost
Compliance Max of 5% of Total Project Net Cost (Escalated) (\$112,906.32)	Updated as (0%) of Project Net Construction (Escalated)	\$0.00
Pre-design Max of 5% of Total Project Net Cost (Escalated) (\$112,906.32)	Updated as (0%) of Project Net Construction (Escalated)	\$0.00
Final Design Max of 10% of Total Project Net Cost (Escalated) (\$225,812.65)	Updated as (0%) of Project Net Construction (Escalated)	\$0.00
Supplemental Services Max of 2% of Total Project Net Cost (Escalated) (\$45,162.53)	Updated as (0%) of Project Net Construction (Escalated)	\$0.00
Project Management Max of 8% of Component Net Cost (Escalated) (\$180,650.12)	Updated as (8%) of Component Net Construction (Escalated)	\$180,650.12
Construction Contingency Max of 10% of Component Net Cost (Escalated) (\$225,812.65)	Updated as (10%) of Component Net Construction (Escalated)	\$225,812.65
Component Funding Request (Net Cost Estimate Escalated + Total Add-on Amount)		\$2,664,589.22

Eligible Funding Sources and Funding Priorities

Funding Category	Priorities by Eligible Funding Sources			
	Funding Source	Unit Relative Priority	Regional Priority	National Priority
Line Item Construction	Regional Facility Project Support	1 of 1		
	Line Item Construction	1 of 1		
	LIC Demolition and Disposal	1 of 1		

Line Item Construction CBA Factors - PMIS 223557A [Total Importance of Advantages: 1385] [Advantage to Cost Ratio: 5.19779930657]

API value [1 - 100]: 40
 Current Average FCI value of all assets: 1
 Projected Average FCI value of all assets: 1
 Current Annual Operating Cost: 10000
 Projected Annual Operating Cost: 8000

Factor: Provide Safe Visits and Working Conditions
 [Importance of Advantage score: 400]

The 8,600 square foot adobe construction Spanish Pueblo-revival style building serves as the only park visitor center. The multipurpose facility includes museum, cooperating association bookstore, theatre, the monument concessionaire and employees, and offices for eight park employees, up to 8 volunteers, two Western National Parks Association employees. The Works Progress Administration(WPA)building does not conform to egress and electrical system requirements of the International Building Code, Architectural

Barriers Act Accessibility Standards (ABAAS), the Life Safety Code (NFPA 101), and the National Electric Code (NEC). The building does not meet NPS sustainability and data/communications security requirements. There is not a code-compliant means of egress from a storage area and there is no functional exit or emergency egress lighting in the building. The building does not have a security system, or fire detection and notification system. Several electrical system issues identified by J. Buller, Electrical Engineer, IMRO present a fire hazard along with the lack of a fire detection system further complicates the safety hazard (reference attached 11/20/2015 trip report).

The existing historic restrooms were designed for about 50,000 annual visitors. The monument currently has about 497,506 or 10 times the number. A new restroom project has been recommended in various planning books for several decades. The monument has been able to secure portable restrooms from a neighboring agency which the staff opens on occasions when the historic restrooms are out of commissions and during peak visitation. These portable restrooms are not plumbed into the ground plumbing system and must be pumped every few days during heavy use. This is not the cost efficient long term solution.

The project will correct the electrical and life safety code deficiencies. These corrections along with the installation of a fire detection system will improve the safety of the building and facilities. The entire park staff and the 497,506 annual Visitor Center visitors are affected.

Factor: Protect Natural and Cultural Resources
[Importance of Advantage Score: 250]

This project focuses on a facility that is listed on the National Register of Historic Places and is surrounded by other historic structures on the List of Classified Structures (LCS). The complex is one of the best examples of Works Progress Administration (WPA) Spanish Pueblo-Revival style construction in the Tularosa Basin. The prominent natural resource is the white gypsum sand dunes, the largest in the world. In the Chihuahuan Desert within the Tularosa Basin the dunefield is home to endemic species and Pleistocene fauna trackways found in abundance. Within the dunefield have been discovered 2000-5000 year old hearth mounds created by large roasting pits found nowhere else in the world. The landscape is spectacular and a photographers destination.

The exhibits describing the new science and evolving understanding of the latest discoveries are located within the historic visitor center. The interpretive and educational programs provided within the VC educate the public regarding the protection of the natural resources and cultural resources throughout the monument. Interpretive programs include climate change and the influence of temperature and precipitation shifts on natural resources and the potential impact of change on the dunefield. The monument is a world class destination for National Park Service visitors.

Without the correction of the fire hazard, the historic adobe building is in jeopardy. An electrical fire could occur at any time, and if a fire does occur the historical resource could be lost or severely damaged. The project would eliminate the threat of the electrical fire and the threat of electrocution. The security system would protect the historic artifacts stored in the facility.

Building exterior lighting will be compliant with New Mexico dark night sky standards

Factor: Improve Visitor Enjoyment Through Better Service and Educational and Recreational Opportunities
[Importance of Advantage Score: 260]

PMIS 223557 Upgrade Electrical Infrastructure and Construct Visitor Center Restrooms

The VC building does not conform to accessibility standards of the Architectural Barriers Act Accessibility Standards (ABAAS). The building is not accessible to persons with disabilities. The two main visitor center doors lack code-compliant hardware. The 1936 era VC restroom built for about 50,000 annual visitors, is not accessible and too small to meet the demand of the annual park visitation of over ½ million resulting in lines up to 30 people long. Pressure on restroom facilities is the greatest during peak season, special events and during missile tests. Missile tests at the White Sands Missile Range are conducted by the U.S. Army and are a popular event for visitors. This is the only restroom facility at the monument providing flush toilets and running water for park visitors.

The Visitor Center upgrades and improvements realized in this project will relieve congestion and improve visitor educational opportunities through interpretive programs and exhibits.

A separate restroom facility is necessary due to space restrictions and preservation of the historic features of the Visitor Center. The new facility will correct all accessibility issues. The appropriately sized accessible restroom facility will meet the needs of the visitor. Visitation is rising and the entire park staff along with the 500,000+ annual visitors is affected.

Factor: Improve The Efficiency, Reliability And Sustainability Of Park Operations
[Importance of Advantage Score: 450]

Total Cost of Facility Ownership will be reduced by decreased maintenance costs realized through sustainable construction and component renewal. Operational costs are expected to decrease as a result of savings realized through energy efficiencies, a new electrical system and reduction in water usage. FTE dedicated to the facility will remain unchanged. Sustainable construction techniques will minimize maintenance requirements and maximize life of building components. In the new restrooms, low water consumption toilets, waterless urinals, high efficiency hand dryers and sky lights will be installed. The project is expected to conserve 2,000 gallons of water annually. Staff time formally required to maintain the structures in emergency repairs will be restored to other priorities. The project will cure \$293,000 in deferred maintenance. Financial savings will be redirected to other park mission needs.

A new restroom project has been recommended for several decades. The monument has secured portable restrooms on loan from a neighboring federal agency which are used when the historic restrooms are out of commissions and during peak visitation. These portable restrooms are not adequate for large crowds, are not plumbed into the ground plumbing system and must be pumped every few days during heavy use. This is not the cost efficient long term solution.

Factor: Provide Cost-effective, Environmentally Responsible, and otherwise Beneficial Development for the National Park System
[Importance of Advantage Score: 25]

This project supports a National Park Service goal to preserve historic assets and structures. A fine example of Works Progress Administration Spanish Pueblo-Revival architectural design and construction in the Tularosa Basin, the visitor center complex and adjacent historic structures will remain intact and better preserved for safety and historic significance, meeting the Secretary of Interior Standards for Historic Preservation. Visitors will continue to enjoy the experience of entering a functioning historic adobe building in an era when such historic structures difficult to maintain are often neglected and left to deteriorate.

The project supports a cooperative effort with the U.S. Army White Sands Missile Range which is documented under an interagency agreement in place since the mid-1970s. Under this agreement, the monument provides support for the missile range during tests and manages visitors as well as travelers on US Highway 70 who are stopped during missile launches and other tests. Many travelers and visitors spend that time in the visitor center complex during the road blocks and will thus be better served.

Sustainable construction techniques provide illustration that the NPS is a leader in environmental friendly design. In addition, the new construction will be designed to blend into the historic district and has support from the New Mexico State Historic Preservation Office through Section 106 consultation.

The National Park Service would come into national code compliance. Upon completion, the buildings will conform to egress, accessibility, and electrical system requirements of the International Building Code, the Life Safety Code (NFPA 101), the Architectural Barriers Act Accessibility Standards (ABAAS), and the National Electric Code (NEC).

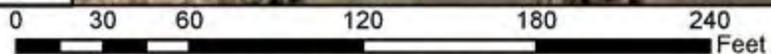
Component Completion Report

Component Start Date:	Component Completion Date:
Completion Report Date:	Created By:
Change in Condition:	Report Last Updated By:
As Built Drawing or Report Number:	As Built Drawing or Report Title:
Location of Original As Built Drawing or Report:	As Built Drawing or Report Author:
Superintendent Approval Date:	Superintendent Certification:
Brief Quantified Description of Final Product/Outcome:	



Legend

 Proposed Parking Area



1:750

PMIS 250415 Construct Temporary Oversized Vehicle Parking & Associated Preliminary Designs

Project Identification - PMIS 250415				
Project Title: Construct Temporary Oversized Vehicle Parking			Project Total Cost: \$130,737.04	
Park/Unit: White Sands National Monument			Region: Intermountain	
States: NM			Congressional District: NM02	
Related Parent FMSS Work Order Number: 20657533			Reference Number:	
Project Type: Facility , Non-historic , Imported from PST			Financial System Package Number: WHSA 250415	
Contact Person: Laura Neislon			Contact Phone: 575-479-6124 x240	
Project Status - PMIS 250415				
Date Imported: 01/19/18			Review Status: Region-Reviewed on 03/19/2018	
Date of Last Update: 03/01/18			Updated By: Marie Sauter	
Project Narratives - PMIS 250415				
Description				
<p>Construct new temporary oversized vehicle parking lot adjacent to the visitor center and gift shop area. Parking lot will accommodate vehicles during 9 month renovation project of the visitor center and gift shop. Exiting parking lots will be used for construction vehicles, and temporary trailers housing the visitor center, gift shop and restrooms.</p> <p>Grade brush to create a 1 acre oversized temporary parking area which will hold up to 20 large RV units and 50 passenger vehicles.</p>				
Justifications				
<p>Temporary visitor parking will be created north of the visitor center complex to offset lost parking lot areas during project. Monument has no other parking areas which will accommodate visitor parking.</p>				
Measurable Results				
<p>The temporary parking will give full park access and enjoyment to all visitors regardless of the size of vehicle. The current oversized parking will be utilized for temporary VC/Concession trailers as well as ADA accessible parking. In 2017, the monument had over 600,000 visitors, about which 250,000 park at the visitor center complex.</p>				
Categories of Facilities Maintenance and Construction Needs - PMIS 250415				
Capital Improvement Strategy Score: 578			Project Total DOI Score: 57.80	
CIS Element	Weighted Score	Percentage	Final Score	Final Score
Financial Sustainability	705	50%	353	FCI/API 32.00
Visitor Use	500	30%	150	Scope of Benefits 14.00
Resource Protection	500	15%	75	Investment Strategy 12.00
Health and Safety	0	5%	0	Consequences of Failure to Act 0

PMIS 250415 Construct Temporary Oversized Vehicle Parking & Associated Preliminary Designs

Capital Asset Accounting Determination Results Summary - PMIS 250415

Facility (FMSS Location)	Historic Status	LCS	Legal Interest	Location Status	Asset Code / Facility Type	Work Type / Sub Work Type	Estimated Project Cost Distribution	Project Type
[113829] Historic Grounds	5 - Not Evaluated		Owned	OPERATING	3100 - Maintained Landscape3110 - Maintained Landscapes	FM / DM (100%)	\$130,737.04 (100.0%)	X - Non-Capitalized Asset

Project Activities, Assets, Emphasis Areas - PMIS 250415

Activities <ul style="list-style-type: none"> Maintenance 	Assets <ul style="list-style-type: none"> Maintained Landscape
Emphasis Areas <ul style="list-style-type: none"> Deferred Maintenance Health and Safety Healthy Parks Healthy People 	Resources

Project Prioritization Information - PMIS 250415

Unit Priority: 2 out of 64 **IN** FY 2018

Project Assistance Needs - PMIS 250415

Is Assistance Needed: Yes [From Region] Project Assistance Needed in the Following Areas: <ul style="list-style-type: none"> Architectural and Engineering Services Project Management/Coordination Contracting 	
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Related OFS Funding Requests- PMIS 250415

Request ID: 10562	Request title: Improve Maintenance and Safety Capabilities
Request ID: 33039	Request title: Support Mission Critical Operations in Preparation for the Next 25 Years

Project Funding Component - PMIS 250415A

Funding Component Title: Temporary Oversized Vehicle Parking	Funding Component Request Amount: \$130,737.04
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PMIS 250415 Construct Temporary Oversized Vehicle Parking & Associate Preliminary Designs

Funding Component Reference Number (Multi-purpose):	Funding Component Type: Non-recurring
Funding Component Description: Grade brush to create a 1 acre oversized temporary parking area while the VC is being renovated. Start dates in FY 2019.	
Initial Planned FY: 2019	Requested Funding FY: 2019
Review Status: Region-reviewed on 03/19/2018	
Date of Park Submission: 01/19/2018	Submitted By:
Upper-level Review Status:	Fee-demo Submission Number: CP 19 - 24
Formulated FY: 2019	Funded FY:
Formulated Amount: \$130,738.00	Funded Amount:
Formulated Funding Source: Recreation Fee Park Revenue	Funded Funding Source:
Formulated Program: Fees	Funded PWE Accounts:

Youth Participation Summary

Project activities related to engaging individuals 35 years or younger in resource stewardship through education, volunteer and employment opportunities.

Planned Total Number of Youth Volunteers	Planned Total Number of Youth Employed	Planned Total Number of Youth Engaged
0	0	0

Related PEPC Information

Related PEPC Project Number	Compliance Status	Expected Compliance Date
No Related PEPC Project Numbers Specified.		

Component Cost Estimates

Labor Cost Type: Contract	
Estimated By: Imported From PST	Date of Estimate: 01/01/2017
Estimate in 2017 dollars	Class of Estimate: C
Cost Center: WHSAMO - WHSA MAINTENANCE	

Item	Description	Qty	Unit	Unit Cost	Item Cost
Estimated Labor Cost	Imported from PST	1	Lump	\$30,515.14	\$30,515.14
Estimated Material Cost	Imported from PST	1	Lump	\$67,569.12	\$67,569.12
Estimated Equipment/Tool Cost	Imported from PST	1	Lump	\$7,945.34	\$7,945.34

PMIS 250415 Construct Temporary Oversized Vehicle Parking & Associated Preliminary Designs

Estimated Service Cost	Imported from PST	1	Lump	\$0.00	\$0.00
Component Net Cost					\$106,029.60

Escalation Adjustments

Item	Description	Item Cost
Escalation 4% per year		\$8,652.02
Net Cost Estimate (Escalated)		\$114,681.62

Grossing Adjustments

Item	Description	Item Cost
Compliance Max of 5% of Total Project Net Cost (Escalated) (\$5,734.08)	Updated as (2%) of Project Net Construction (Escalated)	\$2,293.63
Pre-design Max of 5% of Total Project Net Cost (Escalated) (\$5,734.08)	Updated as (0%) of Project Net Construction (Escalated)	\$0.00
Final Design Max of 10% of Total Project Net Cost (Escalated) (\$11,468.16)	Updated as (0%) of Project Net Construction (Escalated)	\$0.00
Supplemental Services Max of 2% of Total Project Net Cost (Escalated) (\$2,293.63)	Updated as (2%) of Project Net Construction (Escalated)	\$2,293.63
Project Management Max of 8% of Component Net Cost (Escalated) (\$9,174.53)	Updated as (0%) of Component Net Construction (Escalated)	\$0.00
Construction Contingency Max of 10% of Component Net Cost (Escalated) (\$11,468.16)	Updated as (10%) of Component Net Construction (Escalated)	\$11,468.16
Component Funding Request (Net Cost Estimate Escalated + Total Add-on Amount)		\$130,737.04

Eligible Funding Sources and Funding Priorities

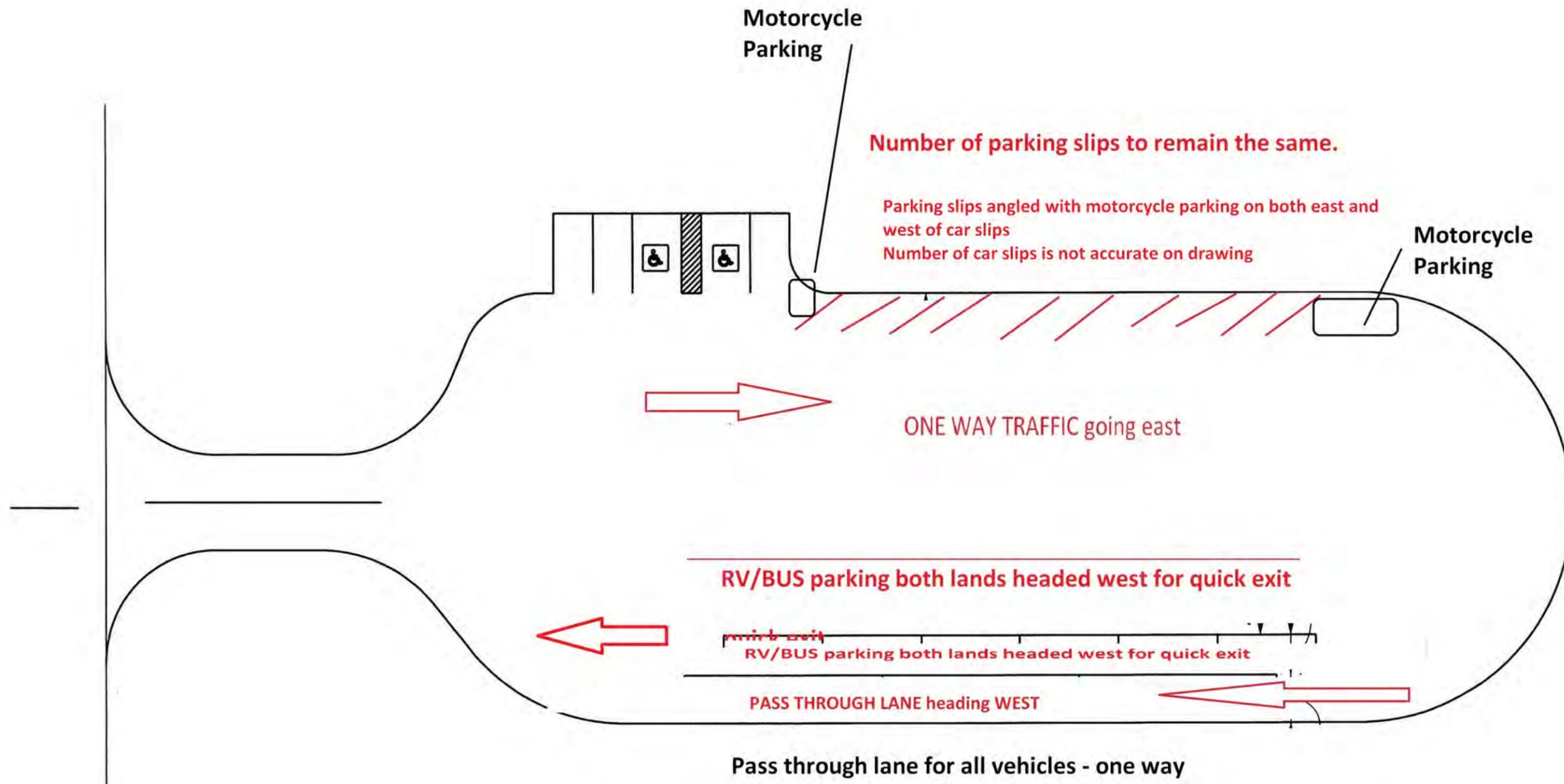
Funding Category	Priorities by Eligible Funding Sources			
	Funding Source	Unit Relative Priority	Regional Priority	National Priority
Recreation Fee Park Revenue	Recreation Fee Park Revenue	1 of 24		
	Recreation Fee Park Revenue - Cost of Collection	1 of 24		

Component Completion Report

Component Start Date:	Component Completion Date:
Completion Report Date:	Created By:
Change in Condition:	Report Last Updated By:

PMIS 250415 Construct Temporary Oversized Vehicle Parking & Associated Preliminary Designs

As Built Drawing or Report Number:	As Built Drawing or Report Title:
Location of Original As Built Drawing or Report:	As Built Drawing or Report Author:
Superintendent Approval Date:	Superintendent Certification:
Brief Quantified Description of Final Product/Outcome:	

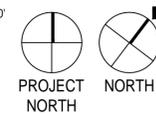


1. Add one way arrows circulating clockwise for all traffic
2. Add motorcycle lots at both ends of car slips
3. Pass thru lane is the farthest from the visitor center - next to US 70.

White Sands NM
National Park Service
Visitor Center Parking Plan
April 5, 2013



Partial Conceptual Site Plan - Temporary North Parking Area - Alternate 2



DESIGNED:
Hyatt
GAD
Hyatt
TECH. REVIEW:
DATE:
10062015

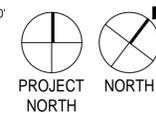
SUB SHEET NO.

TITLE OF SHEET
New Restrooms and
Visitor Center
Rehabilitation
White Sands National Monument
New Mexico

DRAWING NO.
PMIS/PKG NO.
SHEET
OF



Partial Conceptual Site Plan - Temporary North Parking Area

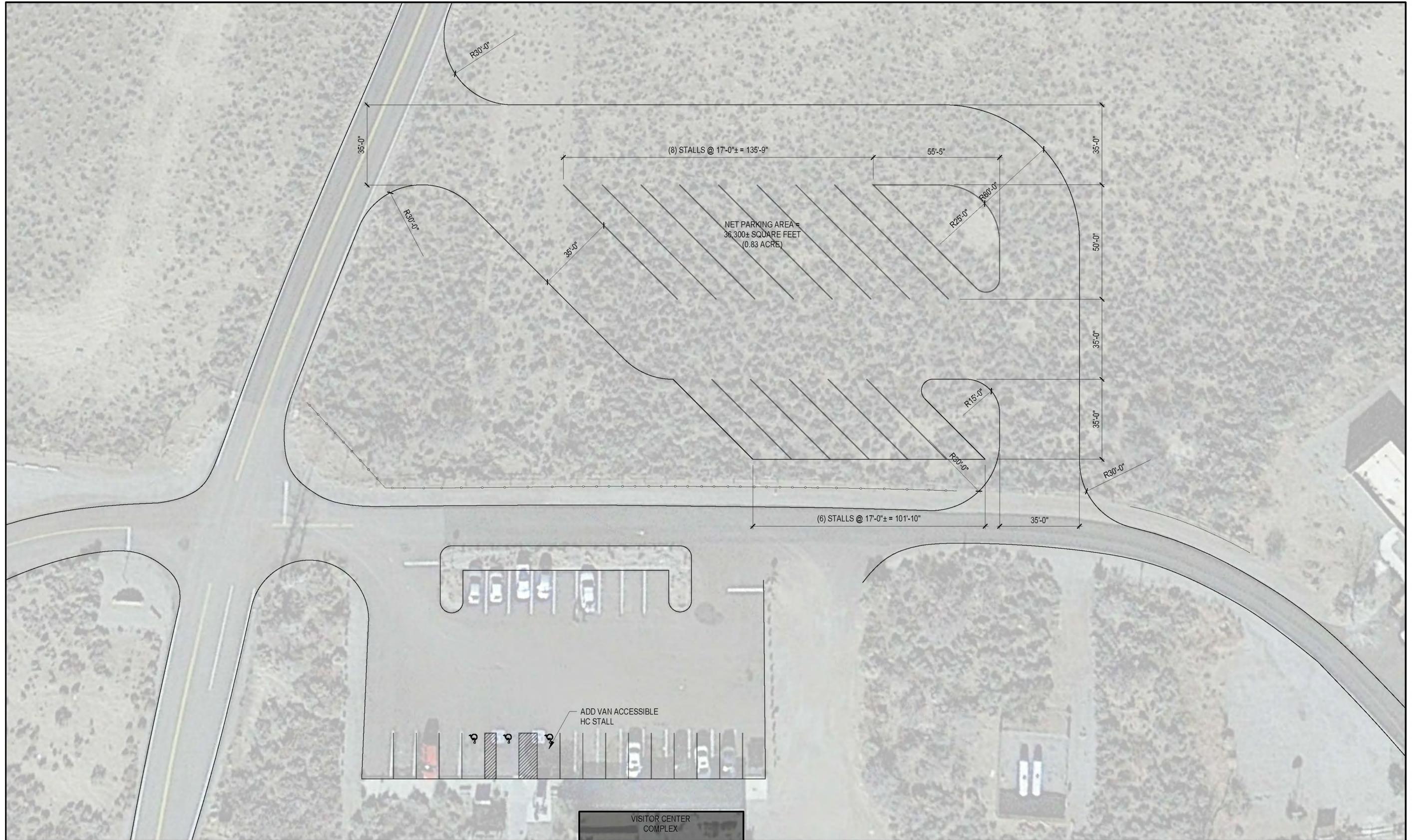


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TECH. REVIEW:
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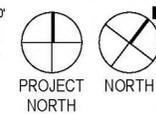
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New Restrooms and
Visitor Center
Rehabilitation
White Sands National Monument
New Mexico

DRAWING NO.
PMIS/PKG NO.
SHEET
OF



Partial Conceptual Site Plan - Temporary North Parking Area

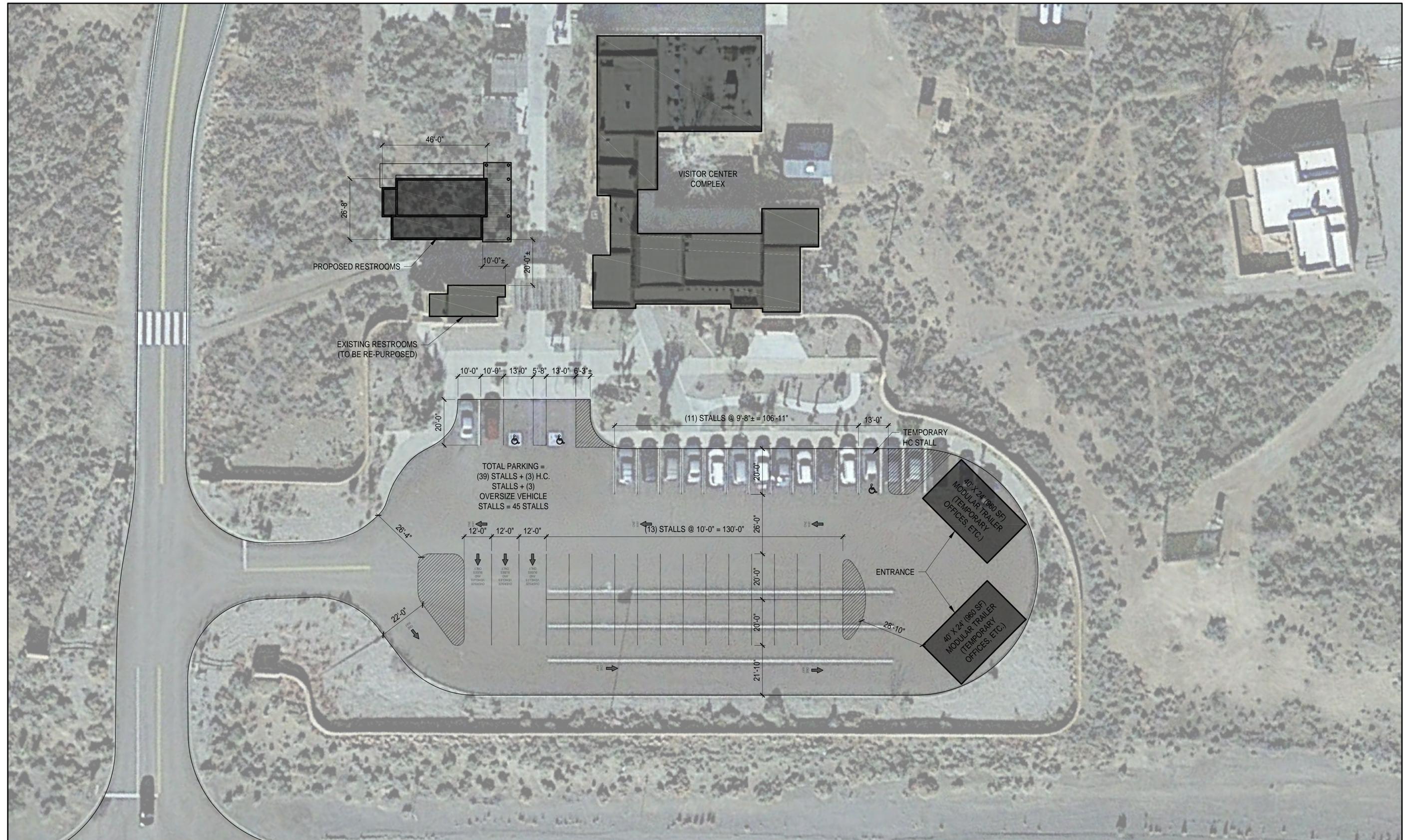


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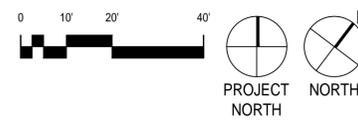
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New Restrooms and
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White Sands National Monument
New Mexico

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OF



Conceptual Site Plan - Temporary Parking and Offices

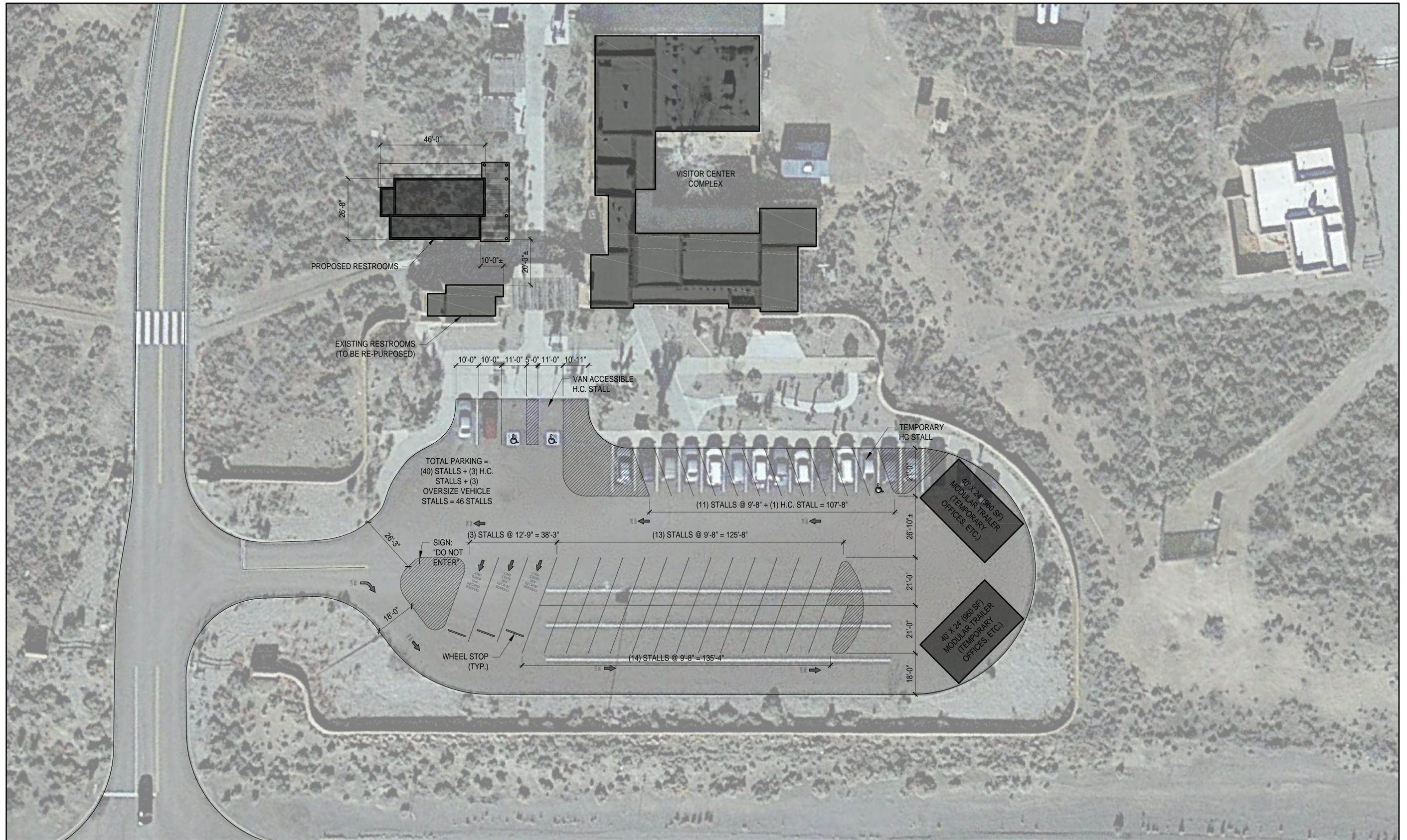


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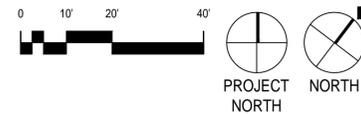
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TITLE OF SHEET
New Restrooms and
Visitor Center
Rehabilitation
White Sands National Monument
New Mexico

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PMIS/PKG NO.
SHEET
OF



Conceptual Site Plan - Temporary Offices and Parking - 70° Angled Parking

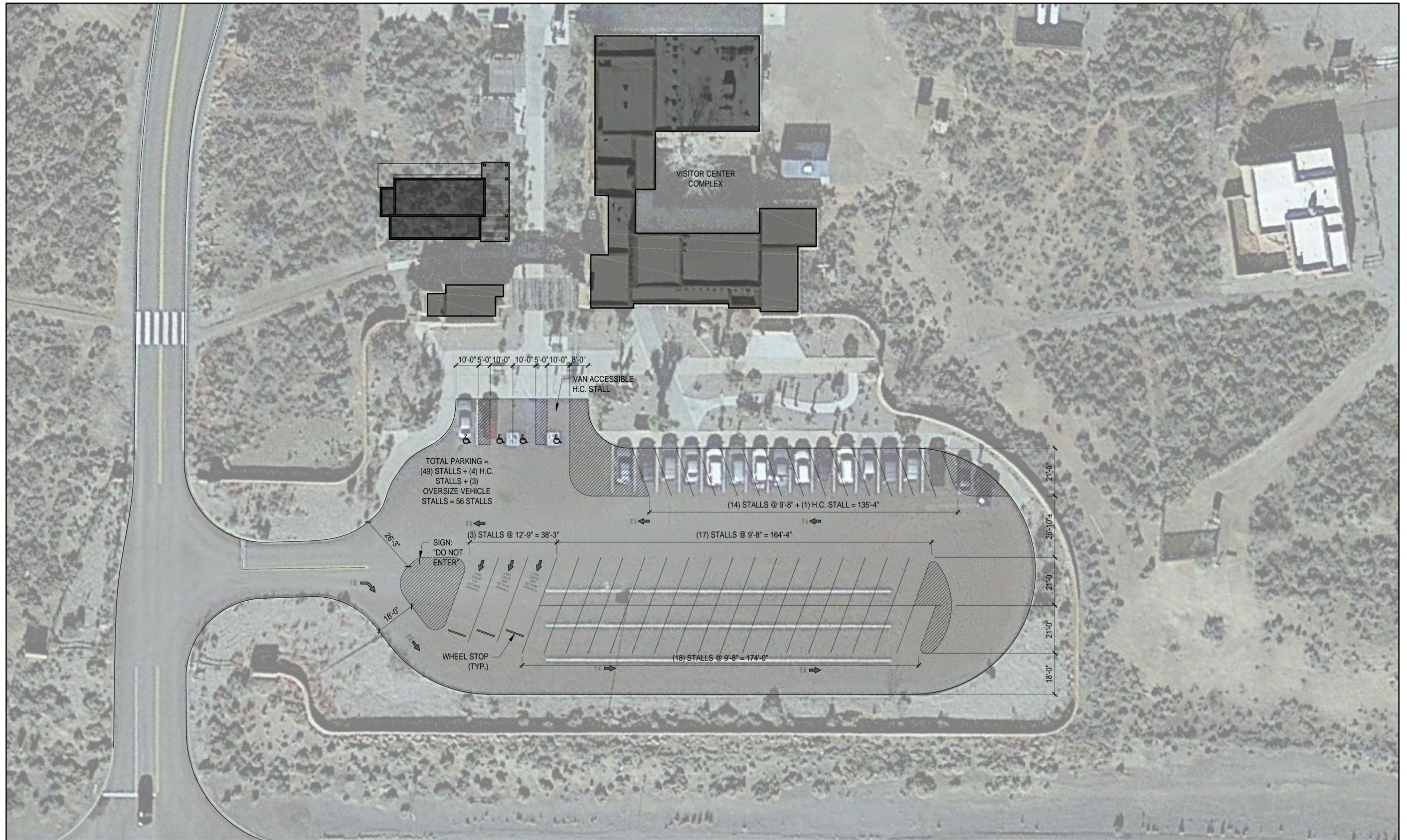


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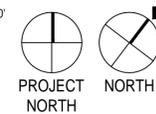
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Conceptual Site Plan - Permanent Parking - 70° Angled Parking



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New Restrooms and
Visitor Center
Rehabilitation
White Sands National Monument
New Mexico

DRAWING NO.
PMIS/PKG NO.
SHEET
OF

WHSA Parking Demand Analysis

Parking Demand				
	Current Conditions		10 Year Historic Growth	If NM becomes NP
Mar-18	62	Mar-28	87	91
Jun-18	44	Jun-28	62	65
Peak Day	111	Peak Day	155	235
Parking Supply				
	POVs			
South Parking Lot	14			
North Parking Lot	26			
Total Parking Spaces	40			
Parking Shortage				
	Current Conditions		10 Year Historic Growth	If NM becomes NP
Mar-18	22	Mar-28	47	51
Jun-18	4	Jun-28	22	25
Peak Day	71	Peak Day	115	195

Parking Lot Demand Analysis

WWSA Parking Demand Analysis

Average Daily Traffic

Current Conditions		
	ADT	Peak Day
Mar-18	923	1658
Jun-18	659	2379

10 year historic growth:			40%
	ADT	Peak Day	
Mar-28	1290	2316	
Jun-28	920	3323	

If NM becomes NP:			*Headwaters study	
	ADT	Peak Day		
Mar-28	1359	2441		
Jun-28	970	3502		

Parking Demand Factor 0.375 hour

Visitors that stop at VC 75%

Visitor Center Length of Stay 0.5 hour

21% first 5 years	4% annually next 5 years
1117	1359
797	970

	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM
Current Conditions															
March 2018 % in Dunes	-2	29	50	103	112	123	161	163	140	165	149	127	18	2	2
VC Parking Needed	-1	11	19	38	42	46	60	61	53	62	56	48	7	1	1
June 2018 % in Dunes	-1	20	35	73	80	88	115	117	100	118	106	91	13	1	1
VC Parking Needed	-1	8	13	27	30	33	43	44	38	44	40	34	5	0	1
10 Year Historic Growth															
March 2028 % in Dunes	-3	40	69	143	156	172	225	228	196	231	208	178	25	2	3
VC Parking Needed	-1	15	26	54	58	64	84	86	73	87	78	67	9	1	1
June 2028 % in Dunes	-2	28	49	102	111	122	161	163	140	165	148	127	18	2	2
VC Parking Needed	-1	11	19	38	42	46	60	61	52	62	56	48	7	1	1
If NM become NP															
March 2028 % in Dunes	-3	42	73	151	164	181	237	241	207	243	219	187	26	3	3
VC Parking Needed	-1	16	27	57	62	68	89	90	77	91	82	70	10	1	1
June 2028 % in Dunes	-2	30	52	108	117	129	169	172	147	174	156	134	19	2	2
VC Parking Needed	-1	11	20	40	44	48	64	64	55	65	59	50	7	1	1
Peak Days															
March 2018 % in Dunes	-4	51	89	184	200	221	290	293	252	297	267	229	32	3	4
VC Parking Needed	-1	19	33	69	75	83	109	110	94	111	100	86	12	1	1
June 2018 % in Dunes	-5	74	128	265	288	316	416	421	362	426	383	328	46	5	5
VC Parking Needed	-2	28	48	99	108	119	156	158	136	160	144	123	17	2	2
Historic Growth Rate March 2028 % in Dunes	-5	72	124	257	280	308	405	410	352	415	373	319	45	4	5
VC Parking Needed	-2	27	47	97	105	116	152	154	132	155	140	120	17	2	2
Historic Growth Rate June 2028 % in Dunes	-8	103	179	369	402	442	580	588	505	595	535	458	65	6	8
VC Parking Needed	-3	39	67	139	151	166	218	221	189	223	201	172	24	2	3
NM becomes NP															
March 2028 % in Dunes	-6	75	131	271	295	325	426	432	371	437	393	337	47	5	6
VC Parking Needed	-2	28	49	102	111	122	160	162	139	164	147	126	18	2	2
NM becomes NP															
June 2028 % in Dunes	-8	108	188	389	423	466	612	620	532	627	564	483	68	7	8
VC Parking Needed	-3	41	71	146	159	175	229	232	200	235	211	181	26	3	3

WHSA Traffic Counter at Park Entrance

Day Last Day of Previous Month	March 2018		June 2018	
	Traffic Counter	Daily Vehicle Count	Traffic Counter	Daily Vehicle Count
	116,969		188,949	
1	117,350	381	189,454	505
2	117,787	437	190,022	568
3	118,300	513	190,749	727
4	119,192	892	191,411	662
5	119,907	715	191,926	515
6	120,401	494	192,400	474
7	120,794	393	192,919	519
8	121,265	471	193,414	495
9	121,713	448	193,940	526
10	122,415	702	194,785	845
11	123,812	1,397	195,577	792
12	124,850	1,038	196,088	511
13	126,166	1,316	196,649	561
14	127,737	1,571	197,120	471
15	129,232	1,495	197,622	502
16	130,511	1,279	198,235	613
17	132,167	1,656	198,931	696
18	133,825	1,658	199,709	778
19	134,606	781	200,312	603
20	135,353	747	200,880	568
21	136,119	766	201,447	567
22	136,909	790	202,016	569
23	137,800	891	202,629	613
24	138,736	936	203,450	821
25	140,131	1,395	204,185	735
26	141,197	1,066	204,733	548
27	141,949	752	205,237	504
28	142,855	906	205,794	557
29	143,742	887	208,173	2,379
30	144,667	925	208,719	546

***June 29 was a Full Moon Event

Parking Lot Demand Analysis

NM DOT Road Safety Audit Traffic Counts

August 25, 2013

	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	
Ingress	6	13	15	26	15	22	31	19	16	27	11	9	0	0	1	211
% of total	2.8%	6.2%	7.1%	12.3%	7.1%	10.4%	14.7%	9.0%	7.6%	12.8%	5.2%	4.3%	0.0%	0.0%	0.5%	1
Egress	7	7	11	15	14	21	24	20	23	23	16	15	27	4	1	228
% of total	3.1%	3.1%	4.8%	6.6%	6.1%	9.2%	10.5%	8.8%	10.1%	10.1%	7.0%	6.6%	11.8%	1.8%	0.4%	1