

FLOODPLAIN STATEMENT OF FINDINGS

Lower Wildrose Road, Rehabilitation and Repair Project
Environmental Assessment
Death Valley National Park
California

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The above signatures certify that this document is technically adequate and consistent with NPS policy.

Executive Order (EO) 11988 (“Floodplain Management”) requires the National Park Service (NPS) and other agencies to evaluate the likely impacts of actions in floodplains.

It is NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. If a proposed action is in an applicable regulatory floodplain, then flood conditions and associated hazards must be quantified, and a formal Statement of Findings (SOF) must be prepared. The NPS *Procedural Manual* #77-2, *Floodplain Management* provides direction for the preparation of a floodplain SOF. This SOF has been prepared to comply with EO 11988 and with *Procedural Manual* #77-2.

Proposed Action

The National Park Service (NPS) is proposing to rehabilitate 4.8 miles of the Emigrant Canyon Road, commonly referred to as Lower Wildrose Road, from mile-post (MP) 20 to MP 24.8 (starting at the junction with Emigrant Canyon Road and Charcoal Kilns Road and ending at the pipe gate at the old National Monument boundary, approximately 1 mile east of the current National Park boundary). The Lower Wildrose Road Rehabilitation Project (referred to herein as “the project”) is located entirely within Death Valley National Park (referred to herein as “Death Valley” or “the Park”). This section of Lower Wildrose Road has deteriorated over the years due to flash flooding and is hazardous for vehicular travel. The Action Alternatives 3 and 4 in the project’s environmental assessment provide measures that will help restore and preserve floodplain function while reinforcing the road against flood damage. The environmental assessment identifies Alternative 4 as the agency’s preferred alternative, and determines Alternative 4 to be the environmentally preferred alternative.

Site Description

The Wildrose area of Death Valley, which includes Wildrose Canyon, is located in the southwestern portion of the Park, approximately 56 miles northeast of the City of Ridgecrest. Wildrose Canyon descends from an elevation of approximately 4,100 feet above mean sea level (msl) to approximately 3,000 feet above msl at the western Park boundary. Lower Wildrose Road traverses the floor of Wildrose Canyon from the junction with Emigrant Canyon Road and Charcoal Kilns Road and to the National Park boundary. A flash flood in the late 1980s caused significant damage to the roadway. Since then, the roadway has continued to degrade from flood events. The road is currently only partially paved and is a safety concern.

Floodplains

The project is located in a narrow canyon in a desert environment, which averages between 3.5 and 4.5 inches of precipitation annually. However, Wildrose Canyon also drains the 23.7 square-mile Upper Wildrose Basin, which receives runoff from the Panamint Mountains to the east and southeast. The highest elevations of the Panamint Mountains receive an average of 11 inches of precipitation annually, which is the highest rate of precipitation in the Park. Precipitation in the watershed generally occurs during

the winter months (November through March). The winter storms are generally low-intensity when compared to localized summer (July through September) thunderstorms. Summer thunderstorms are responsible for the most damaging Death Valley flooding.

Justification for Use of the Floodplains

Lower Wildrose Road serves as an access point to the Park from the southwest, and is the most direct route of travel for visitors entering the Park from Ridgecrest, CA. It provides access to Charcoal Kilns, Wildrose Peak Trail, Telescope Peak Trail, and several campgrounds. The road alignment itself is historic, and was an important travel corridor associated with various significant mining operations in the Park.

Wildrose Canyon is a viable route because of the landscape dynamics and geomorphic processes caused by episodic flooding. Flooding has eroded the canyon, and the dynamic alternation between erosion and deposition in the wash has created a suitable slope for a roadway. If a road is to be maintained in Wildrose Canyon the floodplain cannot be avoided. This project seeks to accommodate a more natural hydrologic and sedimentologic regime by creating drainage features that will result in a roadway that can withstand moderate flooding events.

Investigation of Alternative Sites

There are no other alternative sites for this project.

Hydrologic Risk

Water flows through Wildrose Canyon in Wildrose Wash, which is an ephemeral stream (flows in response to precipitation events). Wildrose Canyon is known to be an area of flood hazard. Between October 1960 and September 1975, a gaging station was maintained by the US Geological Survey (USGS) along Wildrose Wash near Wildrose Station. The USGS National Water Information System reports daily, weekly, and monthly peak flow data in Wildrose Wash. During the 15 years of continuous record, peak event flows of more than 100 cubic feet per second (44,900 gallons per minute) were recorded six times, with the highest of those flows recorded on September 4, 1967 at 1,060 cfs (480,000 gallons per minute). In 1981, the USGS prepared a report estimating the degree of hazard probable related to flooding within Wildrose Canyon (*Potential Hazards from Floodflows in Wildrose Canyon*, by John R. Crippen, USGS 1981). The report concluded that irregular flooding is a potential hazard within Wildrose Canyon. Flooding from a 25-year storm event is likely to inundate a good portion of the roadway identified for rehabilitation as part of the project, and a 50-year event is likely to inundate most, if not all, of the roadway within the canyon.

Project construction will be suspended and evacuated during times of storm runoff or intense precipitation. The floodplain could be slightly negatively impacted during construction, but will be improved in the long term.

During moderate flood events, the proposed action will result in less water on the road, less road damage, and improved energy dissipation of runoff. This is likely to result in a decrease in threats to visitor safety.

Mitigation Measures

Mitigation will include sustainable design principles, appropriate elevations for the finished road, and Best Management Practices during and after construction. Specifically, these mitigation measures will modify the proposed road alignment in several locations to allow drainage to cross the road. In these locations, road reinforcement will also be provided to support the road during rain events. These different types of drainage features (e.g., culverts, Arizona crossings), and road reinforcement (e.g., gabion baskets, buried k-rails, concrete subbase) will provide long-term protection to the road and minimize the need for emergency repairs. Minor roadside drainage improvements will also be implemented, including French drains. These mitigation measures will contain flow to the sides of the road, and in a flood event, direct flow under or over the road, minimizing the adverse environmental impacts on natural floodplain function and lessening the risk of flood damage to the road.

By directing flow under and over the road during a flood event with these sustainable design features, the project's mitigation will reduce the alteration of the natural and beneficial floodplain values and maintain the floodplain environment as close to its natural state as practicably possible. Although there will be some reworking of the floodplain alluvium, there will be no fill emplacement. Free natural drainage and natural contours will be preserved to the extent practicable. Two permanent signs, one at each entrance to Wildrose Canyon, will be installed warning Park visitors of the potential for flash flooding to occur during precipitation events. These mitigation measures are in accordance with the NPS floodplain guidelines and with EO 11988 ("Floodplain Management").

Compliance

Section 404 of the Clean Water Act requires a permit for any activity which may result in any discharge into the navigable waters of the United States. The NPS contacted the US Army Corps of Engineers (Mr. Bruce Henderson) in December of 2009 concerning the jurisdiction of Wildrose Wash. The Corps requested a memorandum documenting the drainage path and characterizing the nature of Wildrose Wash. NPS sent such a memo in April 23, 2010 to the US Army Corps. Based on the content of this memo and the record of communication, the proposed project would not result in any discharge into the navigable waters of the United States. Therefore, Section 401 and 404 permits are not required for this project.

The Environmental Assessment, this SOF for EO 11988 and Procedural Manual #77-2, and the finding of no significant impact (FONSI), when signed, would complete the requirements for the NEPA for this project.

Conclusion

The action Alternatives 3 & 4 (Alternative 4 being the environmentally preferred and the agency's preferred alternative) in the Lower Wildrose Road, Rehabilitation and Repair Project Environmental Assessment specifically address runoff issues. These Alternatives include measures to contain flow to the sides of the road, and when necessary, direct flow under or over the road. This should result in a road that can withstand moderate runoff events. Barring a large flood, the floodplain will stabilize to the slightly altered runoff regime, resulting in a floodplain that will more effectively dissipate the energy of flooding. The No Action Alternative simply keeps the road open by grading the road, which has resulted in piles of sediment blocking distributary channels, and a channelized below-grade roadway. The proposed action will improve visitor safety, and help restore more natural downslope delivery of water, sediment, and nutrients. The National Park Service finds the proposed action to be consistent with EO 11988.