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BUREAU OF LAND MANAGEMENT
CALIFORNIA DESERT DISTRICT**
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**Decision Record
and**

Environmental Assessment
Finding of No Significant Impact

for

The DARPA Grand Challenge

Prepared by:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Barstow Field Office

Environmental Assessment CA-680-03-58

Approved by



Linda Hansen
California Desert District Manager

2-12-04
Date

DECISION

Based on review of the Environmental Assessment (CA-680-03-58) (EA) and my Finding of No Significant Impacts, it is my decision to approve the Combined Network Alternative of the DARPA Grand Challenge, summarized herein, and more fully described in the Environmental Assessment (EA) prepared for the proposed action and alternatives.

Description of Action

The Defense Advanced Research Projects Agency (DARPA) will conduct a field-test (Grand Challenge) of up to 25 autonomous robotic vehicles in the Mojave and Colorado Desert regions. The field test is scheduled to take place on March 13, 2004 during daylight hours, and, if not completed, may be continued until March 14.

The primary purpose of the action is to advance robotic technology for unmanned autonomous ground vehicles. The event will be conducted within OHV areas and paved and unpaved segments of BLM designated open routes and public roads, over approximately 225 miles. Vehicles will navigate from point to point (waypoints or latitude/longitude) as defined by a computer file that identifies the route to be followed. The computer file will also provide any applicable speed limits, and define the width of each route segment that the vehicle is able to operate within. On approved routes of travel and public roads the vehicles will be constrained to the roadways including the road surface and unvegetated shoulder, but excluding any berms. In OHV Open areas, the widths may be greater, allowing vehicles to determine their own route and to evaluate the best way to get between two waypoints.

Contestants will provide test vehicles to DARPA for the event, and test vehicles will be under DARPA's control and observation during the pre-event inspection and testing, and during the event. Each test vehicle will be closely followed by a control vehicle and observed by pedestrian monitors along the route. DARPA will be implementing a multi-layered safety and communication system that will allow them to immediately stop any vehicle, as needed. Operation support activities include a start and finish area, two spectator areas, route marking, administrative and tortoise monitor sweeps, communications, media observation points, and route closure. A route closure will be imposed on the affected route segments and portions of the OHV areas, and will be enforced by DARPA staff and law enforcement officials.

Conditions

Conditions to be imposed on the approved action include:

1. Mitigation measures identified in the EA, as modified in the attached Stipulations.
2. U.S. Fish & Wildlife Service (Service) terms and conditions identified in the attached Biological Opinion issued by the Service.

These conditions and measures are attached as stipulations to this decision. All mandatory terms and conditions to implement reasonable and prudent measures will be implemented. These can be read directly from the Biological Opinion (BO) found on pages 15 and 16 of that document. Reasonable and prudent measures are related to operation of the Grand Challenge in future years, which is not addressed in this decision record.

RATIONALE

DARPA has been tasked by Congress and the Department of Defense to achieve the autonomous vehicle technology that will allow 1/3 of the operational ground forces to be unmanned robotic, remotely controlled technology by 2015. In order to make these advancements, DARPA found that they would need to go beyond traditional military contractors and reach out to grassroots innovators that might not be ordinarily attracted to defense projects. Accordingly, they designed the Grand Challenge to test vehicles over terrain types and distances that reflect a realistic military application and scenario, and to attract the desired participants. The Mojave and Colorado Desert regions embody locations to meet all of these needs. The endurance and navigational segments of the action outside of OHV Open Areas are essential to providing a realistic military scenario for evaluation of the test vehicles.

The Combined Network Alternative in particular provides: 1) flexibility to match the capability of the vehicles to the route of the appropriate difficulty (easy, moderate, difficult); 2) flexibility for weather or other variable or unpredictable conditions (fire, high water, highway closure, etc.); and 3) the ability to conceal the route and prevent pre-running/programming. DARPA will be allowed to select the specific route segments used from over approximately 1500 miles of route segments within this Network. Other alternatives would meet the needs of the proposed action, but to a much lesser extent, and would provide less logistical flexibility. The selection of other alternatives would also make it much more difficult for DARPA to conceal the route being used and prevent pre-running/pre-programming.

Conformance with CDCA and LVRMP.

The California Desert Conservation Area (CDCA) Plan, 1980, as amended, is the overriding BLM land use plan for the affected area in California. The Las Vegas Resource Management Plan (LVRMP) is the overriding BLM land use plan for the affected area in Nevada. On BLM-managed lands, the Grand Challenge is restricted to existing public routes between southern California and Nevada. The event has been structured to include competitive portions where allowed and a navigational challenge on designated open routes and public roads.

In California, the competitive portions of the route are wholly contained within OHV areas that allow competitive events, while the navigational routes use only BLM "approved routes of travel" and public roads (The California Desert Conservation Area (CDCA), 1980, as amended, pg. 71). The vehicles are released in staggered start fashion, so they are "competing" against a clock rather than against another vehicle between Open Area waypoints. Once out of the OHV Open Area, navigational and endurance factors are evaluated. The Grand Challenge has been planned in accordance with the CDCA Plan, which describes multiple-use classes for lands in the area and provides additional guidance on permitted activities. The event crosses lands designated as Class L (Limited Use), Class M (Moderate Use) and Class I (Intensive Use) as defined in Table 1, "Multiple Use Class Guidelines" in chapter 2 of the CDCA Plan, 1980, as amended.

The competitive portions of the event are authorized on Class I where, "Motorized-vehicle play is allowed in areas designated 'open.' All aspects of competitive events will be permitted except where specific mitigations are stipulated by the authorized officer" (CDCA Plan, Chapter 2, Table 1). The navigation portion of the event will occur on Class I, M, and L lands which allow, "Non-competitive vehicle touring and events as well as competitive events on specified recreation routes which have been delineated and designated in the CDCA Plan" (CDCA, as amended by NEMO and NECO, December, 2002). Test vehicles will be slowed and stopped during the event for road crossings, railroad crossings, and other unforeseen circumstances, and no DARPA control vehicle will be aware of the corrected time of another vehicle, so there will be no head-on-head competition.

Non-competitive events are allowed under the CDCA plan and amendments, but within critical habitat, events are restricted to areas that are not fragile, such as utility corridors where other activities will occur. The Programmatic Biological Opinion for Dual Sport activities provides for non-competitive events through critical habitat, and post event monitoring has verified that these events have not resulted in adverse effects on critical habitat.

Additional resource management parameters have been developed that amend or propose to amend the CDCA Plan, including the draft West Mojave Habitat Conservation Plan (2003), the Northern and Eastern Mojave Plan (2002), and the Northern and Eastern Colorado Plan (2002). These plans revise the boundaries for certain types of management areas, and provide additional guidance for resource management. The Grand Challenge conforms to all requirements in these plans.

The Las Vegas Resource Management Plan (1998) establishes management areas and provides guidance for resource management. The Grand Challenge conforms to all requirements in this plan, and other relevant plans that govern the affected area in Nevada.

Consideration of Guidance for Military Activities on BLM Managed Lands

BLM Instruction Memorandum No. 2001-030 provides regulatory and policy guidance on military activities on BLM managed lands. A few of these items warrant specific consideration herein, as follows.

“All authorizations for military activities . . . must provide the proponent agency the minimum land area, uses, and rights necessary to accomplish the authorized activity in a safe and generally unimpeded manner, subject to valid existing rights.”

While the route network for the Combined Network is large, the actual area used for the action will be limited to 225 miles of route network, related staging areas and monitoring locations. The 225 miles of route network is necessary to meet DARPA’s need for a realistic military application. The staging areas are needed to provide logistical support for the event, including safety and environmental measures, and provide some limited opportunity for the media and the public to observe event activities.

“It is appropriate for mitigation measures to be considered during the NEPA process...appropriate mitigation measures may be taken under the provisions of the Endangered Species Act, and other applicable statutes.”

During the NEPA process, DARPA and the BLM incorporated numerous environmental considerations into the action. Lengthy discussions were held to develop protection for the desert tortoise. Specific measures were also identified as mitigation in the EA (see attached). In addition, the Service has issued a Biological Opinion on the affect of the action on desert tortoise, and has included additional terms and conditions with which DARPA is responsible for complying. DARPA is committed to conduct the action in a manner which will not adversely impact natural resources including the desert tortoise, cultural resources and other natural resource values.

“ . . . Stewardship responsibilities remain vested with the BLM, unless specifically given to the military. The military is responsible for conducting it’s [activities] within the terms and conditions of the authorization, preventing any undue impacts on the resources, and restoring any damaged lands and resources.”

As the overriding land use management agency, the BLM has worked with DARPA to ensure that the action is consistent with BLM's guiding land use management plans, and that land use resources will not be jeopardized. This has been accomplished in the design and constraints on the action and through mitigation identified in the EA. The BLM has used all practicable means to avoid impacts resulting from the action. In the MOA between DARPA and the BLM, DARPA agreed to comply with all conditions imposed by the BLM in carrying out the DARPA Grand Challenge, and the BLM is monitoring DARPA's compliance. DARPA is ultimately responsible for complying with all conditions on the action including those imposed by the BLM and the Service. A number of plans and contingency plans are in effect to control dust, crowds and waste, and to provide for public safety. In addition, monitoring by authorized biologists, archeologists, law enforcement and other public safety personnel is designed into the event operation as well as removal of all material used in connection with the event and a rapid assessment in the case that mitigation is needed. As the expert on the technology being utilized, DARPA will be ultimately responsible for technical oversight of the activity and complying with all conditions on the day of the event, including those imposed by the BLM and the Service. The BLM will monitor environmental compliance on the day of the event

PUBLIC INVOLVEMENT

In advance of the availability of the EA, the BLM sent out an interest post card to approximately 1200 parties from the BLM National database. Parties included in the mailing list included those that had expressed an interest in the California desert, environmental documents, and OHV events. Also included were organizations known or anticipated to have an interest in the action and Desert Advisory Council members. In addition, interested persons could request a copy of the EA from the BLM website. On December 13, 2003, copies of the EA (hardcopy or CD as requested) were mailed to those that requested one, as well as posted to the California BLM website. The EA was also mailed to relevant agencies and potentially affected interests. An extended public review period of approximately 45 days was open until January 28, in order to provide extra time for review and comment, given the holidays that occurred in this timeframe.

Comments on the EA were received from 19 parties including 1 response from a federally-recognized Native American tribe, 8 responses from agencies/quasi-agencies, 6 responses from organizations and 4 responses from individuals. Comments were received via mail, fax, website on-line form, and telephone. Of these, 13 responses were received with comments on the EA.

Issues raised in the comments include the following: whether there is precedent for the event concern that though the EA identified the action as an event or field-test it is actually a race across the desert; concern regarding timing of event in early spring when federally and state-threatened desert tortoise may be active; concern regarding impacts to nearby wilderness and wilderness study areas; whether range of alternatives analyzed was adequate (exclusion of military bases, alternatives that avoid critical habitat); whether an EIS should be prepared; whether the action is in conformance with the CDCA plan; whether tortoise mitigation is sufficient; whether sensitive plant mitigation is sufficient; what fuels will be used and whether fuel spill mitigation is sufficient; whether archeological mitigation is sufficient; and further issues clarified below.

We are providing additional information which clarifies the information provided in the EA, but which would not have substantially changed the outcome of the analysis. It is not necessary to specifically respond to all comments received, however, the following summarized comments and responses further clarify or supplement information in the EA, which the decision makers have found to be useful.

Comment: Concern that though the EA identified the action as an event or field-test it is actually a race across the desert.

Response: The DARPA event proponents originally characterized the Grand Challenge as a "race" without recognizing the potential significance of this description to the public familiar with CDCA Plan. The competition referred to the building of an autonomous robotic vehicle to meet specified DARPA needs and thus win the competition for a \$1,000,000 cash incentive. Entrants will not be involved in operation of the vehicles during the field test which will be wholly controlled by DARPA. Even though BLM explained that the recent amendments to the CDCA plan prohibited races, this significance was immediately understood by DARPA personnel trying to stir interest in a potential pool of participants. Due to the misunderstanding about this, DARPA took some time to remove the term "race" from its vocabulary and website. The event is not intended to be a "race"; rather, it is intended to gather important technical information in an environmentally safe manner. Vehicles will start the field test in staggered intervals; all vehicles will be operated by DARPA during the field test; DARPA staff will have the capability to stop or pause each vehicle at any time; passing will be strictly controlled and the objective is not to get across a finish line first but to navigate the selected route for a safe arrival at the destination during daylight hours. The "open OHV" areas which were described as "competitive" are intended to allow the vehicles to demonstrate their capability to determine the best and appropriate route. Even though the event was mischaracterized as a "race", the facts show that the event is indeed a military field test. Unfortunately, the mischaracterization has caused some of this confusion.

Comment: Whether there is precedent for event or is event precedent setting. Does this set a precedent for other OHV activities?

Response: Previous cooperative activities with the military have been evaluated and approved in the CDCA on public lands since the passage of IM 2001-030. See, for example, the Desert Scimitar Exercise in 2002, which extended from Quartzsite, AZ to Desert Center, CA, and also involved the use of routes and staging areas, but was larger in scope. Any new proposal by desert user groups would be assessed on its own merits. This event is strictly controlled by the Government and designed to promote new technology for the safety of our armed forces. This field test is clearly a military field test and would not create justification as a precedent for events not in compliance with the CDCA Plan.

Comment: An EIS should be prepared.

Response: The commenter has not provided a basis for his assertion. To make a Finding of Significant Impact, which would be the basis for a decision to prepare an EIS, I would need to find that this event will result in unnecessary and undue degradation of the public lands, or a significant impact to the human environment. The attached analysis and the consultations conducted for this activity, and past activities that have been approved which are of fairly similar scope and have resulted in negligible impacts to sensitive resources, support a Finding of No Significant Impact. I therefore cannot find there is a basis for an EIS from the available evidence.

Comment: The event should avoid critical habitat and spring or fall desert tortoise active periods.

Response: The reasonably foreseeable impacts of the event on desert tortoise have been analyzed in the environmental assessment and a biological evaluation provided to the Service. All practicable means to avoid or minimize harm have been incorporated into the proposed action, including route selection, speed limits and shorter waypoint distances in higher density desert tortoise areas, control vehicles that can both actively stop event vehicles and passively stop event vehicles by virtue of increasing their distance from event vehicles, and reasonable and prudent measures outlined in the attached BO of the Service to

minimize take of desert tortoise and its habitat. A monitoring and enforcement program is in place to implement desert tortoise and other applicable mitigation measures.

Comment: The event will significantly affect desert tortoise. It will likely result in take of desert tortoise and modification of desert tortoise critical habitat.

Response: If desert tortoise or desert tortoise habitat may be affected, a biological opinion is required from the Service by the authorizing agency in order to consult on potential adverse effects. Take of the desert tortoise incidental to the DARPA Grand Challenge is authorized by the Service in its BO. The Service, in its BO, provides an exemption to the prohibitions against take contained in section 9 of the Endangered Species Act of 1973 (ESA), as amended, only for those activities which are legitimately associated with conduct of the event. The Service anticipates that few desert tortoises will be killed or injured during the event. As for significant effect (not affect), that is a NEPA concept rather than an ESA concept. See also the response to the question on why this event does not meet the EIS standard.

Comment: Concern regarding sufficiency of tortoise mitigation. Specifically, will biological sweeps in advance of the vehicles be effective. Suggest that biologists sweep in front of each individual vehicle as they progress through desert tortoise critical habitat. Suggest that mitigation measure 12 be amended to specify that all road kill be removed as a raven mitigation measure. Suggest that rodent burrows in DWMA's should be flagged for avoidance.

Response: DARPA has developed a desert tortoise monitoring program that addresses the comments raised. Biological sweeps will not be confined to one sweep in advance of the event. Instead, continual sweeps will be conducted as event vehicles become spaced out during the course of the day. Weather conditions and proximity to known desert tortoise concentration areas will dictate the frequency and intensity of the sweeps. DARPA is employing several of the leading experts in desert tortoise biology, as well as many highly skilled and respected desert tortoise biologists, to conduct the desert tortoise monitoring for the event. The monitoring program has been thoroughly reviewed and approved by the SERVICE. Little or no impacts to desert tortoise or desert tortoise critical habitat are expected during the event. Raven control is an integral part of DARPA's desert tortoise monitoring program; disposition of dead or injured specimens is addressed also addressed in the BO. Any encountered road kill will be removed by the biologists to prevent attracting ravens. As part of the pre-event sweep, those portions of the event route where rodent burrows are prevalent and occur within high desert tortoise concentration areas will be flagged for avoidance. However, flagging every rodent burrow along the event route is impracticable and unwarranted.

Comment: Surveys for Mojave monkey flower should include the Johnson Valley OHV area and the Camp Rock Road/power line area.

Response: Mitigation measure 14 in the EA (p. 4-15) provides that areas of the Stoddard Valley OHV area which would be used for the event will be surveyed for Mojave monkey flower, and provides for avoidance measures if present. This measure will be expanded to include other areas to be used by the action that have known potential for Mojave Monkey flower.

Comment: A Media point near Pisgah Crater is located within white-margined beardtongue habitat, a BLM-sensitive plant.

Response: The BLM and the DARPA have no objection to eliminating this media location. The media location along the National Trails Highway near Pisgah Crater will be eliminated.

Comment: Concern regarding fuels used, leaking vehicles during event operation, if a vehicle overturns, or a vehicle crashed due to the high speeds. Suggest reducing speeds, spanning event over two days, impounding and checking overnight.

Response: Event operations and a Spill Prevention and Clean-up Plan developed for the action largely addresses the comments raised. Fuels will be limited to commercially available fuels such as diesel, gasoline, or propane. No new fuel technology is being tested. DARPA's goal is to prevent the release of vehicles fluids; however, in the event of a release, spill prevention contingencies have been identified. For instance, the control vehicles will carry clean up materials, vehicles will be stored overnight with oil catchers to contain and also identify leaks. Event vehicles that are observed by the control vehicle as leaking fluids would be disqualified. Environmental sweeps will be conducted behind vehicles and any fluid release will be removed.

Event and control vehicles are not expected to exceed 50 miles per hour (mph) on navigational segments, and the anticipated average speed for these vehicles is 30 mph. At turns and crossings, vehicle speeds will be slower, consistent with safety requirements. The biologist vehicle preceding the first event vehicles and limited support vehicles may have similar speeds. Because of a higher potential for interaction with the public, speeds on paved roads will not be excessive.

Comment: The Fort Mojave Tribe has commented that archeological and Native American monitors should be present in sensitive areas.

Response: Archeological monitoring has been addressed in mitigation measure 16 in the EA (p. 4-15) and provides that "Archeological monitors shall be used in locations of substantial archeological sensitivity, as determined by the BLM archeologist in light of the Cultural Resources Evaluation and site specific field investigations." The BLM archeologist will work with the Tribe and Native American monitoring will be provided.

Comment: The event will impact Mojave Ground Squirrel (MGS).

Response: Consultation has occurred with California Department of Fish and Game (CDFG) on MGS, and all necessary measures required by CDFG to protect MGS will be implemented.

Comment: More alternatives should have been considered in depth, including military bases.

Response: Under NEPA, a "reasonable" range of alternatives must be analyzed. Alternatives may be dismissed from further consideration if they do not meet the purpose and need of the proposal or are inconsistent with an agency's mission. Several agencies were approached to allow DARPA to consider as wide a range of alternatives as possible, and still meet the proponent's overall purpose and need. All of these agencies, including Fort Irwin National Training Center, the National Park Service, and Twenty-Nine Palms Marine Base had mission-specific conflicts and/or logistical conflicts based on other activities.

Comment: Concerns were raised regarding impacts to wilderness from the action. Specifically concerns include potential impacts to people visiting wilderness areas, impacts to wilderness areas from air emissions, including PM10.

Response: No event activities will take place in wilderness areas, and no staging areas are located near wilderness areas. Some route segments are in the vicinity of wilderness areas. Impacts in these areas would be limited to those activities that will actually take place on the route such as traverse by event vehicles, control vehicles and related monitoring. All vehicles will use commercially available fuels, so

no unusual emissions would result. Based on the analysis in the EA, no significant PM10 emissions are anticipated. In addition, due to speed limits being imposed, the average speed for event vehicles will be less than 30 mph, rather than 35 mph so that PM10 emission will actually be less than anticipated. As indicated in the EA, public access to certain areas, including wilderness areas, may be limited during the event. Excepting this, no impacts to wilderness visitors are anticipated.

APPEAL RIGHTS: This decision is effective immediately. This decision may be appealed to the State Director, in accordance with the regulations contained in 43 CFR Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition pursuant for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal (43CFR 4.21). A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay **must** also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413). If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

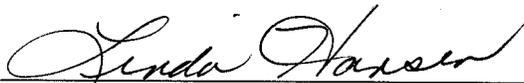
Accept as otherwise provided by law or other pertinent regulations, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

- (1) the relative harm to the parties if the stay is granted or denied,
- (2) the likelihood of the appellant's success on the merits,
- (3) the likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) whether the public interest favors granting the stay.

FINDING OF NO SIGNIFICANT IMPACT

The environmental impacts associated with the proposed action and the alternatives have been assessed. Based upon the analysis provided in the attached EA, I conclude the approved action is not a major federal action and will result in no significant impacts to the human environment under the criteria in Title 40 of Federal Regulations Subpart 1508. Preparation of an Environmental Impact Statement is not required.

Approved by



Linda Hansen
California Desert District Manager

2-12-04
Date

Attachments

Stipulations Imposed by the BLM
Environmental Assessment for the DARPA Grand Challenge
Biological Opinion from the U.S. Fish & Wildlife Service