SPECIAL CONTRACT REQUIREMENTS

The following Special Contract Requirements amend and supplement the *Standard Specifications for Construction of Roads and Bridges, on Federal Highway Projects (FP-14)*, U.S. Department of Transportation, Federal Highway Administration.

Section 101. — TERMS, FORMAT, AND DEFINITIONS

101.03 Abbreviations.

(a) Acronyms. Add the following:

EEBACS — Engineer's Estimating, Bidding, Award, and Construction System
GSA – General Services Administration

(b) US Customary abbreviations and symbols. Delete the text and substitute the following:

°F	—	degrees Fahrenheit	temperature
A	—	ampere	electric current
ac.	—	acre	area
BTU	—	British Thermal Unit	energy
cu. in. or **in^3**	—	cubic inches	volume
cu. ft., cf, ft^3 or **CUFT**	—	cubic feet	volume
cu. yd., cy, yd^3 or **CUYD**	—	cubic yards	volume
D	—	day	time
deg. or °	—	degree	plane angle
Fc	—	foot-candles	luminous intensity
fl. oz.	—	fluid ounces	volume
ft. or '	—	foot or feet	length
gal. or **GAL**	—	gallon	volume
H	—	Henry	inductance
hr. or **HR**	—	hour	time
Hz	—	hertz (s^{-1})	frequency
in. or "		inch or inches	length
K	—	kelvin	temperature
lb or **LB, lbs**	—	pound, pounds	mass
Lbf	—	pound-force	force
lnft or **LNFT**		linear foot	length
mi.	—	miles	length
min. or **m**	—	minute	time
min. or '	—	minute	plane angle
oz.	—	ounces	mass
Psi	—	pounds/square inch	pressure
Q	—	cubic feet/second	flow rate
sec. or **s**	—	second	time
sec. or "	—	second	plane angle
sq. in. or **in^2**	—	square inches	area
sq. ft., sf, ft^2 or **SQFT**	—	square feet	area
sq. yd., sy, yd^2 or **SQYD**	—	square yards	area

T	—	short ton (2000 lbs)	mass
V	—	volt (W/A)	electric potential
W	—	watt (J/s)	power
yd or YD	—	yard or yards	length
Ω	—	ohm V/A	electric resistance

(c) Metric unit abbreviations and symbols. Delete the text and substitute the following:

A	—	ampere	electric current
Cd	—	candella	luminous intensity
°C	—	degree Celsius	temperature
D	—	day	time
deg. or °	—	degree	plane angle
g or **gram**	—	gram	mass
H	—	Henry	inductance
Ha	—	hectare	area
hr. or **HR**	—	hour	time
Hz	—	hertz (s^{-1})	frequency
J	—	Joule (N m)	energy
K	—	kelvin	temperature
Kg	—	kilogram	mass
L	—	liter	volume
Lx	—	lux	illuminance
M	—	meter	length
mm	—	millimeter	length
m^2	—	meter squared	area
m^3	—	cubic meter	volume
min. or **m**	—	minute	time
min. or '	—	minute	plane angle
N	—	Newton (kg m/s^2)	force
Pa	—	Pascal (N/m^2)	pressure
sec. or **s**	—	second	time
sec. or "	—	second	plane angle
T	—	metric ton	Mass
V	—	volt (W/A)	electric potential
W	—	watt (J/s)	Power
Ω	—	ohm V/A	electric resistance

101.04 Definitions.

Add the following:

EEBACS — Engineer's Estimating, Bidding, Award, and Construction System. A web-based system used by the Government, Construction Contractors, and Subcontractors on this

Government contract to prepare *"Inspector's Daily Record of Construction Operations" (Contractors Daily Reports)* and measurement notes (pay notes and field measurement documentation).

Roadway Prism Delete the text and substitute the following:

Roadway Prism – The volume defined by the area between the original terrain cross-section and the final design cross-section multiplied by the horizontal distance between the centroids (geometric center) of the area.

Subcontractor Delete the text and substitute the following:

Subcontractor – An individual or legal entity with which the Contractor sublets part of the work. This includes subcontractors and material suppliers at any tier.

Section 104. — CONTROL OF WORK

104.03 Specifications and Drawings.

Add the following to **(a) General (2) Drawings:**

(h) Erosion and sediment control drawings for the SWPPP application.

Section 105. — CONTROL OF MATERIAL

105.01 Source of Supply and Quality Requirements. Add the following:

Materials containing petroleum-based solvents such as cutback asphalts and traffic paints may be restricted from use by local laws or ordinances in certain geographic areas. Upon presenting proof of such restrictions, alternate materials considered acceptable to the CO may be substituted for the materials specified in the contract.

Certify, according to Subsection 107.10 (d)(2), that sources of rock, sand, gravel, earth, subsoil, or other natural material imported into the project construction limits are noxious weed free.

105.04 Storing and Handling Material. Amend as follows:

Add the following after the third sentence of the second paragraph:

For Contractor-located, non-commercial staging, storing, and material handling areas, secure environmental clearances according to Subsection 107.10.

Add the following:

The Contractor may use the areas shown in the Plans for a staging area and storage of materials. Two staging areas may be used:

- An existing gravel road at Station 101+00 Rt
- An existing gravel parking area at Station 277+00 to 278+00 Lt

Use all products according to the manufacturer's recommendations for handling, storage, and disposal. Follow the requirements of FAR Clause 52.236-10 Operations and Storage Areas and FAR Clause 52.236-12 Cleaning Up. Maintain the staging and storage areas in a clean, neat, and orderly condition satisfactory to the CO.

Store construction materials within the limits indicated on the contract drawings. Properly store materials according to the applicable permit and the requirements in Section 107, 157, 203, 204, 624, and 625. Check the storage areas weekly and according to the applicable permit.

Store construction, building and waste materials, and containers in designated areas indoors or protect with a suitable covering.

Submit a site map showing the material storage and stockpile locations at least 14 calendar days prior to the start of construction activities.

Keep the manufacturer's MSDS, an inventory of the material, and emergency numbers near the storage area. Take appropriate measures to ensure that incompatible chemicals are not stored next to each other.

Do not disturb any previously undisturbed areas.

Section 106. — ACCEPTANCE OF WORK

106.01 Conformity with Contract Requirements. Delete (a) and (b) and substitute the following:

(a) Disputing Government test results. If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve

the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

(1) Sampling method

(2) Number of samples

(3) Sample transport

(4) Test procedures

(5) Testing laboratories

(6) Reporting

(7) Estimated time and costs

(8) Validation process

(b) Alternatives to removing and replacing non-conforming work. As an alternative to removal and replacement, the Contractor may submit a written request to:

(1) Have the work accepted at a reduced price; or

(2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

Add the following after (b):

The number of significant figures used in the calculations will be according to ASTM E 29, absolute method.

Where sample/testing procedures make reference to AASHTO, ASTM, or other standards (designated as FLH T), the procedure as modified in the Materials Manual shall govern. Where the specifications make reference to AASHTO Test T11, "Procedure B - Washing Using a Wetting Agent" shall be the procedure followed.

Where the specifications make reference to AASHTO Test T310, "Direct Transmission Method of In-Place Nuclear Density and Moisture Content" shall be the procedure followed.

106.02 Visual Inspection. Delete the Subsection and substitute the following:

106.02 Visual Inspection. Acceptance is based on visual inspection of the work for compliance with the contract requirements. In the absence of specific contract requirements or tolerances, use prevailing industry standards.

106.03 Certification. Amend as follows:

Add the following after the second paragraph:

See Table 106-3 for schedule for full or partial acceptance by material certification. Submit certification and sample of material for testing as required.

Delete the third paragraph and substitute the following:

Check certifications before incorporating the material into the work to ensure that the requirements of the contract have been met. Mark the certifications with the following information:

- Project number and name;
- Pay item number and description;
- Contractor signed certification stating "to the best of our knowledge the materials certified by the attached certification represent the materials incorporated into the work of this contract"; and
- Date.

Table 106-3 Schedule For Full or Partial Acceptance by Materials Certification. Add Table 106-3 following Table 106-2.

Table 106-3
Schedule For Full or Partial Acceptance by Materials Certification

Section	Description	Material	Material Property Or Specification	Frequency	
				Certification	Sample
302	Minor Crushed Aggregate	Crushed Aggregate	Source, Quality and Gradation	1 per source	1 per source
312	Dust Palliative	Calcium Chloride Magnesium Chloride, Lignosulfonate,	As specified	1 per shipment	First shipment
403	Asphalt Concrete	Aggregate Asphalt Mix	Source quality, Gradation, Stability, and Grade	1 per mix	1 per source
634 and 635	Permanent Pavement Markings, Temporary Traffic Control	634.02 as applicable, 635 as applicable	As specified	1 per source	-----
701	Hydraulic Cement	Portland Cement, Blended Hydraulic Cement, Masonry and Mortar Cement	AASHTO M 85, M 240, ASTM C 91 and ASTM C1392 as applicable	1 per shipment	1 per 100 tons
702.01	Asphalt Material	Asphalt Cement	AASHTO M 226 or M 320, as applicable	1 per shipment	1 per shipment

Section	Description	Material	Material Property Or Specification	Frequency	
				Certification	Sample
702.02	Asphalt Material	Emulsified Asphalt	AASHTO M 140 or M 208 as applicable	1 per shipment	1 per shipment
702.03	Asphalt Material	Asphalt Materials used for Damproofing and Waterproofing Concrete and Masonry Surfaces	As specified for each type of asphalt material	1 per shipment	-----
702.05	Antistrip	As specified	As applicable	1 per shipment	-----
706	Concrete and Plastic Pipe	As specified	As applicable	1 per shipment	-----
707	Metal Pipe	As specified	As applicable	1 per shipment	-----
708	Plastic Pipe	As specified	As applicable	1 per shipment	-----
709	Reinforcing and Prestressing Steel	As specified	As applicable	1 per shipment	For 709.01 submit 3, 1-yard (1-meter) bars of each size and grade of bar furnished. 709.02 submit 1 6-foot (2-meter) length for each size furnished
710	Fence and Guardrail	As specified	As applicable	1 per shipment	-----
711	Concrete Curing Material and Admixtures	As specified	As applicable	1 per material source per material type	-----
712	Joint Material (all)	As specified	As applicable	1 per shipment	-----
713	Roadside Improvement Materials (all)	As specified	As applicable	1 per shipment	-----
714	Geosynthetic Material (all)	As specified	As applicable	1 per shipment	1 per project per type
715	Piling	As specified	As applicable	1 per shipment	-----
716	Material for Timber Structures	Timber and Hardware	As applicable	1 per shipment	-----
717	Structural Metal	As specified	As applicable	1 per shipment	717.01(e) minimum 6 per shipment for each size used.

Section	Description	Material	Material Property Or Specification	Frequency	
				Certification	Sample
					717.10 1 per project
718	Traffic Signing and Marking Material (all)	As specified	As applicable	1 per shipment	-----
719	Paint	As specified	As applicable	1 per batch\lot	1 sample for quantities > 25 gallons (100L)
720	Structural Wall and Stabilized Embankment Material (all)	As specified	As applicable	1 per shipment per material type	-----
721	Electrical and Illumination Material (all)	As specified	As applicable	1 per shipment per material type	-----
722	Anchor Material	As specified	As applicable	1 per shipment per material type	-----
725	Miscellaneous materials	As specified	As applicable	1 per shipment per material type	-----

Section 107. — LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.01 Laws to be Observed. Add the following:

Section 401 and 404 of the Clean Water Act.

Comply with the terms and conditions of any permits that are issued for the performance of work within the waters of the U.S., including Section 404 permits and Section 401 water quality certifications.

Maintain and require all subcontractor(s), that are preforming work covered under the applicable permits, to maintain at the construction site or in a nearby field office, a copy of all permits, all Notification and Compliance Reporting Requirements, and all records demonstrating that every requirement of the permits have been complied with.

The Contractor is responsible for obtaining any other Federal, State, or local authorizations as required by law, and extending any contractor obtained permits that expire within the expected construction schedule.

National Pollutant Discharge Elimination System (NPDES)

Comply with the requirements of the California Construction General Permit (CGP) Order No. 2009-0009-DWQ as amended 07/17/2012. A copy of the permit is located at:

http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml

This permit expired on 09/02/2014 but has been administratively extended until a new permit is issued. Amend the Storm Water Pollution Prevention Plan (SWPPP) and site plan when the new permit goes into effect to meet new permit conditions.

Allow 5 days from submittal of NOI to issuance of permit coverage.

(a) General. Designate a qualified Erosion Control Supervisor according to Subsection 157.03.

Obtain a separate NPDES permit associated with industrial activity for any mobile asphalt and concrete plants that provide material for the project. Provide a copy of the permit and acknowledgement letter to the CO for their records.

(b) Notice of Intent (NOI). File a NOI as a primary operator if required or permitted. Provide a copy of the NOI and confirmation letter to the CO. The Government will also file a separate NOI if required and provide that information to the Contractor for inclusion in the SWPPP. Do not perform any ground disturbing activities including clearing, grubbing, or earthwork until an acknowledgement letter is received from the regulatory agency and the SWPPP has been approved and implemented.

Post all project authorization numbers near the entrance to the site and on the bulletin board.

(c) Payment of Permit Fees. Submit the appropriate permit fees and renewal fees required for both the Contractor and Government to the regulatory agency.

(d) Notice of Termination (NOT). File a NOT if the conditions listed in the CGP have been met or transfer the NOI to the maintaining agency when project has reached final acceptance.

At the completion of the project, provide the CO with the complete SWPPP, including inspection forms, logs, and all other required documentation added during the project.

107.02 Protection and Restoration of Property and Landscape

Add the following at the end of this subsection:

The locations of the utilities shown in the plans have been certified to a Quality Level D, with spot locations certified to a Quality Level C according to the CFLHD Utility Data Quality Certification requirements:

http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Table 107-1
Status of Utilities

	Company	Utility Type	Contact Name	Phone Number	Status 1, 2, 3, or 4	
1	BLM	Electric Power – Underground & Overhead	Dave Kotlarski	760-252-6040	4	

Status 1: The utilities are in conflict with the project and require relocation by others during construction.

Status 2: The utilities are in conflict with the project and require relocation by the Contractor during construction.

Status 3: The utilities are in conflict with the project and require relocation by others before construction.

Status 4: The utilities are located within the project rights of way but require no relocation.

Underground electric power is in the work area at the Fee Station and the ICC (Option X) and will need to be located and potholed to verify that the lines are buried deep enough that they will not be impacted by construction.

Do not disturb USGS brass monument, stamped ¼ S36 S31 1955, located at approximately Station 159+70 Rt. Protect with construction fencing or other methods as approved by the CO.

107.05 Responsibility for Damage Claims. Delete the first paragraph and substitute the following:

Indemnify and hold harmless the Government, its employees, and its consultants from suits; actions; or claims brought for injuries or damage received or sustained by a person, persons, or property resulting from the construction operations or arising out of the negligent performance of the contract. Additionally, name the California State Lands Commission (Commission) as an additional insured on the liability insurance policy, which is procured in compliance with this section, for all work performed under the contract on state land and within temporary construction easement between Stations 120+93 and 160+08. Provide satisfactory evidence of this insurance coverage with the Commission being named as an additional insured.

107.10 Environmental Protection.

(a) Federal Water Pollution Control Act (Clean Water Act) 33 USC § 1251 et seq.

Add the following:

(4) Do not ford running streams with construction equipment. Obtain approval from the CO to use temporary bridges or other structures whenever crossings are necessary.

(5) Immediately clear ephemeral drainages, intermittent and perennial streams, lakes and reservoirs of all work items, debris or other obstructions placed by or resulting from construction operations.

(6) Locate machinery servicing and refueling areas a minimum of 100 feet away from dry washes, wet areas and surface waters including streambeds and washes to reduce the possibility and minimize the impacts of accidental spills or discharges. Provide the location and size of servicing and fueling areas to the CO for approval. During servicing, collect all pollutants and do not allow them to enter any waterway, riparian area, or stream course.

(7) Do not refuel, maintain, or repair equipment or vehicles within lands under CA State Lands Commissions jurisdiction, between stations 120+93 and 160+08.

(8) Suspend all work at any location where drainage is actively flowing across the road.

(b) Oil and hazardous substances. Amend as follows:

Add the following to the end of the third paragraph:

Sand or soils are not approved absorbent materials.

Add the following to the end of the fourth paragraph:

Report the spill to the appropriate federal, state, and local authorities as required by the SPCC plan or hazardous spill plan.

(c) Vehicles and equipment. Add the following:

All vehicles and equipment entering the project area must be clean of noxious weeds and free from oil leaks and are subject to inspection. Wash all construction equipment to thoroughly remove all dirt, plant, and other foreign material prior to entering the project. Particular attention must be shown to the under carriage and any surface where soil containing exotic seeds may exist. Allow the CO to inspect each piece of equipment before entering the project. Provide the cleaning and inspection records to the CO. Equipment found operating on the project that has not been inspected or has oil leaks will be shut down and subject to citation.

(d) Clearances for Contractor-selected, noncommercial areas. Amend as follows:

Add the following to the end of the first paragraph:

Do not import into the project limits rock, sand, gravel, earth, subsoil, or other natural materials from a Contractor-selected non-commercial materials source, that have not been certified free of noxious weeds. Materials imported into the project limits which do not include a noxious weed free certification may be rejected and ordered by the CO to be removed from the project limits. The CO has the discretion of requesting inspection of

certified materials by a third party and rejecting the use of the source if noxious weeds or seeds thereof are found to be present.

Add the following:

(5) Any required Certifications.

Add the following subsection:

(e) Environmental Commitments.

At least 21 days prior to initiation of construction activities, furnish a qualified biologist resume to the CO for review and approval by the BLM, USFWS and FHWA in accordance with Section 623. The qualified biologist will perform the following:

(1) Worker Environmental Awareness Training.

(a) Notify the CO at least 21 days before starting work so a Worker Environmental Awareness Training orientation session is coordinated with the BLM.

(b) Conduct the Worker Environmental Awareness Training and provide the training for awareness of the presence of the desert tortoise and sensitive resources (including plant and animal species that may be encountered on-site), Endangered Species Act requirements for protecting listed species and critical habitat, and measures to be taken during construction to reduce adverse impacts to these species and habitat. Include information about BLM lands, regulations, appropriate housekeeping in the orientation session. Emphasize the following information relative to the desert tortoise in the training:

(1) Distribution on the job site;
(2) General behavior and ecology;
(3) Sensitivity to human activities;
(4) Legal protection;
(5) Penalties for violating State or federal laws;
(6) Reporting requirements; and
(7) Project protective mitigation measures.

(c) Develop and provide handouts summarizing the information presented during the training to all workers employed on the project. Include relevant information, pictures, protocols, and other information in the handouts.

(d) Supervisory personnel are to attend the orientation session before commencing work. Supervisors will be responsible for training construction staff. Provide handouts from the biological monitor to aid construction workers in issue identification.

(e) Record the training and provide a video and sign-in sheet for all Contractor employees and subcontractors who are not able to attend the initial training. Provide an Environmental Awareness poster and arrange for it to be posted on-site.

(f) Provide interpretation for non-English speaking workers.

(2) Pre-Construction Surveys.

Conduct sensitive species surveys and monitor the work area no more than 14 days before construction activities for the presence of the following:

(a) Mojave desert tortoise and Mojave desert tortoise burrows;

(b) Fringe-toed lizards;

(c) burrowing owls and burrowing owl nests; and

(d) Migratory birds and migratory bird nests.

Notify the CO if Mojave desert tortoise, Mojave desert tortoise burrows, fringe-toed lizards or active burrowing owl or migratory bird nests are located during the preconstruction surveys. Establish appropriate avoidance strategies and buffers to avoid disturbances to individuals, burrows, and nest sites.

(3) Biological Monitoring.

Perform biological monitoring during all ground disturbing activities within the project limits for the duration of construction. The biological monitor shall:

(a) Examine work areas for the presence of desert tortoise or their burrows and ensure compliance with all BLM/USFWS approved Desert tortoise guidelines;

(b) Move any Mojave desert tortoise or Mojave fringe-toed lizards out of harm's way during construction;

(c) Initiate a stop work order with the CO in the event of non-compliance with the Biological Opinion and Activity Request Form;

(d) Initiate a stop work order with the CO for any work within 100 feet of any area occupied by burrowing owls; and

(e) Prepare and submit a biological monitoring report to the CO within 30 days of project completion or termination of construction activities that details all biological monitoring activities completed during construction.

See Section 623.05 for requirements of the biologist.

107.11 Protection of Forests, Parks, and Public Lands. Delete the Subsection and substitute the following:

Comply with regulations of the state fire marshal, conservation commission, Federal land management agency, or other authority having jurisdiction governing the protection of land including or adjacent to the project. The CO will order the suspension of operations when conditions are unsafe as determined by the CO and the land management agency.

Keep work areas clean of debris and trash. Store trash in predator-proof containers and remove from the project weekly.

Section 108. — PROSECUTION AND PROGRESS

108.01 Commencement, Prosecution, and Completion of Work. Add the following:

Limit operations according to Subsection 107.10(e) and Section 156.

Limit operations as follows:

(a) No work 3 days before Easter to 2 days after Easter.

(b) No work at the Low Water Crossing, or in the river channel, when any water is present in the Amargosa River, including any ground disturbance in the river channel, removal of the existing concrete low water crossing, formwork, and construction of the new concrete low water crossing.

(c) No work during Nevada Day and Halloween (October 26th to 31st), and Dumont Dunes Road must be opened for two-way traffic.

(d) Comply with the terms and conditions of the Section 404 permits and Section 401 water quality certifications as described in Subsection 107.01.

(e) Complete all low-water-crossing work and asphalt pavement on Dumont Dunes Road by Friday, October 21, 2022.

Perform no work except to maintain traffic control devices, erosion control devices, the roadway driving surface, and to control dust during the listed Federal and local holidays and surrounding days as shown in Table 108-2.

Table 108-2
Federal Holidays and Surrounding Days

Federal Holiday	Time	Remarks
Easter Day	12:00 Noon Thursday to 6:00 am Tuesday	-
Memorial Day	12:00 Noon Friday to 6:00 am Tuesday	-

Independence Day	12:00 Noon July 3 to 6:00 am July 5	If July 4 falls on a weekend, Friday, or Monday, do not work the weekend.
Labor Day	12:00 Noon Friday to 6:00 am Tuesday	-
Columbus Day	12:00 Noon Friday to 6:00 am Tuesday	-
Halloween /Nevada Day (local holiday)	12:00 Noon Wednesday to 6:00 am Tuesday	-
Veteran's Day	12:00 Noon Thursday to 6:00 am Monday	-
Thanksgiving	12:00 Noon Wednesday to 6:00 am Monday	-
Christmas / New Year's	12:00 Noon December 23 to 6:00 am January 2	If December 23 or January 1 falls on a Monday, do not work the adjacent weekend and do not work on December 23. If January 1 falls on a Friday, do not work the weekend.

Schedule at least 2 non-work days out of every 14 calendar days. The selected non-work days do not need to be consecutive, but they must be scheduled. Notify the CO at least 2 weeks before changing the scheduled days off.

The CO may grant written approval for exemptions to scheduled days off for specific project operations and for periods of limited duration.

The CO will issue a Notice to Proceed before commencement of any work. The contract completion date is November 10, 2022.

No additional time will be added to the contract completion time in the event of either Option (X or Y) is awarded.

Use the Government's web-based system, *Engineer's Estimating, Bidding, Award, and Construction System (EEBACS),* to prepare all "*Inspector's Daily Record of Construction Operations*" (*Contractors Daily Reports)* and measurement notes (pay notes and field measurement documentation).

Attend a training session on the use of EEBACS. The training session will require up to 4 hours. No more than 3 Contractor staff may attend the training unless approved by the CO. The Contractor shall be responsible for training additional staff.

Complete and electronically submit *"EEBACS User Account Form"* (Form EEBACS-001) for each individual requiring EEBACS access. Submit forms to the CO at the preconstruction conference or at least 10 days prior to the start of any contract work or EEBACS training. As needed, request additional system access using Form EEBACS-001 and allow 7 days for system access.

Maintain active EEBACS accounts for all contractor staff who use EEBACS and ensure that the CO is notified within 24 hours after an account holder is reassigned or no longer employed by the Contractor. Within 24 hours after an account holder is reassigned or no longer employed by the Contractor, submit an EEBACS-001 form requesting that the account be disabled.

The electronic version of EEBACS-001 is available at:

https://highways.dot.gov/federal-lands/estimates/forms

108.02 Subcontracting. Delete the third paragraph and substitute the following:

Within 14 days of subcontract award, submit a completed SF 1413 and 1413S. Complete Part I for each Subcontractor and include Part II when the Subcontractor performs on-site work. Complete other forms that may be required by the Government to show the work subcontracted and the total dollar amount of the subcontract. Submit the above required information for each Subcontractor at lower tiers.

Delete Table 108-1 and substitute the following:

Table 108-1
Charge for Liquidated Damages for Each Day Work Is Not Substantially Completed

Original Contract Price		Daily Charge
From More Than —	To and Including —	
$ 0	$ 1,000,000	$ 1,600
$ 1,000,000	$ 2,000,000	$ 2,400
$ 2,000,000	$ 5,000,000	$ 4,100
$ 5,000,000	$ 10,000,000	$ 5,600
$ 10,000,000	and more	$ 6,500

Section 109. — MEASUREMENT AND PAYMENT

109.01 Measurement of Work. Add the following after the sixth paragraph:

Prepare, sign, and submit electronic measurement notes (pay notes and supporting field documentation) using EEBACS. Measurement notes will be reviewed by the CO. Unacceptable measurement notes will be electronically rejected and returned. Correct rejected measurement notes and resubmit electronically.

109.02 Measurement Terms and Definitions.

(o) Square foot and Square yard (Square meter). Add the following: Do not measure overlaps.

109.08 Progress Payments.

(a) General. Delete the last sentence and substitute the following:

The CO may withhold partial progress payment according to Subsection 109.08 (g) for failure to make satisfactory progress until a construction schedule or schedule update is approved by the CO.

(b) Closing date and invoice submittal date. Delete the text and substitute the following:

Submit invoices to the designated billing office by the 7th day after the closing date. Invoices received by the designated billing office after the 16th day following the closing date will not be accepted for payment processing that month. Include late, unprocessed invoice submittals in the following months invoice.

(d) Government's receiving report. Delete the first sentence and substitute the following:

The Government's receiving report will be developed using the measurements and quantities from Pay Notes received by the CO in EEBACS and determined acceptable.

(e) Processing progress payment requests.

(1) Proper invoices. Delete the title and text and substitute the following:

(1) Invoices received by the 7th day following the closing date.

(a) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be paid.

(b) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(c), or if any of the quantities or unit prices shown on the Contractor's invoice exceed the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be deemed defective and the Contractor so notified according to FAR Clause 52.232-27(a)(2). Defective invoices will not be corrected

by the Government and will be returned to the Contractor within 7 days after the Government's designated billing office receives the invoice.

Revise and resubmit returned invoices by the 18th day following the closing date. The CO will evaluate the revised invoice. If the invoice still does not meet the requirements of Subsection 109.08(c), the Contractor will be so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the revised invoice meets the requirements of Subsection 109.08(c), but still had quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item or work will be used. The Contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing by the 23rd day following the closing date. The Contractor will be notified by the 23rd day following the closing date of the reasons for any changes to the invoice.

(2) Defective invoices. Delete the title and text and substitute the following:

(2) Invoices received between the 8th and 16th day following the closing date.

(a) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the CO's receiving report, the invoice will be deemed proper and forwarded for processing within 7 days of receipt.

(b) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(c), the invoice will be deemed defective, the Contractor so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the invoice meets the requirements of Subsection 109.08(c) but has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item of work will be used. The Contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing within 7 days of the Government's receipt of the invoice. The Contractor will be notified of the reasons for any changes to the invoice.

(f) Partial payments. Delete the subsection and substitute the following:

(f) Partial payments. Progress payments may include partial payment for material to be incorporated in the work according to FAR Clause 52.232-5(b)(2), provided the material meets the requirements of the contract and is delivered on, or in the vicinity of, the project site or stored in acceptable storage places.

Partial payments for stockpiled manufactured material (aggregates) will be based on Contractor process control test results. If test results show the material to be out-of-

specification, or in "reject" where statistical evaluation procedures are used, no payment for stockpiled materials will be made.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

Individual and cumulative partial payments for preparatory work and material will not exceed the lesser of:

(1) 80 percent of the contract bid price for the item; or

(2) 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract. The CO may adjust partial payments as necessary to protect the Government.

Section 152. — CONSTRUCTION SURVEY AND STAKING

Construction Requirements

152.04 General. Amend as follows:

Add the following to the second paragraph:

The Government will establish basic survey control points for vertical and horizontal control of the project.

The Government will furnish the following:

(1) Computer listings containing: horizontal alignment and superelevation data.

Delete the last sentence of the fourth paragraph from the bottom of the subsection and substitute the following:

Reestablish missing control points and stakes before slope staking begins.

152.05 Survey and Staking Requirements. Add the following:

(m) Centerline verification and staking. Verify stationing shown in the plans by measuring along the existing centerline with a method approved by the CO. Calibrate all measuring devices and furnish calibration data to CO before use. Use landmarks (e.g., culverts, turnouts, approach roads) to verify that the ground stationing matches the stationing shown on the plans. Use hubs to mark each centerline station. Add station equations to adjust field

stationing to match the plans. Notify the CO on any readjustment or change to stationing or establishment of additional centerline points.

Measure the existing surface width at 200-foot (60 meters) stationing intervals on tangent and at 50-foot (15 meter) intervals on curves. At each location, each side of the roadway and outside the construction limits, place an offset stake of adequate dimensions to place all required information. Label each stake with the following information corresponding to each respective lane:

(1) Station

(2) Offset from measured centerline or other location as directed by the CO

(3) Offset from the proposed edge of pavement

Measure stations to the nearest foot (meter), offsets to the nearest 2 inches (50 millimeters). Record the above information and provide to the CO.

Use this recorded information to control the proposed roadway width and establish the proposed centerline.

Establish control lines from station 270+00 to station 283+00 from the existing gravel layout at the Fee Station and the Plans.

(n) Template control staking. Provide Template Control Staking from the beginning of the project at Station 100+12 to Station 267+00 for Dumont Dunes Road and for all of Little Dumont Dunes Road. Verify stationing shown in the plans by measuring along the proposed centerline with a method approved by the CO. Calibrate all measuring devices and furnish calibration data to CO before use. Use landmarks (e.g., culverts, turnouts, approach roads) to verify that the ground stationing matches the stationing shown on the plans. Use hubs to mark each centerline station. Add station equations to adjust field stationing to match the plans. Notify the CO on any readjustment or change to stationing or establishment of additional centerline points.

After spreading of existing gravel berm material and prior to full depth reclamation, measure the existing roadway surface width, elevation at centerline, elevation at left edge and right edge of road, and cross-slopes at beginning and end points of curves and tangents, at changes in roadway template, at the beginning and ending of proposed superelevation transitions and runoffs, at 100 foot (30 meter) stationing intervals on tangents, and at 25 foot (15 meter) intervals on curves. At each location, each side of the roadway, and outside the construction limits, place an offset stake of adequate dimensions to place all required information. Label each stake with the following information corresponding to each respective lane:

(1) Station;

(2) Elevation at centerline;

(3) Offset from proposed centerline or other location;

(4) Offset from the proposed edge of pavement; and

(5) Existing cross-slope from left edge to right edge of road. If cross-slope is to be changed to match the Plans, provide proposed change.

Measure stations to the nearest foot (meter), offsets to the nearest 2 inches (50 millimeters), elevations to the nearest 1 inch (25 millimeters) and cross-slopes to the nearest 0.2 percent.

Record the above information and provide one printed copy to the CO. Provide the CO a list of any stations or locations where the proposed pavement edge is within 6 feet (1.8 meters) of a break in the topography of the shoulder. The CO will determine if corrective action is required.

Use the recorded information to establish the proposed roadway template. Make minor adjustments to the vertical profile and horizontal alignment to produce a smooth flowing, best fit roadway. The vertical alignment need not be a geometrically computed profile and may be field adjusted up to 3 inches (75 millimeters). Do not make changes to the horizontal alignment without prior approval of the CO. Proposed cross-slope information shown in the plans is typical and grading adjustments may only be altered as necessary to fit field conditions when approved by the CO. Submit the proposed roadway alignment to the CO for approval. Allow 14 days for review.

Compute the appropriate grade adjustment to avoid cuts greater than 2-inches (50 mm) below the existing roadway surface. Set grade finishing stakes on roadway edges to control cross slope.

On curves, compute the appropriate grade adjustment from the measured elevation differences to obtain a consistent cross-slope along the curve length (typically an average of the measured cross-slopes) within a tolerance of ±0.5 percent. Where possible raise the elevation of a shoulder to make the adjustment. Only lower the elevation of a shoulder when approved by the CO. Set a grade finishing stake on either shoulder (typically the shoulder point to be raised) to control the cross-slope.

Set hubs and adjust grades to the approved roadway template prior to the FDR work.

The methodology used to accomplish the existing roadway surface measurement, template control staking, and to determine template adjustments shall be the Contractor's option, but the methods will be subject to the approval of the CO.

Measurement

152.07 Delete the third paragraph and substitute the following:

Do not measure miscellaneous survey and staking.

152.07 Amend as follows:

Add the following to the fourth paragraph:

Reestablishing missing control points and stakes will be measured under Special labor, Hired survey services when it is paid by the hour.

Add the following:

Measure centerline verification and staking only one time per project.

Measure template control staking only one time per project.

Section 153. — CONTRACTOR QUALITY CONTROL

Description

153.01 Add the following:

This work also consists of using EEBACS to prepare electronic "*Inspector's Daily Record of Construction Operations*" (*Contractors Daily Reports)* and measurement notes (pay notes), including entering labor, equipment, subcontractors, and inspection records into the system.

Construction Requirements

153.02 Qualifications.

(a)(1) Full-time, on-site QCM. Delete subsections *(a)* and *(b)* and substitute the following:

(a) Four years of experience managing quality control on highway construction projects of similar type and scope, and

(b) National Institute for Certification in Engineering Technologies (NICET) Level III certification, or equivalent, in highway construction or highway material.

153.03 Quality Control Plan (QCP).

(b) Quality control procedures

(2) Add the following: List the material to be tested by pay item, tests to be conducted, the location of sampling, and the frequency of testing.

Add the following:

(d) Subcontractors and suppliers. Include the work of all subcontractors. If a subcontractor is to perform work under this Section, explain how the subcontractor's inspection plan will interface with the Prime Contractor first tier subcontractors and lower tier subcontractors and

organizations, and the CO. Include the work of major suppliers and suppliers of structural and geotechnical services and materials.

Add the following:

Modifications or additions may be required to any part of the plan that is not adequately covered. Acceptance of the quality control plan will be based on the inclusion of the required information. Acceptance does not imply any warranty by the Government that the plan will result in consistent contract compliance. It remains the responsibility of the Contractor to demonstrate such compliance.

153.04 Prosecution of Work. Delete the sentence and substitute the following:

Address each of the subjects shown for each phase of construction:

(a) Preparatory phase.

(1) Delete the paragraph and substitute the following:

In a preparatory phase meeting, review the contract requirements for the work; the process for constructing the work; and the plan for inspecting, testing, measuring, and reporting the work. Include the project superintendent, the quality control supervisor (QCS), the foreman for the work to be performed, and the CO in the meeting. Schedule and conduct a preparatory meeting for each type of work to be performed at least one week prior to beginning the work.

(b) Start-up phase.

(1) Delete the paragraph and substitute the following:

(1) In a start-up phase meeting, review the contract requirements and the processes for constructing the work with the personnel who will be performing the work. Invite the CO, project superintendent, QCS, testers, and inspectors of the work being performed, and the personnel directly supervising and performing the work. Review the planned testing, inspection, and reporting requirements with the quality control personnel responsible for the testing and inspection. Explain the reporting procedures to be used when defective work is identified. Conduct a start-up meeting for each type of work to be performed upon beginning the work.

(c) Production phase. Add the following:

(4) Provide feedback on processes and deficiencies. Identify root causes of deficiencies and make timely and effective changes to work processes to prevent repeated deficiencies.

153.05 Sampling and Testing. Delete the text and substitute the following:

153.05 Sampling and Testing.

Perform sampling and testing required by the accepted QCP. As a minimum perform process control testing according to the Sampling, Testing and Acceptance Requirements tables at the end of each Section where applicable. Where no minimums are specified, submit proposed tests to be performed and the proposed sampling and testing frequencies.

(a) Sample Splitting. Schedules and times or locations for obtaining on-site split samples for Government use will be provided by the CO using a procedure for random sampling. Sample any material that appears defective or inconsistent with similar material being produced, unless such material is voluntarily removed and replaced or otherwise corrected according to Subsection 106.01

(b) Testing. Furnish a laboratory equipped with all test equipment necessary to satisfy the requirements of the contract. Ensure test equipment has been checked, calibrated, standardized and/or otherwise verified in accordance with AASHTO and ASTM standards by an individual qualified to perform the work. Perform an equipment inspection after the laboratory has been moved to its permanent location on the project site, and anytime it is moved thereafter. Inspect equipment within 45 days of actual use for project testing, and at least once a year thereafter. Do not use equipment that has not been inspected or is found to be deficient. Mark deficient equipment and take it out-of-service until repaired or replaced and shown by subsequent inspection to perform as required. Maintain records documenting laboratory equipment inspections. Provide certification(s) stating the equipment conforms to testing requirements and provide evidence of current inspection. Keep laboratory facilities clean and maintain equipment in proper working condition. Allow the CO unrestricted access to the laboratory for inspection and review.

The CO may require a demonstration of proficiency in sampling and testing capabilities. One or more proficiency samples may be provided by the Government to verify basic qualifications. Provide the results of the proficiency samples to the CO within 48 hours of receipt of the material.

153.06 Certifications. Delete the text and substitute the following:

For materials or work accepted by certification according to Subsection 106.03, review all certifications to ensure compliance with the requirements of the contract prior to incorporating materials into the work and provide a signed copy of the reviewed certification(s) to the CO. According to FAR Subpart 46.407, materials or work without proper certification will be rejected in writing, and payment for such material or work will be withheld until proper certification has been provided to the CO.

153.07 Records and Control Charts. Delete the first sentence and substitute the following:

Maintain complete testing and inspection records by pay item number and make them accessible to the CO.

(a) Quality control and construction operations reports. Delete the text and substitute the following:

For each day of the contract, prepare an "*Inspector's Daily Record of Construction Operations*" (*Contractors Daily Reports (CDR)*) using EEBACS. Enter initial data for Labor/Equipment and Subcontractors prior beginning any work. Maintain and update the Labor/Equipment and Subcontractors data to reflect ongoing changes as they occur. Report operations or items of work separately, with manpower and equipment assigned to each operation separately. Detail inspection results, including deficiencies observed and corrective actions taken. Complete a CDR for each contractor and subcontractor working that day.

When submitting test results on material being incorporated into the work, report test results within the reporting times indicated in the sampling and testing requirements at the end of each section or as specified in the contract.

Enter the following data into EEBACS:

(1) Subcontractors data.

(2) Labor/Equipment.

(a) All manpower and equipment, including contractor and subcontractors. Complete all data fields.

(b) Labor: Type/classification, move-in date, move-out date, hourly rate, the contractor or subcontractor, and name.

(c) Equipment: Type/classification, move-in date, move-out date, make, model, and year of equipment manufacture.

Certify all CDR's using the following statement:

"I certify that the information contained in this record is accurate and that work documented herein complies with the contract. Exceptions to this certification are documented as a part of this record."

Submit certified CDR's that have been signed by a person who has both responsibility for the inspection system and signature authority.

Submit the record and certification within 24 hours of the work being performed. If the CDR is incomplete, in error, or otherwise misleading, the CDR will be rejected and returned within EEBACS with corrections noted. Correct rejected CDRs and resubmit the revised CDR within 24 hours. When chronic errors or omissions occur, correct the procedures by which the records are produced.

153.08 Acceptance. Add the following:

Performance of the work may be stopped according to Subsection 108.05, either in whole or in part, for failure to comply with the requirements of this Section. The Government may charge to the Contractor the cost of any additional inspections required when the work being inspected is

found not to comply with contract requirements during the initial inspection. Work stop orders, due to recurring deficiencies of work required by this Section, will be rescinded after the Contractor demonstrates to the CO that changes were made to the quality control plan and system which resulted in the correction of those deficiencies. There will be no adjustment in the contract time, or payments to the Contractor for any impacts, delays, or other costs due to any periods of work stoppage resulting from failure to comply with the requirements of this Section.

EEBACS electronic documentation will be evaluated under Subsection 106.02.

153.09 Measurement and Payment. Delete the text and substitute the following:

Measurement

153.09 Measure contractor quality control according to Subsection 109.02.

Do not measure EEBACS electronic documentation for payment.

Payment

153.10 The accepted quantities will be paid at the contract price per unit of measurement for the Section 153 pay item listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for Contractor quality control will be paid as follows:

(1) 25 percent of the item amount, not to exceed 0.5 percent of the original contract amount, will be paid after the contractor quality control plan is accepted; all testing facilities are in place; qualified quality control supervisor, inspection, and sampling and testing personnel are in position to provide quality control activities; and the work being inspected or tested has started.

(2) 65 percent of the total lump sum will be prorated for payment based on the completed portion of the total work not including the original 25 percent completed under **(1)** above.

(3) Payment of the remaining 10 percent of the lump sum will be paid when all inspections, test results, submittals, and reports are complete and accepted.

Section 154. — CONTRACTOR SAMPLING AND TESTING

Construction Requirements

154.03 Sampling. Add the following:

Perform the initial curing of all concrete test cylinders. Provide for transporting the government verification cylinders to the FHWA-Central Federal Lands Highway's Laboratory unless other testing facilities are authorized by the CO.

Label each concrete mold with the name and number of the Project, the cylinder number, date molded, location of the sample, and the test age (i.e. – 7, 14, or 28 days). Label the mold after casting and the cylinder after stripping to ensure the sample can be identified throughout the entire curing process.

Provide the required cylinder molds.

154.04 Testing Add the following:

Where Process Control Sampling and Testing frequencies are identical to the Sampling, Testing, and Acceptance Tables at the end of each Section for all applicable work, the Process Control Samples may be used for acceptance.

Add the following subsection:

154.04B Field Laboratory (Contractor-Furnished). Furnish a laboratory equipped with all test equipment necessary to satisfy the requirements of the contract.

The sampling and testing services of a commercial laboratory meeting or exceeding the requirements described herein may be used if all contract sampling and testing requirements are satisfied by the use of the commercial facility.

Ensure test equipment has been checked, calibrated, standardized and/or otherwise verified in accordance with AASHTO and ASTM standards by an individual qualified to do this work. Ensure mobile laboratories receive an equipment inspection after the laboratory has been moved to its permanent location on the project site and anytime it is moved thereafter. Inspect equipment within 45 days of actual use in project testing and at least once a year thereafter. Do not use equipment that has not been inspected or is found to be deficient. Mark deficient equipment and it take out-of-service until it is repaired or replaced and shown by subsequent inspection to perform as required. Maintain records documenting these inspections in the laboratory. Provide certification(s) stating the equipment conforms to testing requirements and provide evidence of current inspection.

The CO may require the Contractor to perform testing to demonstrate acceptable equipment and an acceptable level of technician competence. The CO may also check equipment and inspection records to verify condition. Repair or replace equipment not meeting applicable requirements. Keep laboratory facilities clean and maintain equipment in proper working condition. Provide the CO unrestricted access to the laboratory for inspection and review.

Section 155. — SCHEDULES FOR CONSTRUCTION CONTRACTS

Construction Requirements

155.04 Preliminary Construction Schedule.

Add the following:

(j) A list of the permits required for the contract. See Section 107.

155.05 Initial and Baseline Construction Schedule.

Delete (a) (1) *(c)* and substitute the following:

(c) Show activities in the order the work will be performed, including submittals, submittal reviews, permit applications, permit reviews, fabrication, and delivery.

Delete the second sentence of (b) (2) *(g)* and substitute the following:

Non-construction activities include mobilization, drawing and sample submittals by pay item number, permit applications, and the fabrication and delivery of key material.

Add the following to the end of (b) (2) *(g)*:

Refer to the permitting agencies to determine an appropriate duration for permit application review, permit approval, and distribution of permits.

(f) Submission and approval. Add the following to the end of the second paragraph:

No progress payments will be made until an initial construction schedule is approved by the CO.

155.06 Baseline Schedule Updates. Delete the second paragraph and substitute the following:

Unless previously approved by the CO, changes to the construction schedule for the work that is still to be completed, can only be changed with a Time Impact Analysis according to Subsection 108.03, and a Baseline Construction Schedule revision according to Subsection 155.07. Receipt of a baseline construction schedule update with negative float does not constitute agreement by the Government of the revised completion date.

Add the following:

(f) Working Schedule. At each construction progress meeting, provide the CO with a written summary detailing the work completed in the previous week and the proposed work activities for the following two weeks. Provide detail of proposed operations that will affect traffic flow, residents, and businesses adjacent to the project. Provide the CO with a

schedule revision if the written summary significantly differs from the baseline construction schedule or the latest construction schedule revision.

155.07 Baseline Schedule Revision. Delete the first paragraph and substitute the following:

Submit a time impact analysis when requesting approval of a baseline schedule revision. Submitting a proposed baseline schedule revision is not considered a notification of delay or of other basis for change. Continue to submit monthly schedule updates according to Subsection 155.06 until a baseline construction schedule revision is approved.

Section 156. — PUBLIC TRAFFIC

Construction Requirements

156.04 Accommodating Traffic During Work. Delete the first paragraph and substitute the following:

Accommodate traffic according to the MUTCD, contract traffic control drawings, Section 635, and this Section. Submit a traffic control plan for approval according to Subsection 104.03. Submit a traffic control plan at least 30 days before intended use.

156.05 Maintaining Roadways During Work.

(a) Add the following:

Do not construct diversions outside of the clearing limits or use alternate route detours without the approval of the CO.

156.07 Limitations on Construction Operations.

(c) Delete the first sentence and substitute the following:

For alternate one-way traffic control, provide a minimum lane width of 10 feet (3 meters). For two-way traffic, provide a minimum roadway width of 22 feet (6.7 meters).

156.08 Nighttime Operations. Add the following after the first sentence:

Nighttime Operations are permitted for the Dumont Dunes Road project.

Section 157. — SOIL EROSION AND SEDIMENT CONTROL

Delete the entire Section and substitute the following:

Section 157. — SOIL EROSION CONTROL, SEDIMENT CONTROL, AND POLLUTION PREVENTION

Description

157.01 This work consists of preparing and managing a Stormwater Pollution Prevention Plan (SWPPP) including non-stormwater pollution prevention. This work also consists of implementing the SWPPP including but not limited to furnishing, constructing, and maintaining soil erosion and sediment control devices to eliminate or minimize pollutants in stormwater discharges from the project.

Material

157.02

Conform to the following Subsections:

Backfill material	704.03
Concrete masonry unit	725.07(c)
Fertilizer	713.03
Fiber rolls and socks	713.12
Floating turbidity curtains	713.21
Gravel bags	713.13
Mulch	713.05
Plastic lining	725.12
Prefabricated filter inserts	713.20
Riprap	705.02
Rock mulch	705.07
Sandbags	713.14
Sediment filter bags	713.19
Seed	713.04
Separation and stabilization geotextile and geotextile filter	714.01(a)
Silt fence	713.16
Tackifiers	713.11(a)
Temporary culvert pipe	713.15
Temporary plastic fence	710.11
Temporary rolled erosion control products	713.17
Turf reinforcement mats	713.18

Water 725.01(b)

If using materials not listed here, see Subsection 106.04.

Construction Requirements

157.03 Qualifications. Submit the names responsible for the following roles and qualifications for approval with SWPPP submittal:

(a) SWPPP Developer;

(b) Erosion Control Supervisor; and

(c) On-Site Stormwater Lead.

Provide documentation that personnel meet the qualifications set forth in the Construction General Permit of the state(s) that the project is located in, or the qualifications below, whichever is more stringent. One person may serve in more than one role if qualified.

(a) SWPPP Developer. SWPPP Developer with all of the following qualifications:

(1) Have completed 40 hours of stormwater management training;

(2) Have 5 years of highway or equivalent experience developing stormwater pollution prevention plans and designing site specific best management practices (BMPs); and

(3) Be registered or certified in the state(s) in which the project is located for one or more of the following:

(a) Registered civil engineer with stormwater plan experience;

(b) Registered professional geologist or engineering geologist with stormwater plan experience;

(c) Licensed landscape architect with stormwater plan experience;

(d) Registered professional hydrologist with stormwater plan experience; or

(e) Other state or nationally recognized certification program for erosion and sediment control professionals.

(b) Erosion Control Supervisor. Erosion Control Supervisor with the following qualifications:

(1) Both of the following:

(a) Have completed 24 hours of stormwater management training; and

(b) Have 3 years of highway or equivalent construction experience that included oversight of erosion, sediment, and pollution control best management practices; or

(2) One of the following:

(a) Meet requirements of SWPPP Developer above; or

(b) Be registered or certified as a stormwater inspector from a state or nationally recognized certification program for stormwater inspectors.

(c) On-Site Stormwater Lead. Stormwater Lead(s) with the following qualifications:

(1) Both of the following:

(a) Have completed 8 hours of stormwater management training;

(b) Have 1 year of highway construction experience including stormwater management duties; or

(2) One of the following:

(a) Meet requirements of Erosion Control Supervisor;

(b) Be registered or certified as a stormwater inspector from a state or nationally recognized certification program for stormwater inspectors.

157.04 Roles and Responsibilities. Furnish a Stormwater Team that is qualified to perform the following roles and responsibilities:

(a) SWPPP Developer. Develop and approve the SWPPP for the project based on requirements in the Construction General Permit, contract plans, and specifications. Show construction phasing of erosion, sediment, and pollution prevention BMPs for all construction activities on a site plan to meet water quality regulations. Review field changes and provide amendments to the SWPPP when substantial changes occur.

(b) Erosion Control Supervisor. Implement the SWPPP, which includes but is not limited to scheduling installation and maintenance of all BMPs, job site inspections, and other activities for pollution prevention. Review all inspection reports and ensure that SWPPP and Site Plan are implemented and updated.

(c) Stormwater Lead. Install or lead crew to install and maintain BMPs, conduct site inspections, water quality monitoring, reporting, and performing all on-site activities required to comply with the Construction General Permit. Inform the Erosion Control Supervisor when changes are made. The Stormwater Lead is required to be on the project site during working hours, and available during non-work hours to do inspections before, during, and after qualifying rain events.

157.05 General. Develop, submit, and manage a SWPPP according to the Construction General Permit requirements for project location. Contract permits amend the requirements of this Section. Submit SWPPP to the CO at or before the Pre-construction meeting. Allow 7 calendar days for CO review and acceptance prior to submission to regulatory agency(ies).

Basic project information will be provided by the Government to inform the development of the SWPPP.

When soil erosion and sediment pollution control measures are not functioning as intended, take immediate corrective action to eliminate or minimize pollutants in stormwater discharges from the project.

Provide certified weed free devices.

Do not use monofilament plastic for erosion or sediment control products.

157.06 Controls and Limitations on Work. Prior to the start of a construction activity, implement appropriate pollution prevention measures for the activity. No soil disturbing construction activity may begin on the project until the SWPPP has been reviewed and accepted and the NOI has been accepted by the permitting agency and is active.

157.07 Stormwater Pollution Prevention Plan (SWPPP). Prepare, submit, and implement a Construction Stormwater Pollution and Prevention Plan (SWPPP) following the SWPPP template of the state in which the project is located. Include the Federal Highway Administration as an operator on the project in charge of plans and specifications. If the state does not provide a template, follow the SWPPP template provided by the Environmental Protection Agency (EPA)

(https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates#swppp).

Provide a SWPPP according to the Stormwater Construction General Permit (CGP) and the following manual: "The Stormwater Practitioners Guide by the Federal Highway Administration, Central Federal Lands Highway Division." (The CFL Stormwater Guide). Provisions in the SWPPP are incorporated by reference into the contract. Provide an electronic copy of the SWPPP and obtain approval from the CO prior to mobilization.

The Stormwater Practitioners Guide is available at:

https://highways.dot.gov/federal-lands/construction/cfl-stormwater-guide

Based on the approved SWPPP, provide the CO a list of the planned pollution prevention devices for each of the following: erosion controls, sediment controls, and non-stormwater controls.

Implement the SWPPP as required throughout the construction period. Modify the erosion, sediment, and non-stormwater pollution control details and SWPPP plans as necessary to accommodate project site conditions and proposed construction operations. Update the SWPPP when modifying erosion, sediment, and non-stormwater pollution controls. Provide a copy of the updated SWPPP monthly to the CO for review.

157.08 Soil Erosion Control. Apply erosion control measures to stabilize soils and to control temporary concentrated flows throughout the duration of the project. Construct and maintain measures according to manufacturer's recommendations, the project requirements, and according to the following manual: The CFL Stormwater Guide.

157.09 Sediment Control. Apply sediment control measures to intercept, slow and detain the flow of stormwater throughout the duration of the project. Construct and maintain measures according to manufacturer's recommendations, the project requirements, and according to the following manual: The CFL Stormwater Guide.

157.10 Non-Stormwater Controls. Apply non-stormwater measures as needed and as required in the SWPPP to control non-stormwater discharges, and to prevent or limit potential pollutants at their source from contact with stormwater throughout the duration of the project. Construct and

maintain measures according to manufacturer's recommendations, the project requirements, and according to the following manual: The CFL Stormwater Guide.

157.11 Acceptance. Material for erosion, sediment, and non-stormwater pollution control measures will be evaluated under Subsections 106.02 and 106.03.

Construction, maintenance, and removal of erosion control, sediment control, and non-stormwater controls will be evaluated under Subsections 106.02 and 106.04.

Separation and stabilization geotextile and geotextile filter will be evaluated under Section 207.

Measurement

157.12 Measure the Section 157 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

Do not measure replacement erosion, sediment, or non-stormwater pollution control measures.

Do no measure additional or changed erosion, sediment, or non-stormwater pollution control measures required when planned controls are not functioning as intended and corrective actions are taken, unless the CO has approved a contract modification providing for measurement and payment of additional or changed control measures.

Payment

157.13 The accepted quantities will be paid at the contract price per unit of measurement for the Section 157 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

(a) Progress Payments for SWPPP. Progress payments for SWPPP will be paid as follow

(1) 25 percent of the pay item amount will be paid on the approval of the SWPPP by the CO and upon receipt of authorization from the permitting agency that the project permit is active.

(2) An additional 50 percent of the pay item amount will be prorated based on total work completed.

(3) The remaining portion of the pay item amount will be paid when a copy of the final SWPPP and all accompanying documentation, to include, inspection reports, water quality sampling results, and annual report submittals, is submitted and accepted by the CO after the final inspection and resolution of punch list items.

(b) Progress Payments for Soil Erosion Control. Progress payments for lump sum temporary erosion and sediment control will be paid as follows:

(1) 80 percent of the pay item will be prorated based on total contract work completed.

(2) 20 percent of the pay item amount will be paid at completion of contract after final acceptance.

Section 203. — REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Construction Requirements

203.04 Removing Material.

(c) Concrete removal in repair areas. Delete the third paragraph and substitute the following:

Sandblast all exposed structural steel, reinforcing steel, and concrete surfaces that will be in contact with repair material. Remove all rust and foreign material. Clean the sound concrete surface by flushing with a high-pressure water jet or oil-free compressed air.

203.05 Disposing of Material.

(a) Remove from Project. Add the following:

Secure clearances according to Subsection 107.10.

(b) Burn. Delete the subsection.

(c) Bury. Delete the subsection.

Section 302. — MINOR CRUSHED AGGREGATE

302.06 Acceptance. Add the following to the second paragraph:

Sample material at the frequency shown in Table 302-1. Materials that do not meet the approved certification will be considered unacceptable.

Delete Table 302-1 and substitute the following:

Table 302-1
Sampling, Testing, and Acceptance Requirements

Material or Product (Subsection)	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time	Remarks
Production								
Crushed aggregate[1]	Measured and tested for conformance (106.04)	Moisture-Density	AASHTO T 180, Method D [3]	1 per aggregate supplied	Production output or stockpile	Yes	Before using in work	–
		Gradation[2]	AASHTO T11 and T27	1 per 500 tons (450 metric tons)	From the windrow or roadbed after processing.	Yes	Before placing next layer	
		Density	AASHTO T310 or other approved procedures	1 per 500 tons (450 metric tons)	In-place after compaction	No	Before placing next layer	For Method 2 compaction only
Crushed aggregate	Process control (153.03)	Moisture content (in-place)	AASHTO T310 or other approved procedures	1 per 500 tons (450 metric tons)	In-place after compaction	No	Before placement of next layer or as requested	–
Finished Product								
Crushed aggregate	Measured and tested for conformance (106.04)	Surface tolerance & grade	Subsection 301.06	Determined by the CO	Surface of final course	No	Before placement of next layer or as requested	–

[1] Sampling and testing required for roadway aggregate.
[2] Use only sieves indicated for the specified gradation.
[3] Minimum of 5 points per proctor.

Section 403. — ASPHALT CONCRETE

Description

403.01 Add the following:

Use an Asphalt binder that would be specified for the project location and is designated according to AASHTO M 320.

Construction Requirements

403.02 Composition of Mix (Job-Mix Formula). Add the following:

The CO may perform mix design-verification testing to confirm the mix meets the contract requirements. If verification testing is required, submit a loose mix sample to the CO 14 days prior to placement.

(a) Type I. Delete the subsection and Table 403-1 and substitute the following:

Submit a state department of transportation JMF used locally and approved within the past 12 months for approval at least 30 days before production. For each proposed JMF, submit a production certification conforming to state department of transportation specifications and conforming to design parameters (a), (b), or (c) for the type of mix submitted and conforming to design parameter (d) in Table 403-1.

Table 403-1
Asphalt Concrete Mix Requirements

Design Parameters	Specification
(a) Volumetric hot asphalt concrete pavement (AASHTO M 323, AASHTO R 35, and AASHTO T 312)	
Gyratory compaction level	8, 85, 130
Volumetric properties at 0.3 to 3 million ESAL's (AASHTO M 323)	see Table 401-1
(b) Hveem (AASHTO T 246 and AASHTO T 247)	
Stabilometer, minimum	35
Percent Air Voids [1]	3.0 – 5.0
(c) Marshall (AASHTO T 245)	
Stability, pounds (kilonewtons), minimum	2000 (8.9)
Flow, 0.01 inches (0.25 millimeters)	8 - 16
Percent Air Voids [1]	3.0 – 5.0
Compaction, number of blows each end of test specimen	75
(d) Moisture Susceptibility (AASHTO T 283)	
Tensile strength ratio, minimum	0.80

(1) The percent of air voids are based on AASHTO T 166, AASHTO T 209 and AASHTO T 269.

403.08 Placing and Finishing.

(a) Add the following:

Use an MTV with storage and remixing capabilities on all mainline construction for placing asphalt concrete mixtures. The MTV will independently remix and deliver mixture from the hauling equipment to the paving equipment.

Furnish an MTV with the following:

(1) Independently operated with its own driver/operator;

(2) Independent from the paver;

(3) A loading system with the ability to receive mixtures from hauling equipment;

(4) A minimum storage capacity of 15 tons (13.6 metric tons) with a remixing system in the material storage bin;

(5) Remixing capability within the storage bin;

(6) A discharge conveyor to deliver the mixture to the paver hopper; and

(7) A mass not exceeding the maximum legal loadings on structures.

Pick-up machines, hopper inserts, and material transfer devices are not considered MTVs.

In the event the MTV malfunctions during paving operations, the Contractor must suspend paving. However, mix in transit and stored in the silo at the time of breakdown may be placed without the use of an MTV. Do not resume mix placement until the MTV is operational.

403.09 Compacting. Add the following:

For HMA, do not roll the mix after the surface cools below 175 °F (80°C).

Along forms, curbs, headers, walls, and other places not accessible to the rollers, compact the mix with alternate equipment to obtain the required compaction.

403.12 Acceptance. Add the following:

During production placement of the mix, sample loose mix and compacted cores according to Table 403-2 and submit to the CO for acceptance. Materials that do not meet the approved job-mix formula are considered unacceptable.

Delete Table 403-2 and substitute the following:

Table 403-2
Sampling, Testing, and Acceptance Requirements

Material or Product (Subsection)	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time	Remarks
Mix Design								
Asphalt concrete mixture Type I (403.02(a))	Measured and tested for conformance (106.04)	Job-mix formula	Subsection 403.02(a)	When requested by the CO.	Flowing mix stream (bin or belt discharge) or behind the paver before compaction.	Yes	Before approval of job-mix formula	Tested by the CO
Production								
Asphalt concrete, Type I (403.02(a))	Measured and tested for conformance (106.04)	Job-mix formula	Subsection 403.02	1 per 700 tons (650 metric tons)	Behind the paver before compaction.	Yes		–
		Density [1]	AASHTO T 166	"	In-place after Compacting	Yes		Deliver cores to CO for testing
		Maximum specific gravity	AASHTO T 209 [2]	"	Behind the paver before compaction	Yes		–
		Surface Tolerance	Straightedge measurement Subsection 403.11	Continuously, after compaction	Finished pavement surface	No		–
		Placement temperature	–	First load and as determined by CO thereafter	Hauling vehicle before dumping, or windrow before pickup	No	Upon completion of measurement	–

Table 403-2 (continued)
Sampling, Testing, and Acceptance Requirements

Material or Product (Subsection)	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time	Remarks
Production								
	Process control (153.03)	Gradation at the plant	AASHTO T 27 & T 11	Contractor determined	Cold feed or hot bins as applicable	No	24 hours	–
		Moisture content of aggregates	AASHTO T 255	"	Stockpile	No	"	–
		Density	ASTM D2950	1 per 500 feet (150 meters)	In-place after compacting	No	"	–
Asphalt concrete, Type II (403.02(b))	Measured and tested for conformance (106.04)	"	"	3 per 700 tons (650 metric tons)	In-place after compacting	No	"	–

(1) Dry cores to constant mass at 125±5°F (52±3 °C) or vacuum dry, ASTM D7227 before testing. For asphalt concrete Type I, cut two 6-inch (150-millimeter) diameter side by side cores. Remove them with a core retriever and fill and compact the core holes with asphalt concrete mixture. Label the cores and protect them from damage due to handling and temperature. Submit one core for verification testing. Dry the other core to constant mass at 125±5 °F (52±3 °C) or vacuum dry it according to ASTM D7227 before performing the core density and measuring the thickness. Use 62.245 pounds per cubic foot (997.1 kilograms per cubic meter) to convert specific gravity to density. Use AASHTO T 166 regardless of the volume of water absorbed. Use the average maximum specific gravity value (AASHTO T 209) of the first three samples to determine the percent compaction of each Lot.

(2) Do not use the dry back method (Section 11 of AASHTO T 209).

Section 552. — STRUCTURAL CONCRETE

Construction Requirements

552.03 Composition (Concrete Mix Design). Amend as follows:

Delete the first two paragraphs and substitute the following:

Design and produce concrete mixtures that conform to Tables 552-1, 552-2, and 552-3 as required for the class specified.

Submit concrete mix designs on FHWA Form 1608, *552 Structural Concrete Mix Design Submittal* and determine the required average concrete compressive strength (f_{cr}) with $\bar{X} \geq f_{cr}$

Delete the first sentence of the third paragraph and substitute the following:

Verify mixture design with trial mixes from proposed sources or with previous concrete production data for the mixture design submitted from proposed sources.

(w) Delete the paragraph and substitute the following:

Specified design strength (f'c) and required average concrete compressive strength (f'cr) for the concrete mixture at 28 days as determined by the process and associated calculations outlined on FHWA Form 1608, pages 4 and 5. Pending 28-day strength results, a mix design may be approved on the basis that 7-day compressive strength results meet or exceed 85 percent of the required average strength (f'cr) at 28 days;

552.09 Quality Control of Mix. Add the following:

(c) Prosecution of work: At least 2 weeks prior to the start of concrete placement operations, arrange a pre-concrete placing conference. Coordinate attendance with the CO and any applicable subcontractors. Be prepared to discuss and/or submit the following:

(1) Proposed concrete placement schedule.

(2) Review approved concrete mix design and determination of batch weights.

(3) Discuss Section 153, Contractor Quality Control and the minimum frequency schedule for process control sampling and testing (to be performed by the Contractor).

(4) Discuss batching, mixing, placing, and curing requirements.

(5) Discuss Subsections 106.03, Certification, and 106.05, Statistical Evaluation of Material for Acceptance.

552.11 Handling and Placing Concrete.

(e) Underwater placement. Delete line (1) and substitute the following:

(1) Tremies. Use watertight tremies, with a diameter sufficient to ensure that aggregate-induced blockages will not occur. Use multiple tremies as required. Make tremies capable of being rapidly lowered to retard or stop the flow of concrete.

Seal the discharge end and fill the tremie tube with concrete at the start of concrete placement. Keep the tremie tube full of concrete to the bottom during placement. If water enters the tube, withdraw the tremie and reseal the discharge end. Maintain continuous concrete flow until the placement is completed.

Section 623. — GENERAL LABOR

Delete the text of this Section and substitute the following:

Description

623.01 This work consists of furnishing workers and hand tools for construction work, survey crews, and furnishing qualified personnel to perform technical work ordered by the CO and not otherwise provided for under the contract.

Construction Requirements

623.02 Workers and Equipment. Furnish competent workers and appropriate hand tools for the work. Provide a crew of sufficient size and qualifications necessary to accomplish the required surveying services within acceptable tolerances.

Obtain approval of the length of a workday and workweek before beginning the work. Keep daily records of the number of hours worked. Submit the records along with certified copies of the payroll.

623.03 Surveying Services. Furnish personnel, equipment, and material that conform to the requirements of Subsection 152.01. Survey according to Section 152.

Survey and establish controls within the tolerances shown in Table 152-1, or within other tolerances as established by the CO.

Prepare field notes in an approved format. Furnish calculations. All field notes, supporting documentation, and calculations become the property of the Government upon completion of the work.

623.04 Technical Services. Furnish qualified engineering personnel experienced in highway construction and design, capable of performing in a timely and accurate manner. Provide personnel with a minimum of NICET Level II certification in highway design and construction, or State (SHA) or industry certification-related design and construction equivalent to their intended responsibilities. Personnel with 2 years or more of recent job experience in the type of highway design and construction provided for under the contract may be used in lieu of certifications. Provide the names and relevant experience of all personnel. Furnish supporting tools and equipment (e.g., calculator, computer, and software, and appropriate and commonly used drafting tools for the assigned task).

All calculations, notes, and supporting documentation become the property of the government upon completion of the work.

623.05 Technical Services Biologist. Provide a qualified biologist(s) to perform training, surveys and monitoring described in Subsection 107.10. A qualified biologist shall have a bachelor's degree in a relevant field and at least two full years of documented experience leading

similar surveys. The biologist(s) is responsible for performing biological monitoring throughout the duration of construction, including pre-construction tortoise surveys to protocol, migratory bird nest surveys, burrowing owl nest surveys and determining if construction operations will disrupt these species or have a negative impact on nesting species. Biologists are also responsible for relocation efforts. The biological monitor shall be familiar with all Stipulations found in the Biological Opinion and construction contract. The biological monitor shall be responsible for ensuring that all Stipulations are followed.

623.06 Acceptance. General labor work will be evaluated under Subsection 106.02.

Additional surveying services will be evaluated under Section 152.

Hired technical services will be evaluated under Subsections 106.02 and 106.04

Measurement

623.07 Measure the Section 623 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Round portions of an hour up to the nearest half hour. Measure time in excess of 40 hours per week at the same rate as the first 40 hours.

Measure surveying service by the crew hour regardless of crew size. Do not measure time spent in making preparations, performing calculations, plotting cross-sections, processing computer or other data, and other efforts necessary to successfully accomplish the ordered survey services.

Do not measure time for worker's transportation to and from the project site.

Measure office technical services by the hour, as ordered by the CO, for performing calculations, plotting cross-sections, and processing computer or other data.

Payment

623.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 623 pay item listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 109.05.

Section 634. — PERMANENT PAVEMENT MARKINGS

Measurement

634.12 Delete the second paragraph and substitute the following:

When pavement markings are measured by the linear foot (meter), measure the length of line applied along the centerline of each line applied regardless of color or line width. Measure broken or dotted pavement lines from end to end of the line including gaps. Measure solid pavement lines from end to end of each continuous line. For wide lines (12 inches (300 millimeters) in width or greater), adjust the measured length of line in the ratio of the required width to 4 inches (100 millimeters).

Section 635. — TEMPORARY TRAFFIC CONTROL

Description

635.01 Delete the second paragraph and substitute the following:

Arrow board, portable changeable message sign, barricade, and warning light types are designated in the MUTCD.

Material

635.02 Delete the Subsection and substitute the following:

635.02 Conform to the MUTCD and the following Sections and Subsections:

Concrete barrier (temporary)	618
Delineator and object marker retroreflectors	718.08
Guardrail (temporary)	617
Retroreflective sheeting	718.01
Sign panels	718.03
Sign posts	718.04
Sign hardware	718.06
Temporary plastic fence	710.11
Temporary pavement markings	718.16

Construction Requirements

635.07 Construction Signs. Amend as follows:

Delete the first paragraph and substitute the following:

Fabricate and install sign panels according to Subsection 633.05. Use Type III, IV, VIII, IX, or XI prismatic retroreflective sheeting. Use fluorescent sheeting for orange signs. For roll-up signs, use fluorescent Type VI retroreflective sheeting.

Add the following:

Provide the same type of sheeting on all post-mounted construction signs that pertain to the project.

Use crashworthy posts within the traversable area adjacent to traffic.

635.09 Flaggers. Add the following:

Perform the work described under MUTCD Part 6. Use fluorescent retroreflective sheeting on the "SLOW" side of the flagger paddle.

635.13 Temporary Pavement Markings and Delineation. Add the following:

For seasonal suspensions, apply the permanent pavement marking pattern with temporary traffic paint.

(d) Delineation for Unmarked Pavements with Vehicle Positioning Guides. For unmarked pavements, install signing and vehicle positioning guides as indicated in the plans. Use vehicle positioning guides that meet the requirements of Subsection 718.16(b), pavement markers.

Remove all vehicle positioning guides before placing additional pavement layers. Remove all vehicle positioning guides from the surface course before placing permanent pavement markings.

635.13 Temporary Pavement Markings and Delineation. Add the following to the last paragraph:

If permanent pavement markings are not placed within 14 days, provide, at no cost to the contract, additional temporary delineation equivalent to the permanent pavement marking pattern required by the contract.

Payment

635.25 Add the following:

Progress payments for temporary traffic control lump sum will be paid as follows:

(a) 25% of the pay item amount will be paid when initial construction signs are in place and needed devices onsite for use.

(b) An additional 65% of pay item amount will be prorated based on total work complete.

(c) The remaining portion of the pay item amount will be paid when the construction signs and devices are no longer needed and have been removed from the project.

Section 702. — ASPHALT MATERIAL

702.01 Asphalt Binder. Delete the Subsection and add the following:

702.01 Asphalt Binder. Conform to M 320, Table 1.

In AASHTO M 320, Table 1 replace footnote *g* with the following:

[g] If the creep stiffness is below 300 MPa, the direct tension test is not required. If the creep stiffness is between 301 and 600 MPa, the creep stiffness value shall be used. The *m*-value requirement must be satisfied in both cases.

Section 703. — AGGREGATE

703.01 Add the following:

703.01 Fine Aggregate for Concrete.

(c) Sand equivalent value, AASHTO T 176, Alternate Method No. 2	75 min.

703.06 Crushed Aggregate. Add the following to the end of the paragraph:

When aggregate is used as a surface course, furnish an aggregate with a Plasticity index (AASHTO T 90) conforming to Table 703-3a.

Table 703-3a
Surface Course Gradation and Plasticity Index

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)
¾ inch (19 mm)	100
No. 4 (4.75 mm)	41-71
No. 40 (425 µm)	12-28
No. 200 (75 µm)	5-20
Plasticity Index (PI)	4-12

Section 718. — TRAFFIC SIGNING AND MARKING MATERIAL

718.01 Retroreflective Sheeting. Add the following:

Furnish fluorescent type sheeting for all signs and all devices specifying an orange or a yellow background.

Section 725. — MISCELLANEOUS MATERIAL

725.04 Pozzolans. Delete line (a) and substitute the following:

(a) Fly ash. Conform to AASHTO M 295 Class C or Class F. When used to mitigate alkali-silica reactivity, also available alkalies as equivalent Na_2O	4.5 percent max

Appendix A

NWP 14, 404 Authorization

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 1109
LOS ANGELES, CALIFORNIA 90017-3409

May 4, 2022

SUBJECT: Nationwide Permit (NWP) Verification

Michael Daigler
Federal Highway Administration- CFLHD
12300 West Dakota Avenue
Lakewood, Colorado 80228

Dear Mr. Daigler:

I am responding to your request dated February 25, 2022 for a Department of the Army (DA) permit for your proposed project, the Dumont Dunes Road Project (File No. SPL-2021-00383-SLP). The proposed project is located near Baker, San Bernardino County, California (Latitude 35.695667°, Longitude -116.251214°).

Because this project would result in a discharge of fill material into waters of the U.S., a Department of the Army permit is required pursuant to Section 404 of the Clean Water Act (33 USC 1344; 33 CFR parts 323 and 330).

I have determined construction of your proposed project, if constructed as described in your application, would comply with NWP No. 14: *Linear Transportation Projects*. Specifically, and as shown in the enclosed figure(s), you are authorized to:

1. Temporarily impact up to 0.62 acre of non-wetland waters of the U.S. for the re-construction of concrete low water crossings, buried cut-off walls, site access, and associated road paving and other improvements;

2. Permanently impact up to 0.17 acre of non-wetland waters of the U.S. for the installation of riprap scour protection associated with the re-installation and widening of a concrete low water crossing and paving of an ephemeral stream crossing.

For this NWP verification letter to be valid, you must comply with all of the terms and conditions in Enclosure 1. Furthermore, you must comply with the non-discretionary Special Conditions listed below:

1. Within 30 days of completion of the authorized work, you must sign and return the enclosed Certificate of Compliance (in accordance with General Condition 30).

2. Within 45 calendar days of completion of authorized work in waters of the U.S., the Permittee shall submit to the Corps Regulatory Division a post-project implementation memorandum including the following information:
A) Date(s) work within waters of the U.S. was initiated and completed;
B) Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
C) Color photographs (including map of photopoints) taken at the project site before and after construction for those aspects directly associated with permanent impacts to waters of the U.S. such that the extent of authorized fills can be verified;
D) One copy of "as built" drawings for the entire project. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
E) Signed Certification of Compliance (attached as part of this permit package).

3. This Corps permit does not authorize you to take any threatened or endangered species, in particular the desert tortoise (*Gopherus Agassizii*) or adversely modify its designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed USFWS BO (FWS-INY-KRN-17B0532-21FI 144) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, the terms and conditions of which are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

4. No later than one month following completion of authorized work in waters of the U.S., the permittee shall ensure all sites within waters of the U.S. subject to authorized, temporary impacts are restored to pre-project alignments, elevation contours, and conditions to the maximum extent practicable to ensure expeditious resumption of aquatic resource functions. No later than 45 calendar days following completion of authorized work in waters of the U.S., the permittee shall submit a memorandum documenting compliance with this special condition.

5. The Permittee shall comply with the terms and conditions of the Clean Water Act Section 401 Water Quality Certification (WQC) (WDID No. 6B362106003) dated August 25, 2021. This WQC is hereby incorporated by reference and compliance includes but is not limited to conditions 1-12.

This verification is valid through March 14, 2026. If on March 14, 2026 you have commenced or are under contract to commence the permitted activity you will have an additional twelve (12) months to complete the activity under the present NWP terms and conditions. However, if I discover noncompliance or unauthorized activities associated with the permitted activity I may request the use of discretionary authority in accordance with procedures in 33 CFR part 330.4(e) and 33 CFR part 330.5(c) or (d) to modify, suspend, or revoke this specific verification at an earlier date. Additionally, at the national level the Chief of Engineers, any time prior to March 14, 2026, may choose to modify, suspend, or revoke the nationwide use of a NWP after following procedures set forth in 33 CFR part 330.5. It is incumbent upon you to comply with all of the terms and conditions of this NWP verification and to remain informed of any change to the NWPs.

A NWP does not grant any property rights or exclusive privileges. Additionally, it does not authorize any injury to the property, rights of others, nor does it authorize interference with any existing or proposed Federal project. Furthermore, it does not obviate the need to obtain other Federal, state, or local authorizations required by law.

Thank you for participating in our regulatory program. If you have any questions, please contact me at (213) 452-3412 or via email at Shannon.L.Pankratz@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at https://regulatory.ops.usace.army.mil/customer-service-survey/.

Sincerely,

Shannon Pankratz, D. Env.
Senior Project Manager
L.A. & San Bernardino Counties Section
North Coast Branch
Regulatory Division

Enclosures

LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY NATIONWIDE PERMIT

Permit Number: *SPL-2021-00383-SLP*

Name of Permittee: *Michael Daigler, Federal Highway Administration- CFLHD*

Date of Issuance: *May 4, 2022*

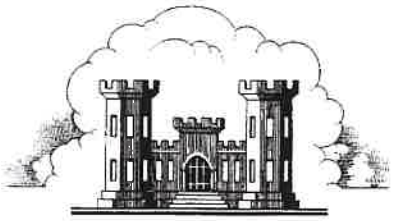
Upon completion of the activity authorized by this permit and the mitigation required by this permit, sign this certificate, and email it to Shannon.L.Pankratz@usace.army.mil or splreglasb@usace.army.mil.

I hereby certify that the authorized work and any required compensatory mitigation has been completed in accordance with the NWP authorization, including all general, regional, or activity-specific conditions. Furthermore, if credits from a mitigation bank or in-lieu fee program were used to satisfy compensatory mitigation requirements I have attached the documentation required by 33 CFR 332.3(l)(3) to confirm that the appropriate number and resource type of credits have been secured.

_____

Signature of Permittee Date

A001 5/16/2022



LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

COMPLIANCE DELIVERABLES CHECKLIST FOR DEPARTMENT OF ARMY PERMIT

Permit Number: *SPL-2021-00383-SLP*

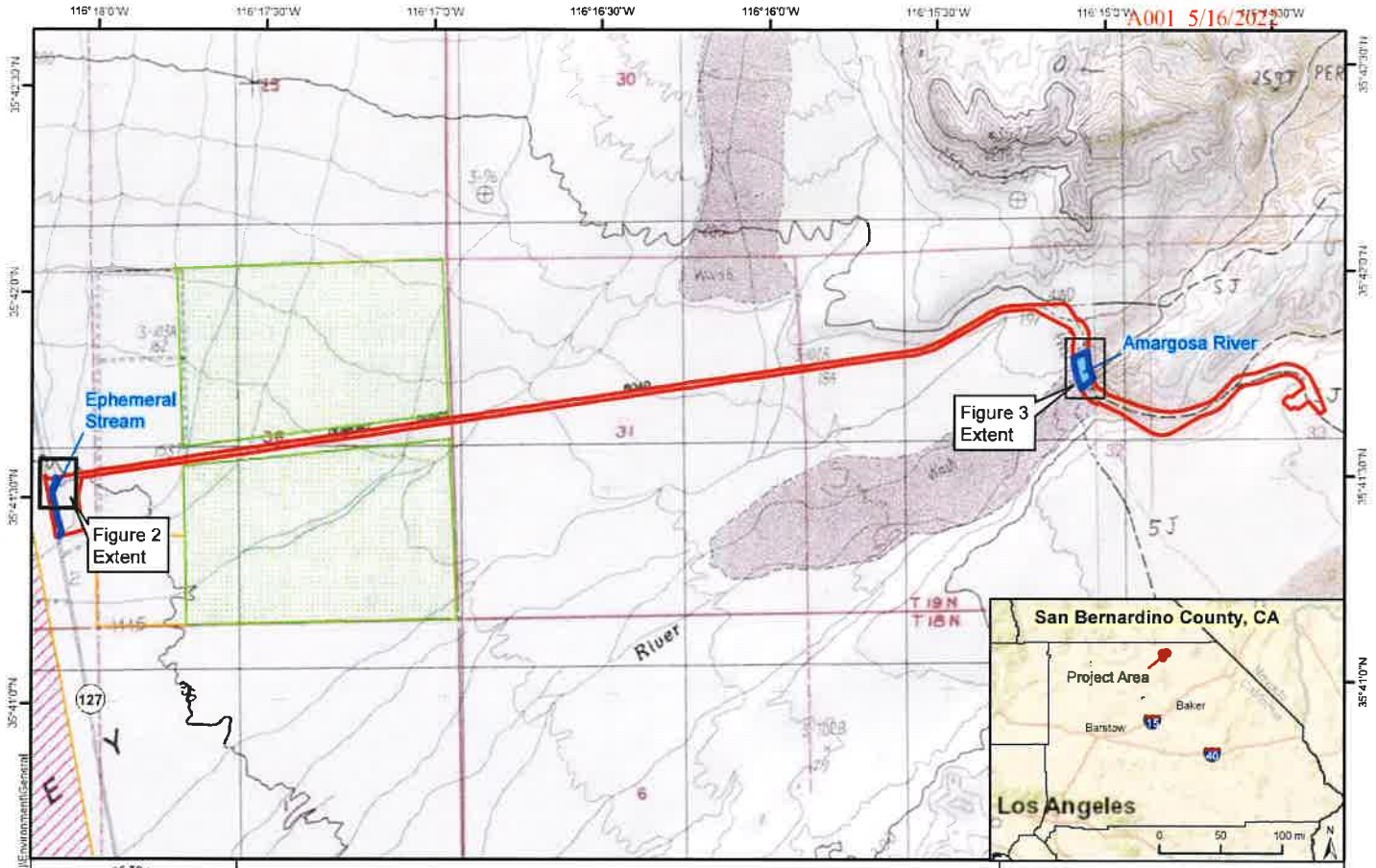
Name of Permittee: *Michael Daigler, Federal Highway Administration- CFLHD*

Date of Issuance: *May 4, 2022*

Please submit this checklist along with all required compliance deliverables (listed in the table below) to the Corps via email to Shannon.L.Pankratz@usace.army.mil or splreglasb@usace.army.mil. Upon receipt, the Corps will review proffered deliverables for sufficiency and, if approved, return an electronically-signed/dated copy of this checklist to you. The Corps Project Manager will provide e-signature upon receipt/approval of each compliance deliverable and will return the signed checklist to the applicant/agent in a progressive manner.

Condition #	Compliance deliverable	Corps approval
N/A	Notification of Commencement of Work	
Special Condition #1/ General Condition #30	Certificate of Compliance with Department of the Army Nationwide Permit	
Special Condition #2	Post Project Implementation Report	
Special Condition #4	Documentation verifying restoration of temporary impacts	

Upon receipt and approval of all items listed in the table above, the Corps will consider you in full compliance with compliance deliverable requirements in your permit authorization. Note, however, that any ongoing reporting obligations associated with the permit may remain unaffected by this compliance deliverables determination.



Federal Highway Administration
Central Federal Lands
Highway Division

Legend

- Stream
- Project Area
- BLM-managed Land
- NPS-managed Land
- State-owned Land

N

0 0.25 0.5 mi

1:24,000

Sections 35 & 36 of T19N, R6E and Sections 31 & 32 of T19N, R7E on *Dumont Dunes* and *Saddle Peak Hills* 7.5-minute quadrangles

Figure 1.
Location and Vicinity

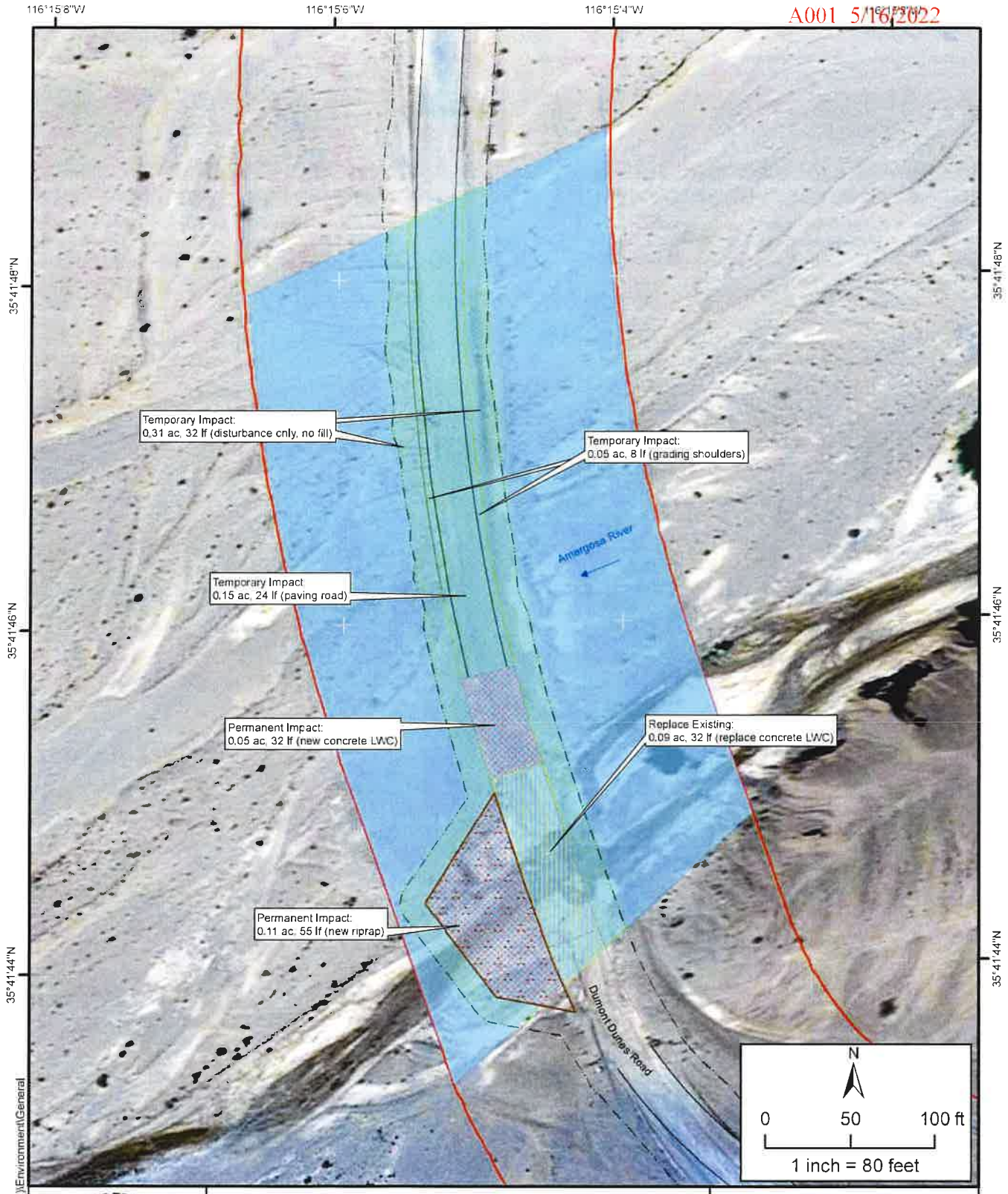
Dumont Dunes Road
(CA FTBL Dumont Dunes(1))

Map prepared by: L. Perry
Date: 5/25/21
Data source: USA topo maps, project data

Document Path: N:\CA\Projects\11\Environmental\General

REVISED FIGURE

A001 5/16/2022



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DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

Federal Highway Administration,
Central Federal Lands
Highway Division

Legend

- Temporary Impact
- Replace Existing
- Permanent
- Stream
- Project Area
- Proposed Gravel Shoulder
- Proposed Road
- Proposed Concrete LWC
- Proposed Riprap
- Construction Limit

Figure 3. Amargosa River Impacts

Dumont Dunes Road
(CA FTBL Dumont Dunes(1))

Map prepared by: L. Perry
Date: 7/27/21
Data source: Project data, GE Image 05/14

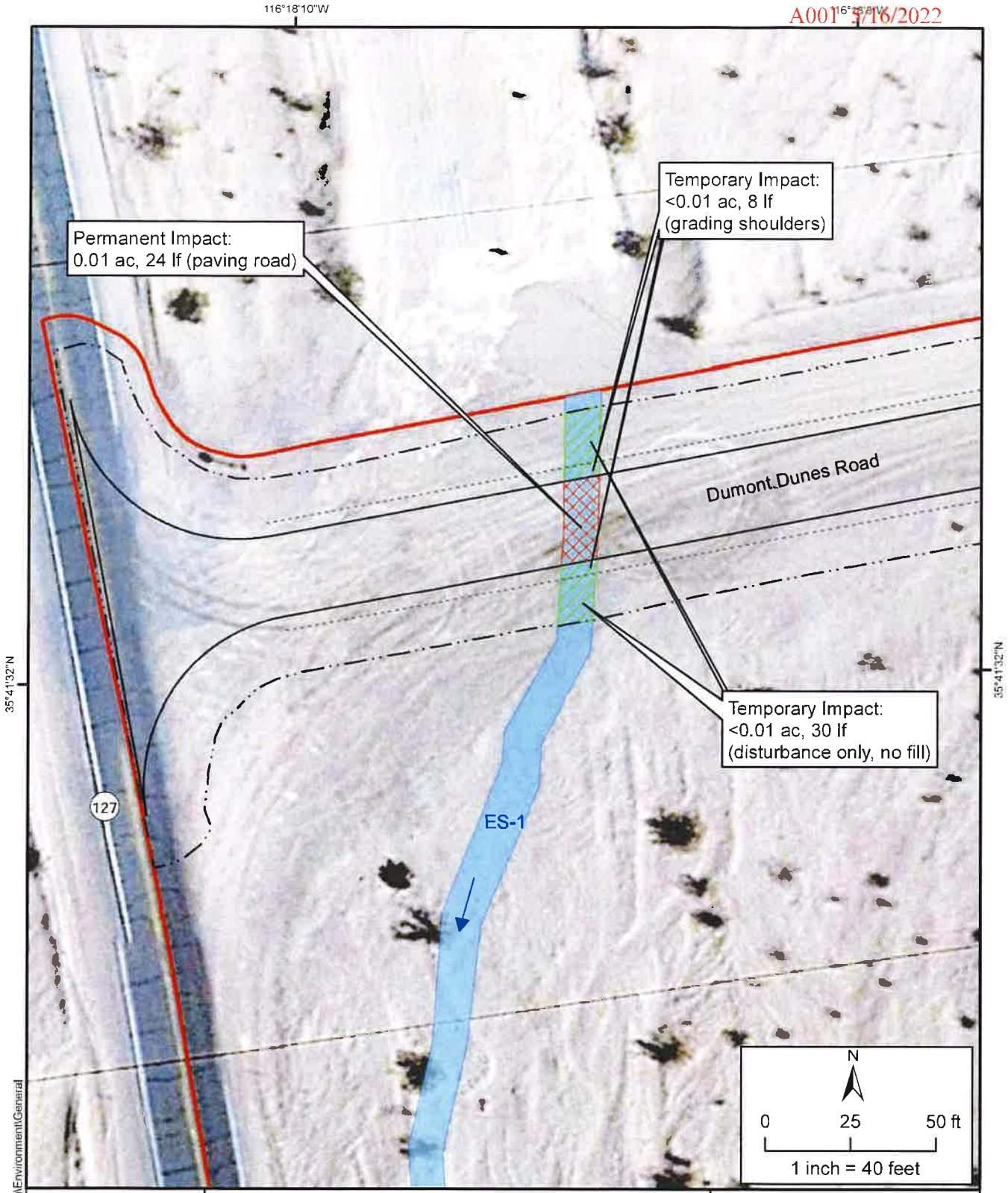

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Figure 2.
Ephemeral Stream Impacts

Dumont Dunes Road
(CA FTBL Dumont Dunes(1))

Map prepared by: L. Perry
Date: 5/26/21
Data source: Project data, GE Image 05/14

Enclosure 1: NATIONWIDE PERMIT NUMBER(S) NWP 14 Linear Transportation Projects

1. Nationwide Permit(s) NWP 14 Linear Transportation Projects Terms:

14. Linear Transportation Projects. Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, driveways, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge of dredged or fill material cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge of dredged or fill material cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge of dredged or fill material in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges of dredged or fill material for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b)(4) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

2. General Conditions: The following general conditions must be followed in order for any authorization by an NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her

authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Structures and Fills. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will

determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that

the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding

on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

_____
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) *Timing*. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the

activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification*: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is

located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification*: The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination*: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

3. Regional Conditions for the State of California:

(NWPs 12, 21, 29, 39, 40, 42-44, 48, 50-52, and 55-58, Effective March 15, 2021 through March 14, 2026)

1. The permittee shall submit a pre-construction notification (PCN) for all 2021 NWPs, in accordance with General Condition 32, in the following circumstances:

    a. Activities involving new bank stabilization that do not incorporate bioengineering techniques. Bioengineering techniques include using live plants alone or in combination with dead or inorganic materials, including rock, sand, or gravel;
    b. Activities resulting in a discharge of dredged or fill material in waters of the U.S. on Tribal Lands*;
    c. Activities involving the permanent channelization, realignment, or relocation of streams; and,
    d. Activities that have the potential to adversely affect Essential Fish Habitat (EFH), as designated by the Pacific Fishery Management Council. The PCN shall include an EFH assessment and analysis of effects of the action on EFH, in accordance with 50 C.F.R. § 600.920 (e). For Federal permittees, if a PCN is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with the Magnuson-Stevens Fishery Conservation and Management Act;

2. In the desert regions of Los Angeles District (USGS Hydrologic Unit Code accounting units: Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002), the use of NWP 12, 21, 29, 39, 40, 42, 42, 44, 50, 51, 52, 57 and 58 resulting in greater than 0.10-acre loss** of wetlands, mudflats, vegetated shallows, or riffle and pool complexes, as defined at 40 CFR Part 230.40-45, is prohibited.

3. In the Los Angeles District, NWPs 29, 39, 42 and 43, and NWP 14 combined with any of those NWPs, cannot authorize a loss** of waters of the United States greater than 0.25 acre Within the Murrieta Creek and Temecula Creek watersheds in Riverside County.

4. In the Los Angeles District, all 2021 NWPs are revoked within the Special Area Management Plans areas of the San Diego Creek Watershed and San Juan Creek/Western San Mateo Creek Watersheds in Orange County, California. Additional information is available here: https://www.spl.usace.army.mil/Missions/Regulatory/Established-LOP-Procedures/

5. In the Los Angeles District, the permittee shall submit a pre-construction notification (PCN) for all 2021 NWPs, in accordance with General Condition 32, in the following circumstances:

    a. Activities that would result in a loss** of waters of the United States within the Murrieta and Temecula Creek watersheds in Riverside County, California; and,
    b. Activities that would result in a loss** of waters of the United States within Santa Clara River watershed in Los Angeles and Ventura County, California, including but not limited to Aliso Canyon, Agua Dulce Canyon, Sand Canyon, Bouquet Canyon, Mint Canyon, South Fork of the Santa Clara River, San Francisquito Canyon, Castaic Creek, Piru Creek, Sespe Creek and the main-stem of the Santa Clara River; and,
    c. Activities that would result in a loss** of waters of the United States within all watersheds in the Santa Monica Mountains in Los Angeles and Ventura County, California, bounded by Calleguas Creek on the west, by Highway 101 on the north and east, and by Sunset Boulevard and Pacific Ocean on the south; and,
    d. Activities that would result in a loss** of waters of the United States within all perennial waterbodies and special aquatic sites.

* "Tribal Lands" refers to any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.
** "Loss" means waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity.

4. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

5. Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

6. Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a "water of the United States." If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

A001 5/16/2022

August 25, 2021 WDID No. 6B362106003

Curtis Scott, Chief of Engineering
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue
Lakewood, CO 80228
Curtis.Scott@dot.gov

Board Order No. R6V-2021-0034, Granting Clean Water Act Section 401 Water Quality Certification, Dumont Dunes Road Project, San Bernardino County

Lahontan Regional Water Quality Control Board (Water Board) staff has received a complete Clean Water Act (CWA) section 401 Water Quality Certification (WQC) application and application filing fee from the Federal Highway Administration-Central Federal Lands Highway Division (Applicant) for the Dumont Dunes Road Project (Project) in San Bernardino County. The application was received on July 2, 2021 and deemed complete on July 16, 2021. This WQC hereby assigns this Project Waste Discharge Identification (WDID) No. 6B362106003. Please use this reference number in all future correspondence regarding this Project.

Any person aggrieved by this action of the Water Board may petition the State Water Resources Control Board (State Water Board) to reconsider this WQC in accordance with Water Code section 13320 and California Code of Regulations (CCR), title 23, sections 2050 and 3867. The State Water Board must receive the petition within thirty (30) days after the date of this WQC, by 5:00 p.m. on the thirtieth day except if the thirtieth day following the date of this WQC falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at the Water Quality Petitions page: (http://www.waterboards.ca.gov/public _notices/petitions/water_quality/) or will be provided upon request.

PROJECT INFORMATION

Project details are listed in the following tables.

General Project Information

Category	Data
Applicant	Federal Highway Administration, Central Federal Lands Highway Division
Agent	Michael Daigler, Project Manager
Project Name	Dumont Dunes Road Project
Project Purpose and Description	The purpose of this Project is to pave the existing at-grade crossing to reduce maintenance of Dumont Dunes Road and assist with dust control. Temporary impacts to waters will result from ground disturbance associated with construction equipment access and grading. Permanent impacts to waters will result from the paving of the road, grading, and placement of rock slope protection (Enclosure 1).
Project Type	Transportation, Roads, Highways, and Bridges
Project Address or other Locating Information	The Project is located 3 miles east of the intersection of State Route 127 and Dumont Dunes Road, where Dumont Dunes Road crosses the Amargosa River, approximately 30 miles north of Baker in San Bernardino County.
Project Location Latitude/Longitude	Latitude: 35.695667 Longitude: -116.251214 (center)
Hydrologic Unit(s)	Amargosa Hydrologic Unit 609.00, Stove Pipe Wells Hydrologic Area (609.11)
Total Project Size	34 acres
Receiving Water(s) Name	Amargosa River
Water Body Type(s)	Intermittent Stream
Beneficial Uses	AGR, GWR, REC-1, REC-2, WARM, SAL, WILD, BIOL, RARE, SPWN
Potential Water Quality Impacts	Hydrogeomorphic changes in the flow regime on the Project site may result in downstream erosion, sedimentation, and/or siltation.
Federal Permit(s)	The United States Army Corps of Engineers (USACE) will regulate the Project as a non-notifying activity under Nationwide Permit 14, Linear Transportation Projects, pursuant to CWA section 404.
Non-Compensatory Mitigation	During construction, the Applicant will follow Best Management Practices (BMPs) including construction storm water controls designed to minimize the short-term degradation of water quality. All temporary impacts will be restored to pre-Project conditions.
Compensatory Mitigation	None.
Application Fee and Fee Code	Not Applicable (Fee Code 18, Federal Entity – No Fee)
Fees Received	Not Applicable
Estimated Annual Fee[1]	Not Applicable

Category	Data
[1] The actual Annual Fee will be calculated using the fee schedule in effect at the time the annual fee is assessed per California Code of Regulations, Title 23, section 2200(a)(3).	

Impacts of Fill and Excavation to Waters of the United States

Water-body Type	Temporary Impacts			Permanent Physical Loss of Area			Permanent Degradation of Ecological conditions		
Units	Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet
Stream Channel	0.36	0	40	0	0	0	0.41	653	87

Mitigation for Temporary Impacts

Aquatic Resource Type	Units	Establish-ment	Re-establish-ment	Re-habilitation	Enhance-ment	Preservation
Stream Channel	Acres		0.36			
	Linear Feet		40			

CEQA COMPLIANCE

The Water Board finds that the Project is categorically exempt from the California Environmental Quality Act (CEQA), pursuant to CCR, title 14, section 15031, Existing Facilities, for the maintenance of and minor alteration to an existing facility with negligible to no expansion of use. The Water Board will file a Notice of Exemption with the State Clearinghouse concurrently with this Order.

CALIFORNIA ECOATLAS

It has been determined through regional, state, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's Wetlands Conservation Policy of no net loss to wetlands, the State needs to closely track both aquatic habitat losses and mitigation/restoration project success. Therefore, the Applicant is required to provide Project information related to impacts and mitigation/restoration measures (see Additional Conditions of this WQC) to EcoAtlas using the Project Tracker website (http://ptrack.ecoatlas.org). Instructions and how to request a username and password can also be found at the Project Tracker website.

More information about the Water Board's Clean Water Act (CWA) Section 401 requirements can be found at: (http://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/index.shtml). More information about EcoAtlas can be found at: www.ecoatlas.org.

SECTION 401 WATER QUALITY CERTIFICATION

Authority

CWA section 401 (33 U.S.C §1341) requires that any applicant for a federal license or permit, who plans to conduct any activity that may result in discharge of dredged or fill materials to waters of the U.S., must provide the permitting agency a certification from the state that the discharge will be in compliance with applicable water quality standards of the state in which the discharge will originate. The Applicant submitted a complete application and the fees required for WQC under CWA section 401 for the Project. The Applicant has applied for USACE authorization to proceed under Nationwide Permit 14, Linear Transportation Projects, pursuant to CWA section 404. CCR, title 23, section 3831(e) grants the Water Board Executive Officer the authority to grant or deny WQC for projects in accordance with CWA section 401. The Project qualifies for such WQC.

Standard Conditions

The following standard conditions are requirements of this WQC:

1. This WQC action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330 and CCR, title 23, section 3867 through section 3869.

2. This WQC action is not intended and must not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license unless the pertinent WQC application was filed pursuant to CCR title 23, section 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. The WQC is conditioned upon total payment of the full fee required under CCR title 23, section 3833, unless otherwise stated in writing by the certifying agency.

4. Neither Project construction activities nor operation of the Project may cause a violation of the *Water Quality Control Plan for the Lahontan Region* (Basin Plan), may cause a condition or threatened condition of pollution or nuisance, or cause any other violation of the California Water Code (CWC) .

5. The Project must be constructed and operated in accordance with that described in the WQC application and supporting documentation that was submitted to the Water Board. Deviation from the Project constitutes a violation of the conditions upon which this WQC was granted. Any significant changes to this Project that would have a significant or material effect on the findings, conclusions, or conditions of this WQC, including Project operation, must be submitted to the Executive Officer for prior review and written approval.

6. This WQC is subject to the acquisition of all local, regional, state, and federal permits and approvals as required by law. Failure to meet any conditions contained herein or any conditions contained in any other permit or approval

issued by the state of California or any subdivision thereof may result in the revocation of this WQC and civil or criminal liability.

7. The Water Board may add to or modify the conditions of this WQC as appropriate to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the CWC or section 303 of the CWA, or as appropriate to coordinate the operations of this Project with other projects where coordination of operations is reasonably necessary to achieve water quality standards or protect the beneficial uses of water. Notwithstanding any more specific conditions in this WQC, the Project must be constructed and operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the CWC or section 303 of the CWA.

8. This WQC does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under the California Endangered Species Act (Fish and Game Code sections 2050, et seq.) or the federal Endangered Species Act (16 USC sections 1531, et seq.). If a "take" will result from any act authorized under this WQC, the Applicant must obtain authorization for the take prior to construction or operation of the Project. The Applicant is responsible for meeting all applicable requirements of the Endangered Species Act for the Project authorized under this WQC.

Additional Conditions

Pursuant to CCR title 23, the following additional conditions are requirements of this WQC:

1. Thirty (30) days from the date of issuance of this Order for WQC, the Applicant is required to upload Project information (all information fields required by EcoAtlas), including a Project map (either using upload or draw polygon features) to the following website: http://ptrack.ecoatlas.org/. Amendments to and monitoring reports associated with the Project must be updated on EcoAtlas (using the "Files and Links" tab under "Projects" in EcoAtlas) in addition to any other reporting required as part of this WQC.

2. All excess sediment excavated from the site that is not used on-site will be removed from the site and stockpiled in an upland location so as to not be transported by wind or water into surface water. An adequate combination of sediment and erosion control BMPs must be implemented and maintained, as needed, to temporarily stabilize stockpiled soils until such time that they are reused and/or permanently stabilized.

3. To document the completion of the Project, the Applicant must submit a Project Completion Report to the Water Board within 60 days following completion of the Project, including successful completion of all required mitigation and associated monitoring and reporting, if applicable. The Project Completion Report should

include the following, at minimum: a summary of the Project activities, including the date(s) those activities were performed; identification of work locations (tabulated with latitude/longitude and corresponding map with photo documentation), types of techniques used (hand tools, mechanized equipment, etc.), and the area of temporary and permanent disturbance to waters of the State; a summary of the activities related to construction storm water controls and the BMPs used; and a summary of any activities that deviated from those described in the original application and supporting documents.

4. This WQC does not authorize emergency repair activities. The Applicant is required to apply for separate authorization to perform emergency repairs should that be necessary.

5. Construction equipment vehicles and equipment must be monitored for leaks, and proper BMPs must be implemented should leaks be detected, or the vehicles/equipment must be removed from service, if necessary, to protect water quality.

6. Debris, cement, concrete (or wash water therefrom), oil or other petroleum products must not be allowed to enter or be placed where they may be washed from the Project site by rainfall or runoff into waters of the state. When operations are completed, any excess material must be removed from the Project work area and any areas adjacent to the work area where such material may be transported into waters of the state.

7. The Applicant must immediately notify Water Board staff by telephone whenever an adverse condition occurs as a result of this discharge. Such a condition includes, but is not limited to, a violation of the conditions of this WQC, a significant spill of petroleum products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition must be provided to the Water Board within two weeks of occurrence. The written notification must identify the adverse condition, describe the actions completed or necessary to remedy the condition, and specify a timetable, subject to any modifications by Water Board staff, for the remedial actions, if not already accomplished.

8. An emergency spill kit must always be at the Project site during the Project.

9. The Applicant must permit Water Board staff or its authorized representative upon presentation of credentials:

   a. Entry onto Project premises, including all areas on which wetland fill or wetland mitigation is located or in which records are kept.

   b. Access to copy any record required to be kept under the terms and conditions of this WQC.

   c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this WQC.

d. Sampling of any discharge or surface water covered by this WQC.

10. The Applicant must prevent the introduction or spread of noxious/invasive organisms within the Project and staging areas. The control measures may include the treatment of onsite infestations, the cleaning of all equipment and gear that has been in an infested site, the use of weed-free erosion control materials (including straw), and the use of weed-free seeds and plant material for revegetation of disturbed areas.

11. The Applicant must maintain at the Project site a copy of this WQC and a copy of the complete WQC application provided to the Water Board so as to be available at all times to site operating personnel and agencies.

12. The Applicant is responsible for informing any contractors of the specific conditions contained in this WQC.

Enforcement

In the event of any violation or threatened violation of the conditions of this WQC, the violation or threatened violation must be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of CWA section 401(d), the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this WQC.

In response to a suspected violation of any condition of this WQC, the State Water Board or the Water Board may require the holder of any permit or license subject to this WQC to furnish, under penalty of perjury, any technical or monitoring report the State Water Board or Water Board deems appropriate, provided that the burden, including costs, of the reports must be a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

In response to any violation of the conditions of this WQC, the Water Board may add to or modify the conditions of this WQC as appropriate to ensure compliance.

Section 401 Water Quality Certification Requirements Granted

I hereby issue this WQC certifying that any discharge from the referenced Project will comply with the applicable provisions of CWA sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards), and with other applicable requirements of state law.

This discharge is regulated under State Water Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this WQC. A copy of State Water Board Order No. 2003-0017-DWQ is

enclosed for your reference (Enclosure 2). Dischargers will comply with the entirety of this WQC, regardless of any determinations, including waiving of WQC conditions by the Army Corps of Engineers or other federal agencies made pursuant to 40 C.F.R. section 121.9.

Except insofar as may be modified by any preceding conditions, all WQC actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the Applicant's Project description and the terms specified in this WQC, and (b) compliance with all applicable requirements of the Basin Plan.

Electronic document submittal is required. Please send all future correspondence regarding this Project to the Water Board's email address at lahontan@waterboards.ca.gov and include your WDID No. and Project/Facility Name in the subject line.

We look forward to working with you in your efforts to protect water quality. If you have any questions regarding this matter, please contact Tiffany Steinert, Engineering Geologist, at (760) 241-7305 (Tiffany.Steinert@waterboards.ca.gov) or Jan Zimmerman Senior Engineering Geologist, at (760) 241-7376 (jan.zimmerman@waterboards.ca.gov).

MICHAEL R. PLAZIAK, PG
EXECUTIVE OFFICER

Enclosures: (1) Site Plan
(2) SWRCB Order No. 2003-0017-DWQ

cc:
Michael Daigler, Federal Highway Administration-Central Federal Lands Highway Division (Michael.Daigler@dot.gov)
Deanna Cummings, USACE (Deanna.L.Cummings@usace.army.mil)
USEPA Region 9 (R9cwa401@epa.gov)
Tiffany Steinert, Lahontan Water Board (tiffany.steinert@waterboards.ca.gov)

ENCLOSURE 1

Site Plan

A001 5/16/2022

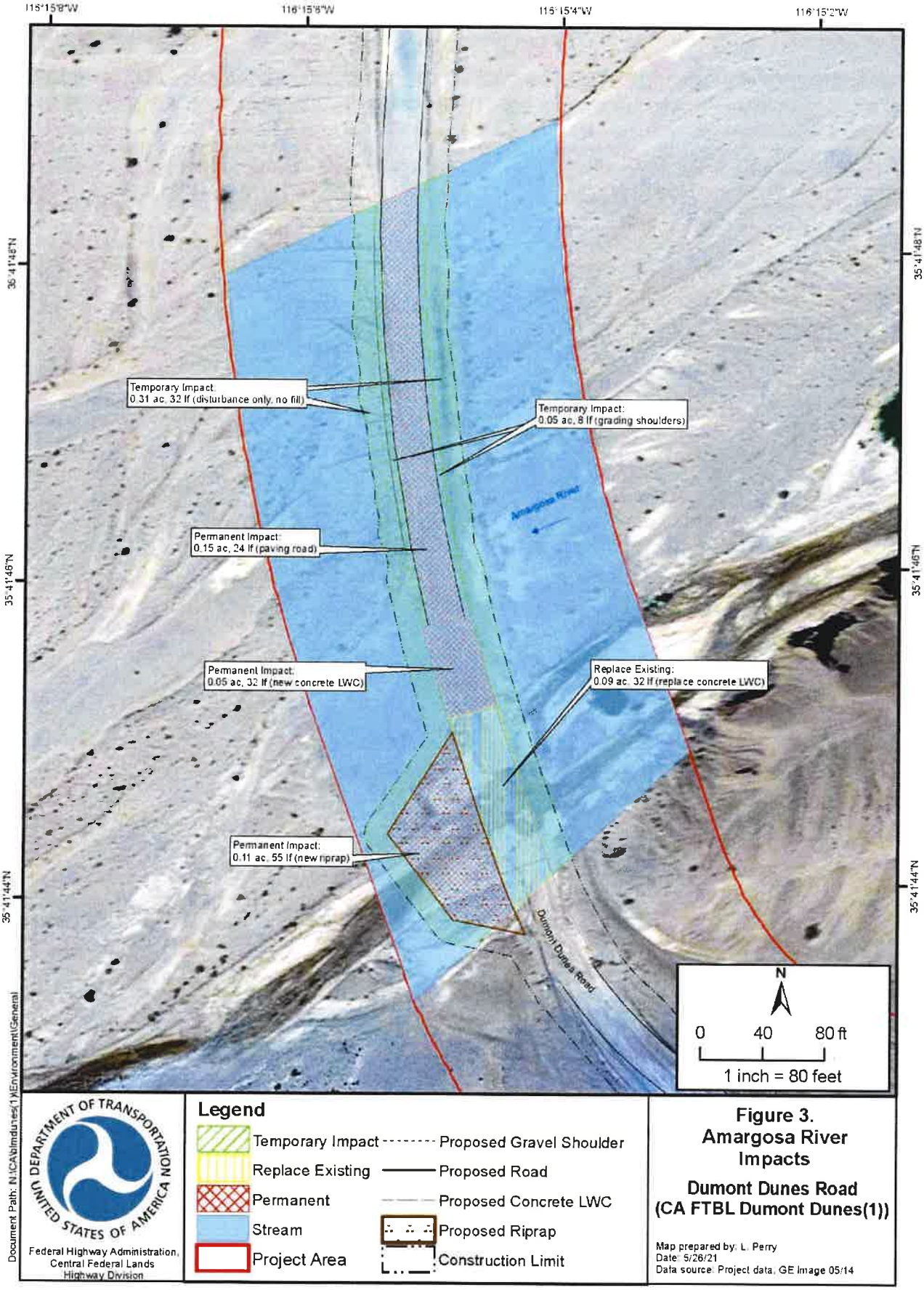


Figure 3.
Amargosa River Impacts

Dumont Dunes Road
(CA FTBL Dumont Dunes(1))

Map prepared by: L. Perry
Date: 5/26/21
Data source: Project data, GE Image 05/14

ENCLOSURE 2

SWRCB Order No. 2003-0017-DWQ

STATE WATER RESOURCES CONTROL BOARD

WATER QUALITY ORDER NO. 2003 - 0017 - DWQ

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR DREDGED OR FILL DISCHARGES THAT HAVE RECEIVED STATE WATER QUALITY CERTIFICATION (GENERAL WDRs)

The State Water Resources Control Board (SWRCB) finds that:

1. Discharges eligible for coverage under these General WDRs are discharges of dredged or fill material that have received State Water Quality Certification (Certification) pursuant to federal Clean Water Act (CWA) section 401.

2. Discharges of dredged or fill material are commonly associated with port development, stream channelization, utility crossing land development, transportation water resource, and flood control projects. Other activities, such as land clearing, may also involve discharges of dredged or fill materials (e.g., soil) into waters of the United States.

3. CWA section 404 establishes a permit program under which the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into waters of the United States.

4. CWA section 401 requires every applicant for a federal permit or license for an activity that may result in a discharge of pollutants to a water of the United States (including permits under section 404) to obtain Certification that the proposed activity will comply with State water quality standards. In California, Certifications are issued by the Regional Water Quality Control Boards (RWQCB) or for multi-Region discharges, the SWRCB, in accordance with the requirements of California Code of Regulations (CCR) section 3830 et seq. The SWRCB's water quality regulations do not authorize the SWRCB or RWQCBs to waive certification, and therefore, these General WDRs do not apply to any discharge authorized by federal license or permit that was issued based on a determination by the issuing agency that certification has been waived. Certifications are issued by the RWQCB or SWRCB before the ACOE may issue CWA section 404 permits. Any conditions set forth in a Certification become conditions of the federal permit or license if and when it is ultimately issued.

5. Article 4, of Chapter 4 of Division 7 of the California Water Code (CWC), commencing with section 13260(a), requires that any person discharging or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the State,[1] file a report of waste discharge (ROWD). Pursuant to Article 4, the RWQCBs are required to prescribe waste discharge requirements (WDRs) for any proposed or existing discharge unless WDRs are waived pursuant to CWC section 13269. These General WDRs fulfill the requirements of Article 4 for proposed dredge or fill discharges to waters of the United States that are regulated under the State's CWA section 401 authority.

[1] "Waters of the State" as defined in CWC Section 13050(e)

6. These General WDRs require compliance with all conditions of Certification orders to ensure that water quality standards are met.

7. The U.S. Supreme Court decision of *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) (the *SWANCC* decision) called into question the extent to which certain "isolated" waters are subject to federal jurisdiction. The SWRCB believes that a Certification is a valid and enforceable order of the SWRCB or RWQCBs irrespective of whether the water body in question is subsequently determined not to be federally jurisdictional. Nonetheless, it is the intent of the SWRCB that all Certification conditions be incorporated into these General WDRs and enforceable hereunder even if the federal permit is subsequently deemed invalid because the water is not deemed subject to federal jurisdiction.

8. The beneficial uses for the waters of the State include, but are not limited to, domestic and municipal supply, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources.

9. Projects covered by these General WDRs shall be assessed a fee pursuant to Title 23, CCR section 3833.

10. These General WDRs are exempt from the California Environmental Quality Act (CEQA) because (a) they are not a "project" within the meaning of CEQA, since a "project" results in a direct or indirect physical change in the environment (Title 14, CCR section 15378); and (b) the term "project" does not mean each separate governmental approval (Title 14, CCR section 15378(c)). These WDRs do not authorize any specific project. They recognize that dredge and fill discharges that need a federal license or permit must be regulated under CWA section 401 Certification, pursuant to CWA section 401 and Title 23, CCR section 3855, et seq. Certification and issuance of waste discharge requirements are overlapping regulatory processes, which are both administered by the SWRCB and RWQCBs. Each project subject to Certification requires independent compliance with CEQA and is regulated through the Certification process in the context of its specific characteristics. Any effects on the environment will therefore be as a result of the certification process, not from these General WDRs. (Title 14, CCR section 15061(b)(3)).

11. Potential dischargers and other known interested parties have been notified of the intent to adopt these General WDRs by public hearing notice.

12. All comments pertaining to the proposed discharges have been heard and considered at the November 4, 2003 SWRCB Workshop Session.

13. The RWQCBs retain discretion to impose individual or General WDRs or waivers of WDRs in lieu of these General WDRs whenever they deem it appropriate. Furthermore, these General WDRs are not intended to supersede any existing WDRs or waivers of WDRs issued by a RWQCB.

IT IS HEREBY ORDERED that WDRs are issued to all persons proposing to discharge dredged or fill material to waters of the United States where such discharge is also subject to the water quality certification requirements of CWA section 401 of the federal Clean Water Act (Title 33 United States Code section 1341), and such certification has been issued by the applicable RWQCB or the SWRCB, unless the applicable RWQCB notifies the applicant that its discharge will be regulated through WDRs or waivers of WDRs issued by the RWQCB. In order to meet the provisions contained in Division 7 of CWC and regulations adopted thereunder, dischargers shall comply with the following:

1. Dischargers shall implement all the terms and conditions of the applicable CWA section 401 Certification issued for the discharge. This provision shall apply irrespective of whether the federal license or permit for which the Certification was obtained is subsequently deemed invalid because the water body subject to the discharge has been deemed outside of federal jurisdiction.

2. Dischargers are prohibited from discharging dredged of fill material to waters of the United States without first obtaining Certification from the applicable RWQCB or SWRCB.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on November 19, 2003.

AYE: Arthur G. Baggett, Jr.
Peter S. Silva
Richard Katz
Gary M. Carlton
Nancy H. Sutley

NO: None.

ABSENT: None.

ABSTAIN: None.

Debbie Irvin
Clerk to the Board

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer To:
FWS-KRN/SBD/INY/LA/IMP/RIV-17B0532-17F1029

September 1, 2017
Sent by Email

Memorandum

To: District Manager, California Desert District, Bureau of Land Management, Moreno Valley, California

From: Field Supervisor, Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, Carlsbad, California

Subject: Biological Opinion for Activities in the California Desert Conservation Area

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the effects on the federally listed desert tortoise (Mojave population DPS) (*Gopherus agassizii*) and its critical habitat, in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*), of existing and future actions that are likely to occur within the boundaries of the California Desert Conservation Area.

This biological opinion is based on information in our files and discussions with your staff during the course of consultation. A record of this consultation can be made available at the Carlsbad Fish and Wildlife Office.

CONSULTATION HISTORY

Staff from the Bureau of Land Management (Bureau) and Service discussed the basic concepts of this consultation on February 2, 2016, and met several times thereafter to resolve specific issues. Based on these discussions and our general knowledge of the activities occurring within the boundaries of the California Desert Conservation Area, we provided a draft biological opinion to the Bureau on April 26, 2017. The Bureau provided the Service with comments on the draft biological opinion on May 26, 2017. This final biological opinion incorporates the Bureau's comments on the draft biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Scope of the Consultation

The Bureau and Service agreed that this consultation would address only the desert tortoise and its critical habitat. The desert tortoise and its critical habitat are the subjects of most consultations in the California Desert Conservation Area. The Bureau will consult with the Service on a case-by-case basis for any future activity that may affect other listed species or critical habitat.

The Bureau and Service agreed to consult formally on most activities that the Bureau undertakes or authorizes within the boundaries of the California Desert Conservation Area. This biological opinion pertains but is not limited to the construction, operation, maintenance, and decommissioning of the activities listed in the following table, and any management action that may occur within any of the program areas listed below, under the direction of the California Desert Conservation Area Plan, as amended, including the conservation and management actions for the Desert Renewable Energy Conservation Plan (Bureau 2016).

Wildlife, Vegetation, and Natural Resources
Guzzlers
Habitat restoration
Wild horses and burros
Invasive species management
Scientific studies
Fuels, fire, and prescribed burns
Range improvements
Recreation
Route closure and restoration of closed routes
Fences, signs, information and interpretive kiosks, directional signage, traffic counters
Organized tour events, special recreation permits, dual sport events, foot races, Bureau-sponsored or cosponsored outreach events, marathons, enduros, long-distance tours, races, shooting ranges, shooting of any rifle, shotgun or handgun consistent with the appropriate county's and/or California Department of Fish and Wildlife's shooting/hunting zone map
Staging areas
Non-motorized bicycle and hiking trails
Non-motorized trail development, maintenance and upgrades
Operations
Construction and maintenance of the Bureau's facilities, bathrooms, warehouses, office buildings, or maintenance facilities
Road repair and maintenance, paving, Arizona crossings, soil stabilizer, culverts
Lands
Apiaries
Land tenure (i.e., sales and exchanges)
Transmission and distribution lines
Substations, switchyards
Communication towers
Geotechnical surveys
Meteorological towers
Pipelines
Water storage tanks
Unexploded ordinance cleanups
Trash cleanups
Remediation of hazardous material sites

Mining
Locatable minerals (e.g., metallic, nonmetallic, and certain other minerals)
Leasable minerals (e.g., oil, gas, sodium, potash, phosphate, and coal)
Saleable minerals (e.g., sand and gravel)
Abandoned mining lands

Through this consultation, the Bureau and Service are implementing a process to expedite the review of certain future activities that the Bureau will implement or authorize under the guidance of the land use plan amendment for the California Desert Conservation Area (Bureau 2016). As part of the land use plan amendment, the Bureau adopted numerous conservation and management actions, which it defines as the "specific set of avoidance, minimization, and compensation measures, and allowable and non-allowable actions for siting, design, pre-construction, construction, maintenance, implementation, operation, and decommissioning activities on (Bureau) land." The Bureau will apply these conservation and management actions to all future activities. The land use plan amendment (Bureau 2016) contains a complete list of the conservation and management actions.

This biological opinion describes the process by which the Service and Bureau will consult on future activities and analyzes whether implementation of these activities is likely to jeopardize the continued existence of the desert tortoise or result in the destruction or adverse modification of its critical habitat. The Service and Bureau did not alter any of the conservation and management actions described in the land use plan amendment. However, the Bureau clarified that the conservation and management actions regarding transmission lines (TRANS-BIO-1 and LUPA-BIO-6) will also apply to distribution lines. All subsequent citations of conservation and management actions in this biological opinion are from the land use plan amendment (Bureau 2016).

This biological opinion will also replace most existing programmatic consultations that the Bureau and the Service are currently implementing. Some existing programmatic consultations, such as those with utilities, will remain in effect until the Service and Bureau replace them using the provisions of the new land use plan amendment as described in the Administration of the Consultation section. The existing programmatic consultations for off-highway vehicle management areas, livestock grazing, and route designation will remain in effect. This consultation will not include route designation, grazing, designation of new utility corridors, the development of renewable energy facilities, or major transportation corridors. See Appendix A for a list of these previous biological opinions.

Administration of the Consultation

The implementing regulations require that each Federal agency "review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat" [50 Code of Federal Regulations (CFR) 402.14(a)]. The Wildlife Biologist from the appropriate Bureau Field Office and California Desert District Office will review all discretionary actions that the Bureau proposes to implement or permit within the action area. If the Bureau determines that a future activity within the California Desert Conservation Area may affect the desert tortoise or its critical habitat, it will follow the procedures outlined in this section. (In this biological opinion, we intend "critical habitat" to refer to critical habitat of the desert tortoise, unless the reference is to the general regulatory provisions that apply to critical habitat.)

During the development of this biological opinion, Bureau and Service staff agreed that early informal consultation will remain a key component of the coordination between our agencies as either the Bureau or proponents propose activities. This coordination will include the discussion of survey protocols, the sharing of the results of surveys, and the discussion of the appropriate conservation and management actions, as described in the Bureau's (2016) land use plan amendment. The Bureau and Service recognize that informal consultation is an optional process; in some situations (e.g., small activities that are similar to those that we have previously reviewed), informal consultation may be unnecessary.

The Bureau will maintain a record of all its activities that undergo this evaluation. For all activities, the Bureau will include in its record:

1. The title of the action;

2. A description of the proposed action;

3. Location;

4. Size; and

5. The conservation and management actions and other protective measures, if any, for the desert tortoise and its critical habitat.

To assist in record keeping and in communicating between our agencies, the Bureau and Service will use the activity form that is appended to this biological opinion to document activities (Appendix B). These records will be maintained at the California Desert District Office.

The Bureau will notify the Service of every action that may affect the desert tortoise or its critical habitat by providing the activity form, via electronic mail, to the Palm Springs Fish and Wildlife Office (PSFWO).

For projects that affect 10 acres of habitat or less, or that do not involve ongoing impacts to desert tortoises that are associated with transportation, the Service will have 30 days to respond via electronic mail if we have any concerns with use of the programmatic consultation. The Bureau may assume that the Service has no concerns if it does not respond by the close of the 30-day period; as a courtesy, the Service will attempt to notify the Bureau of its decision as soon as possible. If the Service has concerns, it will describe these concerns to the Bureau and recommend a means of resolving the issues. Staff from the Bureau and Service may discuss issues informally during this time to resolve the issue; if they reach resolution, staff will summarize the revisions on the activity form as appropriate and the Service will submit it to the Bureau.

For projects that affect more than 10 acres or that will involve ongoing impacts to desert tortoises that are associated with transportation, the Service will respond within 30 days by signing and returning the activity form via electronic mail. The Bureau will not authorize the project until it receives this notification from the Service. The Service will indicate on the form whether it has any concerns with use of the programmatic consultation and agrees with the conservation and management actions the Bureau selected. The Service may also propose additional conservation and management

actions or other protective measures, if necessary. Staff from the Bureau and Service may discuss issues informally during this time; if such discussions result in revisions to the protective measures, staff will revise the activity form as appropriate and the Service will sign and submit it to the Bureau.

The Bureau or Service may opt out of using this consultation for a specific activity. If either agency determines that the use of this biological opinion may not be appropriate for a specific activity, it will notify the other agency as soon as possible to allow for changes in planning schedules.

In past consultations with the Bureau, the Service has authorized biologists to implement protective measures and handle desert tortoises on a project-by-project basis. Upon completion of this consultation, the Bureau will not request such authorization on a project-by-project basis. Upon date of signature, any person approved by the Service to undertake the duties of an authorized biologist for Bureau actions may also perform those duties on future actions within the Bureau's lands if those actions are within the scope of this biological opinion. If the Bureau determines that an authorized biologist is not performing his or her duties in a satisfactory manner, it will notify the Service at the earliest possible time it makes this determination.

The Service and Bureau acknowledge that activities may be proposed in the future that we have not considered in this biological opinion. The Bureau and Service will determine whether this biological opinion sufficiently considered the effects of such activities on the desert tortoise and its critical habitat. If so, use of this biological opinion would be appropriate; otherwise, re-initiation of formal consultation or initiation of a separate consultation may be appropriate.

If staff from the Service and Bureau cannot agree on a course of action after discussions on this or other issues, any disagreement will be elevated to the next appropriate supervisory level within the PSFWO for the area within which the project lies and the Bureau's appropriate field office for resolution. If further elevation is required, these individuals will contact the next level of supervisors within their agencies. Although the elevation of issues is likely to be an infrequent occurrence, the Bureau and Service consider this procedure to be a useful tool to maintain efficient processes and a healthy working relationship between our agencies.

The California Desert District Office will provide the Service with an annual report of the activities that it conducted or permitted under the auspices of this consultation. The annual report will include the information from the activity forms (Appendix B). The annual report will be provided to the Service by February 28 of each year this biological opinion is in effect.

This biological opinion will remain in effect until the Bureau or Service determines that it is no longer meeting either agency's needs. If such a circumstance arises, the agency reaching this conclusion will notify the other agency at the earliest possible time. If any of the thresholds for re-initiation of formal consultation are met (see Re-initiation Notice section of this biological opinion), the Bureau and Service will work together and revisit the consultation. If the Bureau and Service determine that this biological opinion requires changes that do not rise to the level of re-initiation, they will work together to amend the procedures contained herein.

Staff and managers from the PSFWO and the Bureau will meet annually to review how this consultation is functioning and to discuss any potentially important events in the upcoming year. If the Service and Bureau agree that such a meeting is unnecessary in any given year, the meeting may be cancelled.

Extent of Future Development

To ensure that its activities are not likely to jeopardize the continued existence of the desert tortoise, the Bureau has proposed to re-initiate formal consultation if 15 large desert tortoises are killed in a calendar year as a result of the activities considered in this biological opinion. The Bureau will transport any injured desert tortoise to a qualified veterinarian. If the desert tortoise recovers from its injuries but cannot be returned to the wild, we will consider this individual to have been killed. We will not consider rehabilitated desert tortoises that are returned to the wild as having been killed. During translocation, some desert tortoises may be found to be in such poor condition that they need to be euthanized; we will not consider these individuals as having been killed as a result of the activity.

The Bureau and Service will reassess, and alter if appropriate, the re-initiation threshold every 5 years using the results of the Service's range-wide sampling program and the number of large tortoises killed in the previous 5 years. For example, if the density of desert tortoises decreases, we will reduce the re-initiation threshold accordingly.

The Bureau and Service have not established re-initiation thresholds for critical habitat or habitat in general. The Bureau's disturbance cap system within areas of critical environmental concern and National Conservation Lands already limits the loss of critical habitat because critical habitat is located within these protected areas. The Bureau and Service have not established a cap system for habitat loss outside of protected areas because these areas support few desert tortoises and are not necessary for the conservation of the species.

Monitoring and Adaptive Management

The Bureau will implement a monitoring program to assess the effects of the proposed activities. The program will include activity-level monitoring for compliance with its project-specific approvals and monitoring of the effects of the land use plan. Both activity- and plan-level monitoring include provisions for effectiveness monitoring and adaptive management; the goal of these provisions is to ensure that monitoring is "an iterative process designed to continually improve the understanding of managed systems and inform their management over time" (Bureau 2015a). The land use plan amendment for the Desert Renewable Energy Conservation Plan (Bureau 2016, section III.2) includes detailed discussions of the monitoring programs.

ANALYTICAL FRAMEWORK FOR THE SECTION 7(A)(2) DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery

of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determine the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the species, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

Adverse Modification Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat of listed species. "Destruction or adverse modification" means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features (50 CFR 402.02).

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which evaluates the range-wide condition of designated critical habitat for the desert tortoise in terms of physical and biological features, the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the Environmental Baseline, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the physical and biological features and how that will influence the recovery role of the affected critical habitat units; and (4) Cumulative Effects, which evaluates the effects of future non-Federal activities in the action area on the physical and biological features and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the critical habitat of the desert tortoise are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the physical and biological

features to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the desert tortoise.

The analysis in this biological opinion places an emphasis on using the intended range-wide recovery function of critical habitat for the desert tortoise and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

METHODOLOGY

In most consultations, the Service and Bureau are aware of detailed information regarding the proposed action. For example, we know the project's specific location and its precise type; we often have a general idea of the timing of development. Because of surveys that the applicant or Bureau have conducted, we can frequently estimate the numbers of individuals of desert tortoise that the proposed action may affect. We will also know the precise measures that the Bureau will require the applicant to undertake to mitigate the effects of the proposed action on the desert tortoise and its critical habitat.

In this formal consultation, the Bureau and Service are considering the effects on the desert tortoise and its critical habitat of activities that the Bureau may undertake pursuant to the land use plan amendment signed on September 14, 2016. However, we do not know the specific types, timing, or locations of activities that the Bureau or its applicants may propose within the California Desert Conservation Area or the specific number of desert tortoises or amount of habitat (including critical habitat) that each activity may affect.

Given these uncertainties, the Bureau and Service established specific sideboards for the number of desert tortoises that may be killed during activities as a threshold for the re-initiation of formal consultation. Because the Bureau adopted disturbance caps with regard to habitat in areas that are important for the conservation of the desert tortoise as part of its land use plan amendment, we did not establish acreage thresholds with regard to habitat. We will evaluate the general effects of activities on the desert tortoise and its critical habitat, assess how the conservation and management actions are likely to mitigate these effects, and determine if the residual effects are likely to jeopardize the continued existence of the desert tortoise or destroy or adversely modify its critical habitat.

First, we will provide information on the range-wide status of the desert tortoise and its critical habitat; we will follow that discussion with information on the status of the desert tortoise and its critical habitat within the action area. We will conduct our analysis of the effects of the Bureau's activities on the desert tortoise and its critical habitat, provide our conclusions with regard to whether the proposed action is likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat. If appropriate, an incidental take statement will follow the conclusion.

The Bureau used 25 years as a planning horizon for its analysis during the development of the land use plan amendment. The activities that may follow the land use plan amendment will usually proceed for longer or shorter periods of time. We will consider how the expected duration of the activity will affect desert tortoises and their critical habitat when we conduct the activity-specific review, as described in the above Administration of the Consultation section of this biological opinion.

Biological analyses are frequently not readily quantifiable. For example, we usually cannot state that the degradation of a certain local area as the result of an activity will result in the likelihood that species is 25 percent less likely to survive and recover. Therefore, we address the likely magnitude of the effects of activities considered in this biological opinion by using the terms "considerable," "appreciable," and "negligible." In its final rule regarding the definition of destruction or adverse modification of critical habitat (81 Federal Register 7214), the Service defined ''considerably'' to mean "worthy of consideration'' and described it as a way of "stating that we can recognize or grasp the quality, significance, magnitude, or worth of the reduction in the value of critical habitat." In that rule, we defined the term ''appreciably diminish'' to mean "that the relevant question is whether the reduction has some relevance because we can recognize or grasp its quality, significance, magnitude, or worth in a way that negatively affects the value of the critical habitat as a whole for the conservation of a listed species." Although both of the definitions refer to critical habitat, we can use these adjectives to qualify the scale of any impact. To continue further down this scale, we will use the term "negligible" to indicate when activities would result in effects that are too small to meaningfully measure, detect, or evaluate. Through use of these qualifying adjectives, we will describe the relative effect of various activities on the desert tortoise and its critical habitat.

STATUS OF THE DESERT TORTOISE AND ITS CRITICAL HABITAT

Status of the Desert Tortoise

The Service listed the desert tortoise as threatened in 1990 [55 Federal Register (FR) 12178]. The threats described in the listing rule and both recovery plans (Service 1994, 2011) continue to affect the species. The most apparent threats to the desert tortoise are those that result in mortality and permanent habitat loss across large areas, such as urbanization and large-scale renewable energy projects, and those that fragment and degrade habitats, such as proliferation of roads and highways, off-highway vehicle activity, and habitat invasion by non-native invasive plant species.

We remain unable to quantify how threats affect desert tortoise populations. The assessment of the original recovery plan emphasized the need for a better understanding of the implications of multiple, simultaneous threats facing desert tortoise populations and of the relative contribution of multiple threats on demographic factors (i.e., birth rate, survivorship, fecundity, and death rate; Tracy *et al.* 2004).

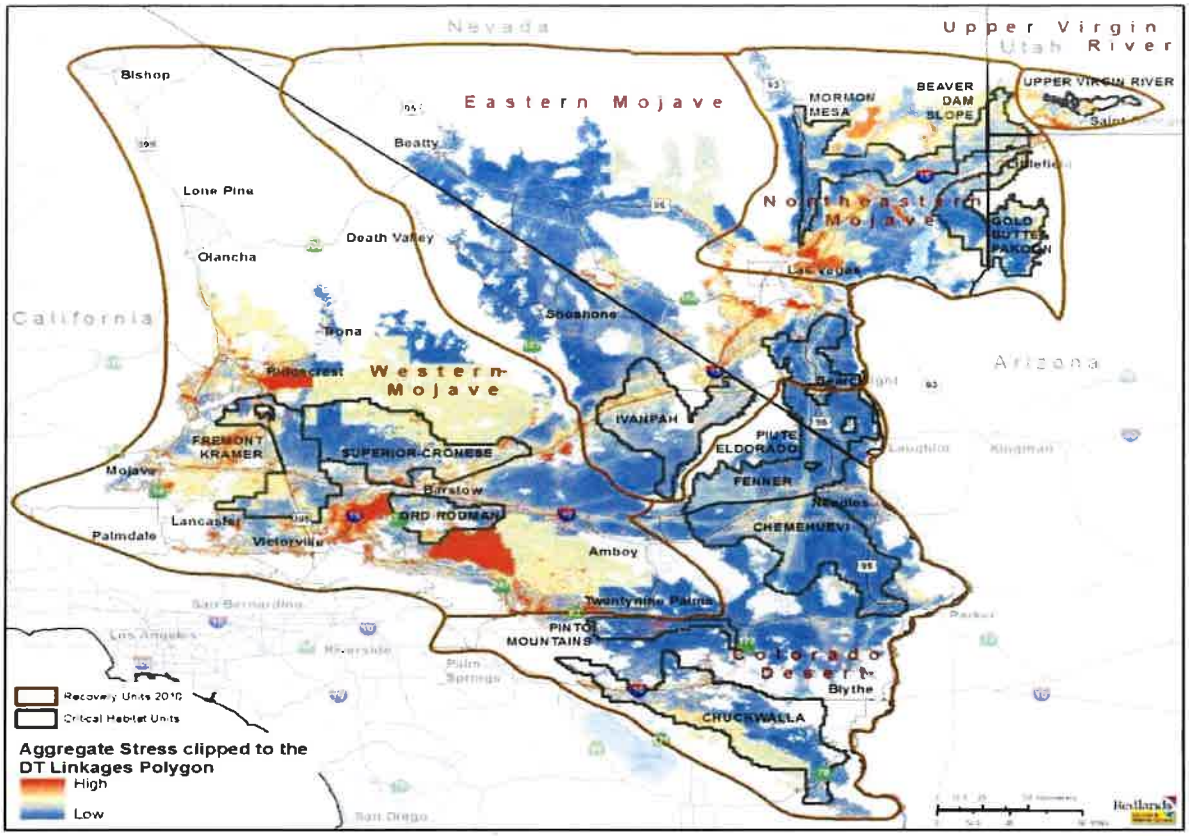
In recognition of the absence of specific and recent information on the location of habitable areas of the Mojave Desert, especially at the outer edges of this area, Nussear *et al.* (2009) developed a quantitative, spatial habitat model for the desert tortoise north and west of the Colorado River. The model incorporates environmental variables such as precipitation, geology, vegetation, and slope and is based on occurrence data of desert tortoises from sources spanning more than 80 years, including data from the 2001 to 2008 range-wide monitoring surveys. The model predicts the relative potential for desert tortoises to be present in any given location, given the combination of habitat variables at that location in relation to areas of known occupancy throughout the range; calculations of the amount of desert tortoise habitat in the 5-year review (Service 2010) and in this biological opinion use a threshold of 0.5 or greater predicted value for potential desert tortoise habitat. The model does not account for anthropogenic effects to habitat and represents the potential for occupancy by desert tortoises absent these effects.

To understand better the relationship of threats to populations of desert tortoises and the most effective manner to implement recovery actions, the Desert Tortoise Recovery Office developed a spatial decision support system that models the interrelationships of threats to desert tortoises and how those threats affect population change. The spatial decision support system describes the numerous threats that desert tortoises face, explains how these threats interact to affect individual animals and habitat, and how these effects in turn bring about changes in populations. For example, we have long known that the construction of a transmission line can result in the death of desert tortoises and loss of habitat. We have also known that common ravens, known predators of desert tortoises, use transmission line pylons for nesting, roosting, and perching and that the access routes associated with transmission lines provide a vector for the introduction and spread of invasive weeds and facilitate increased human access into an area. Increased human access can accelerate illegal collection and release of desert tortoises and their deliberate maiming and killing, as well as facilitate the spread of other threats associated with human presence, such as vehicle use, garbage and dumping, and invasive plants (Service 2011). Changes in the abundance of native plants because of invasive weeds can compromise the physiological health of desert tortoises, making them more vulnerable to drought, disease, and predation. The spatial decision support system allows us to map threats across the range of the desert tortoise and model the intensity of stresses that these multiple and combined threats place on desert tortoise populations.

The following map depicts the 12 critical habitat units of the desert tortoise, linkages between conservation areas for the desert tortoise and the aggregate stress that multiple, synergistic threats place on desert tortoise populations, as modeled by the spatial decision support system. Conservation areas include designated critical habitat and other lands managed for the long-term conservation of the desert tortoise (e.g., the Desert Tortoise Natural Area, Joshua Tree National Park, and the Desert National Wildlife Refuge).

Recovery Plan

The Service (1994, 2011) has issued an initial recovery plan and a revised recovery plan for the desert tortoise. The 1994 recovery plan recommended that a scientifically credible monitoring plan be developed to determine that the population exhibit a statistically significant upward trend or remain stationary for at least 25 years and that enough habitat would be protected within a recovery unit or the habitat and populations be managed intensively enough to ensure long-term viability. Because both minimum population densities and minimum population numbers need to be considered to ensure recovery, the Service further recommended that reserves be at least 1,000 square miles. Smaller reserves that provide high-quality, secure habitat for 10,000 to 20,000 adult desert tortoises should provide comfortable persistence probabilities for the species well into the future when populations are well above minimum viable density (e.g., 30 or more adults per square mile) and lambdas can be maintained (see page C54 of Service 1994). Conversely, populations with densities below approximately 10 adults per square mile (3.9 per square kilometer) are in danger of extinction (see page 32 of Service 1994).



"Adult" desert tortoise connotes reproductive maturity. The Bureau's conservation and management actions use 160 millimeters as the threshold for "adult" desert tortoises; however, not all desert tortoises that are 160 millimeters in length are reproductive. The Bureau based this size on the Service's 2010 pre-project survey protocol for the desert tortoise. The Service based its 2010 survey protocol on the methodology used in range-wide sampling but erred in citing 160 millimeters as the size below which surveyors' ability to detect desert tortoises decreases. In range-wide sampling, the Service uses 180 millimeters as its cut-off length for counting desert tortoises, at least in part because the Styrofoam models used for training are 180 millimeters in length. The Service intends to revise the survey protocol and will use 180 millimeters in the revised version. We have evaluated how the Bureau's use of 160 millimeters would affect desert tortoises. Specifically, Turner *et al.* (1987, which contains a life table that the Service generally uses to predict the number of desert tortoises that may occur in an area) found that individuals larger than 160 millimeters comprise approximately 15.4 percent of all desert tortoises; desert tortoises larger than 180 millimeters comprise 13.2 percent of all individuals. From that perspective, on average, we would expect that using 160 millimeters as the size threshold would make the Bureau's conservation and management action slightly more conservative for on-the-ground decisions. However, for the purposes of this biological opinion, we have used the term "adult" to indicate reproductive status and "large" to indicate animals larger than 180 millimeters in order to conform to the Service's protocols for range-wide sampling and pre-project surveys.

The revised recovery plan for the desert tortoise (Service 2011) lists three objectives and associated criteria to achieve delisting. The first objective is to maintain self-sustaining populations of desert tortoises within each recovery unit into the future; the criterion is that the rates of population change (λ) for desert tortoises are increasing (i.e., $\lambda > 1$) over at least 25 years (i.e., a single generation), as measured by extensive, range-wide monitoring across conservation areas within each recovery unit, and by direct monitoring and estimation of vital rates (recruitment, survival) from demographic study areas within each recovery unit.

The second objective addresses the distribution of desert tortoises. The goal is to maintain well-distributed populations of desert tortoises throughout each recovery unit; the criterion is that the distribution of desert tortoises throughout each conservation area increase over at least 25 years.

The final objective is to ensure that habitat within each recovery unit is protected and managed to support long-term viability of desert tortoise populations. The criterion is that the quantity of desert tortoise habitat within each conservation area be maintained with no net loss until population viability is ensured.

The revised recovery plan (Service 2011) also recommends connecting blocks of desert tortoise habitat, such as critical habitat units and other important areas to maintain gene flow between populations. Linkages defined using least-cost path analysis (Averill-Murray *et al.* 2013) illustrate a minimum connection of habitat for desert tortoises between blocks of habitat and represent priority areas for conservation of population connectivity. The previous map in this biological opinion illustrates that, across the range, desert tortoises in areas under the highest level of conservation and management remain subject to numerous threats, stresses, and mortality sources.

Five-Year Review

Section 4(c)(2) of the Endangered Species Act requires the Service to conduct a status review of each listed species at least once every 5 years. The purpose of a 5-year review is to evaluate whether the species' status has changed since it was listed (or since the most recent 5-year review); these reviews, at the time of their completion, provide the most up-to-date information on the range-wide status of the species. For this reason, we are appending the 5-year review of the status of the desert tortoise (Appendix C; Service 2010) to this biological opinion and are incorporating it by reference to provide most of the information needed for this section of the biological opinion. The following paragraphs provide a summary of the relevant information in the 5-year review.

In the 5-year review, the Service discusses the status of the desert tortoise as a single distinct population segment and provides information on the Federal Register notices that resulted in its listing and the designation of critical habitat. The Service also describes the desert tortoise's ecology, life history, spatial distribution, abundance, habitats, and the threats that led to its listing (i.e., the five-factor analysis required by section 4(a)(1) of the Endangered Species Act). In the 5-year review, the Service concluded by recommending that the status of the desert tortoise as a threatened species be maintained.

With regard to the status of the desert tortoise as a distinct population segment, the Service concluded in the 5-year review that the recovery units recognized in the original and revised recovery plans

(Service 1994 and 2011, respectively) do not qualify as distinct population segments under the Service's distinct population segment policy (61 FR 4722; February 7, 1996). We reached this conclusion because individuals of the listed taxon occupy habitat that is relatively continuously distributed, exhibit genetic differentiation that is consistent with isolation-by-distance in a continuous-distribution model of gene flow, and likely vary in behavioral and physiological characteristics across the area they occupy as a result of the transitional nature of, or environmental gradations between, the described subdivisions of the Mojave and Colorado deserts.

In the 5-year review, the Service summarizes information with regard to the desert tortoise's ecology and life history. Of key importance to assessing threats to the species and to developing and implementing a strategy for recovery is that desert tortoises are long lived, require up to 20 years to reach sexual maturity, and have low reproductive rates during a long period of reproductive potential. The number of eggs that a female desert tortoise can produce in a season is dependent on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological condition. Predation seems to play an important role in clutch failure. Predation and environmental factors also affect the survival of hatchlings. The Service notes in the 5-year review that the combination of the desert tortoise's late breeding age and a low reproductive rate challenges our ability to recover the species.

Since the completion of the 5-year review, the Service has issued several biological opinions that affect large areas of desert tortoise habitat because of numerous proposals to develop renewable energy within its range. These biological opinions concluded that proposed solar plants were not likely to jeopardize the continued existence of the desert tortoise primarily because they were located outside of critical habitat and desert wildlife management areas that contain most of the land base required for the recovery of the species. The proposed actions also included numerous measures intended to protect desert tortoise during the construction of the projects, such as translocation of affected individuals. In aggregate, these projects would result in an overall loss of approximately 43,920 acres of habitat of the desert tortoise. We also predicted that the project areas supported up to 3,721 desert tortoises; we concluded that most of these individuals were small desert tortoises, that most large individuals would likely be translocated from project sites, and that most mortalities would be small desert tortoises that were not detected during clearance surveys. To date, 583 desert tortoises have been observed during construction of projects; most of these individuals were translocated from work areas, although some desert tortoises have been killed (see Appendix D). The mitigation required by the Bureau and California Energy Commission, the agencies permitting these facilities, resulted in the acquisition of private land and funding for the implementation of various actions that are intended to promote the recovery of the desert tortoise. These mitigation measures are consistent with recommendations in the recovery plans for the desert tortoise; many of the measures have been derived directly from the recovery plans and the Service supports their implementation. We expect that, based on the best available scientific information, they will result in conservation benefits to the desert tortoise; however, it is difficult to assess how desert tortoise populations will respond because of the long generation time of the species.

In August 2016, the Service (2016) issued a biological opinion to the Bureau for the land use plan amendment under the Desert Renewable Energy Conservation Plan. The land use plan amendment addressed all aspects of the Bureau's management of the California Desert Conservation Area; however, the Service and Bureau agreed that only those aspects related to the construction, operation, maintenance,

and decommissioning of renewable energy facilities were likely to adversely affect the desert tortoise. The land use plan amendment resulted in the designation of approximately 388,000 acres of development focus areas where the Bureau would apply a streamlined review process to applications for projects that generate renewable energy; the Bureau estimated that approximately 11,290 acres of modeled desert tortoise habitat within the development focus areas would eventually be developed for renewable energy. The Bureau also adopted numerous conservation and management actions as part of the land use plan amendment to further reduce the adverse effects of renewable energy development on the desert tortoise.

The land use plan amendment also increased the amount of land that the Bureau manages for conservation (e.g., areas of critical environmental concern, National Conservation Lands, etc.) from 6,118,135 to 8,689,669 acres (Bureau 2015a); not all of the areas subject to increased protection are within desert tortoise habitat. The Bureau will also manage lands outside of development focus areas according to numerous conservation and management actions; these conservation and management actions are more protective of desert tortoises than direction contained in the previous land use plan. The Service (2016) concluded that the land use plan amendment was not likely to jeopardize the continued existence of the desert tortoise and would benefit its recovery.

In addition to the biological opinions issued for solar development within the range of the desert tortoise, the Service (2012) also issued a biological opinion to the Department of the Army for the use of additional training lands at Fort Irwin. As part of this proposed action, the Department of the Army removed approximately 650 desert tortoises from 18,197 acres of the southern area of Fort Irwin, which had been off-limits to training. The Department of the Army would also use an additional 48,629 acres that lie east of the former boundaries of Fort Irwin; much of this parcel is either too mountainous or too rocky and low in elevation to support numerous desert tortoises.

The Service also issued a biological opinion to the Marine Corps that considered the effects of the expansion of the Marine Corps Air Ground Combat Center at Twentynine Palms (Service 2017). We concluded that the Marine Corps' proposed action, the use of approximately 167,982 acres of public and private land for training, was not likely to jeopardize the continued existence of the desert tortoise. Most of the expansion area lies within the Johnson Valley Off-highway Vehicle Management Area. As part of this proposed action, the Marine Corps removed 929 desert tortoises from the expansion area (Hoffmann 2017).

The incremental effect of the larger actions (i.e., solar development, the expansions of Fort Irwin and the Marine Corps Air Ground Combat Center) on the desert tortoise is unlikely to be positive, despite the numerous conservation measures that have been (or will be) implemented as part of the actions. The acquisition of private lands as mitigation for most of these actions increases the level of protection afforded these lands; however, these acquisitions do not create new habitat and Federal, State, and privately managed lands remain subject to most of the threats and stresses we discussed previously in this section. Although land managers have been implementing measures to manage these threats and we expect, based on the best available scientific information, that such measures provide conservation benefits to the desert tortoise, we have been unable, to date, to determine whether the expected benefits of the measures have yet been realized, at least in part because of the low reproductive capacity of the desert tortoise. Therefore, the conversion of habitat into areas that

are unsuitable for this species continues the trend of constricting the desert tortoise into a smaller portion of its range.

As the Service notes in the 5-year review (Service 2010), "(t)he threats identified in the original listing rule continue to affect the (desert tortoise) today, with invasive species, wildfire, and renewable energy development coming to the forefront as important factors in habitat loss and conversion. The vast majority of threats to the desert tortoise or its habitat are associated with human land uses." Oftedal's work (2002 in Service 2010) suggests that invasive weeds may adversely affect the physiological health of desert tortoises. Using captive neonate and yearling desert tortoises, Drake *et al.* (2016) found that individuals "eating native forbs had better body condition and immune functions, grew more, and had higher survival rates (>95%) than (desert) tortoises consuming any other diet"; health and body condition declined in individuals fed only grasses (native or non-native). Current information indicates that invasive species likely affect a large portion of the desert tortoise's range. Furthermore, high densities of weedy species increase the likelihood of wildfires; wildfires, in turn, destroy native species and further the spread of invasive weeds.

Drake *et al.* (2015) "compared movement patterns, home-range size, behavior, microhabitat use, reproduction, and survival for adult desert tortoises located in, and adjacent to, burned habitat" in Nevada. They noted that the fires killed many desert tortoises but found that, in the first 5 years post-fire, individuals moved deeper into burned habitat on a seasonal basis and foraged more frequently in burned areas (corresponding with greater production of annual plants and herbaceous perennials in these areas). Production of annual plants upon which desert tortoises feed was 10 times greater in burned versus unburned areas but was dominated by non-native species [e.g., red brome (*Bromus rubens*)] that frequently have lower digestibility than native vegetation. During years six and seven, the movements of desert tortoises into burned areas contracted with a decline in the live cover of a perennial forage plant that rapidly colonizes burned areas. Drake *et al.* (2015) did not find any differences in health or survivorship for desert tortoises occupying either habitat (burned or unburned) during this study or in reproduction during the seventh year after the fire.

Climate change is likely to affect the prospects for the long-term conservation of the desert tortoise. For example, predictions for climate change within the range of the desert tortoise suggest more frequent and/or prolonged droughts with an increase of the annual mean temperature by 3.5 to 4.0 degrees Celsius. The greatest increases will likely occur in summer [June-July-August mean increase of as much as 5 degrees Celsius (Christensen *et al.* 2007 in Service 2010)]. Precipitation will likely decrease by 5 to 15 percent annually in the region; with winter precipitation decreasing by up to 20 percent and summer precipitation increasing by up to 5 percent. Because germination of the desert tortoise's food plants is highly dependent on cool- season rains, the forage base could be reduced due to increasing temperatures and decreasing precipitation in winter. Although drought occurs routinely in the Mojave Desert, extended periods of drought have the potential to affect desert tortoises and their habitats through physiological effects to individuals (i.e., stress) and limited forage availability. To place the consequences of long-term drought in perspective, Longshore *et al.* (2003) demonstrated that even short-term drought could result in elevated levels of mortality of desert tortoises. Therefore, long-term drought is likely to have even greater effects, particularly given that the current fragmented nature of desert tortoise habitat (e.g., urban and agricultural development, highways, freeways, military training areas, etc.) will make recolonization of extirpated areas difficult, if not impossible.

Core Criteria for the Jeopardy Determination

When determining whether a proposed action is likely to jeopardize the continued existence of a species, we are required to consider whether the action would "reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Although the Service does not explicitly address these metrics in the 5-year review, we have used the information in that document and more recent information to summarize the status of the desert tortoise with respect to its reproduction, numbers, and distribution.

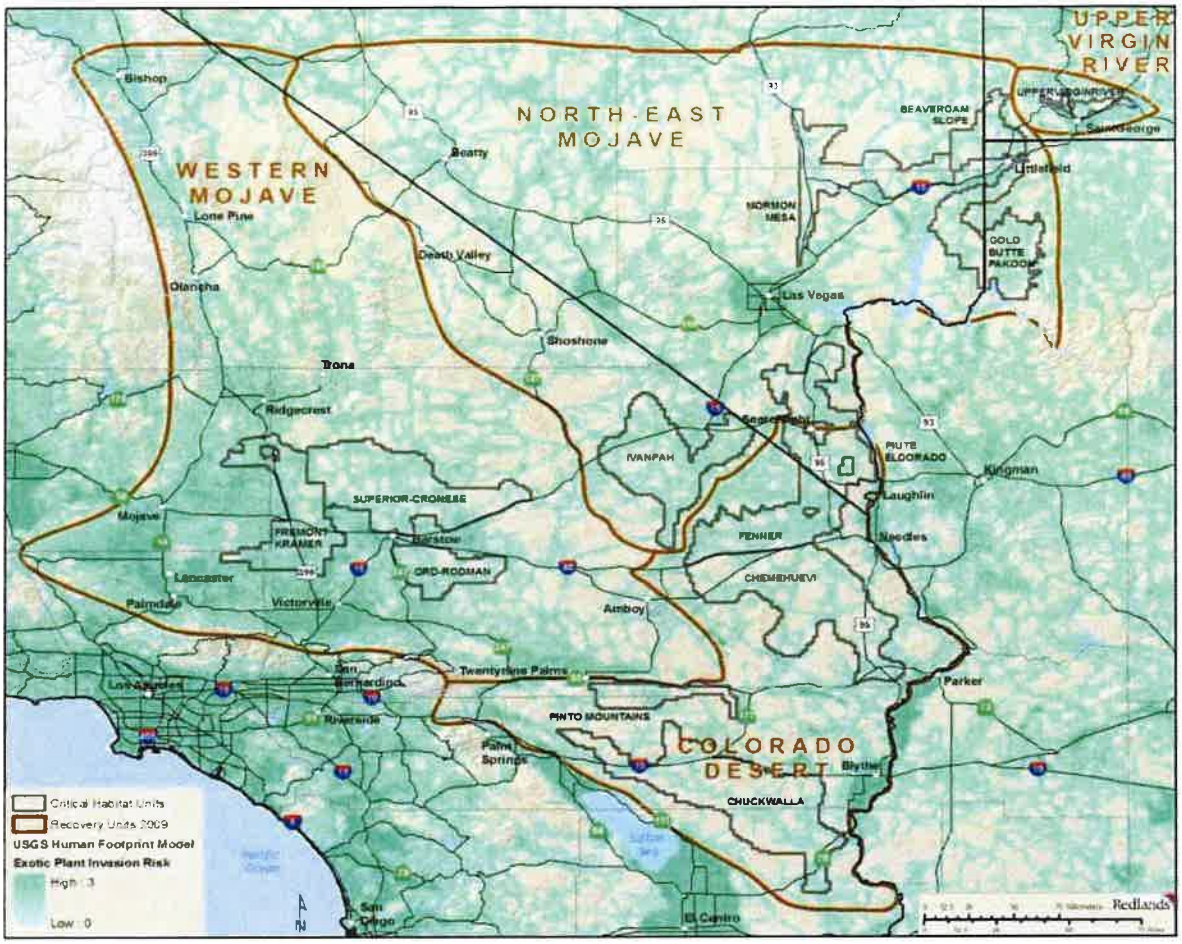
Reproduction

In the 5-year review, the Service notes that desert tortoises increase their reproduction in high rainfall years; more rain provides desert tortoises with more high quality food (i.e., plants that are higher in water and protein), which, in turn, allows them to lay more eggs. Conversely, the physiological stress associated with foraging on food plants with insufficient water and nitrogen may leave desert tortoises vulnerable to disease (Oftedal 2002 in Service 2010), and the reproductive rate of diseased desert tortoises is likely lower than that of healthy animals. Young desert tortoises also rely upon high-quality, low-fiber plants (e.g., native annual plants) with nutrient levels not found in the invasive weeds that have increased in abundance across its range (Oftedal *et al.* 2002; Tracy *et al.* 2004). Compromised nutrition of young desert tortoises likely represents an effective reduction in reproduction by reducing the number of animals that reaches adulthood; see previous information from Drake *et al.* (2016). Consequently, although we do not have quantitative data that show a direct relationship, the abundance of weedy species within the range of the desert tortoise has the potential to affect the reproduction of desert tortoises and recruitment into the adult population in a negative manner.

Various human activities have introduced numerous species of non-native invasive plants into the California desert. Routes that humans use to travel through the desert (paved and unpaved roads, railroads, motorcycle trials, etc.) serve as pathways for new species to enter habitat of the desert tortoise and for species that currently occur there to spread. Other disturbances of the desert substrate also provide invasive species with entry points into the desert. The following map depicts the potential for these species to invade habitat of the desert tortoise. The reproductive capacity of the desert tortoise may be compromised to some degree by the abundance and distribution of invasive weeds across its range; the continued increase in human access across the desert likely continues to facilitate the spread of weeds and further affect the reproductive capacity of the species.

Numbers

In the 5-year review, the Service discusses various means by which researchers have attempted to determine the abundance of desert tortoises and the strengths and weaknesses of those methods. Due to differences in area covered and especially to the non-representative nature of earlier sample sites, data gathered by the Service's current range-wide monitoring program cannot be reliably compared to information gathered through other means at this time.



Data from small-scale study plots (e.g., 1 square mile) established as early as 1976 and surveyed primarily through the mid-1990s indicate that localized population declines occurred at many sites across the desert tortoise's range, especially in the western Mojave Desert; spatial analyses of more widespread surveys also found evidence of relatively high mortality in some parts of the range (Tracy *et al.* 2004). Although population densities from the local study plots cannot be extrapolated to provide an estimate of the number of desert tortoises on a range-wide basis, historical densities in some parts of the desert exceeded 100 adults in a square mile (Tracy *et al.* 2004). The Service (2010) concluded that "appreciable declines at the local level in many areas, which coupled with other survey results, suggest that declines may have occurred more broadly."

The range-wide monitoring that the Service initiated in 2001 is the first comprehensive attempt to determine the densities of desert tortoises in conservation areas across their range. The Desert Tortoise Recovery Office (Service 2015a) used annual density estimates obtained from this sampling effort to evaluate range-wide trends in the density of desert tortoises over time. (All references to the density of desert tortoises are averages. Some areas support higher densities and some lower; desert tortoises are not distributed in uniform densities across large areas.) This analysis indicates that densities in the Northeastern Mojave Recovery Unit have increased since 2004, with the increase

apparently resulting from increased survival of adults and sub-adults moving into the adult size class. The analysis also indicates that the populations in the other four recovery units are declining; the following table depicts the estimated numbers of desert tortoises within conservation areas in each recovery unit and the rates of population change. Surveys did not include the steepest slopes in these desert tortoise conservation areas; however, the model developed by Nussear *et al.* (2009) generally rates steep slopes as less likely to support desert tortoises. Densities in the Joshua Tree and Piute Valley conservation areas within the Colorado Desert Recovery Unit seem to be increasing, although densities in the recovery unit as a whole continue to decline.

Recovery Units	**2004**	**2014**	**Change**	**Percentage of Change**
Western Mojave	35,777	17,644	-18,133	-51
Colorado Desert	67,087	42,770	-24,317	-36
Northeastern Mojave	4,920	18,220	+13,300	+270
Eastern Mojave	16,165	5,292	-10,873	-67
Upper Virgin River	2,397	1,760	-637	-27
Total	126,346	85,686	-40,660	-32

In the previous summary of the results of range-wide sampling (Service 2014), we extrapolated the densities obtained within conservation areas (e.g., desert wildlife management area, Desert Tortoise Research Natural Area, Joshua Tree National Park) to all modeled habitat of the desert tortoise. This extrapolation may have exaggerated the number of desert tortoises because we applied the values for areas where densities are generally highest (i.e., the conservation areas) to areas where desert tortoises exist in very low densities (e.g., the Antelope Valley). We are also aware of a few areas where the density of desert tortoises outside of conservation areas is higher than inside.

To further examine the status of desert tortoise populations over time, we compared the densities of desert tortoises in the Western Mojave Recovery Unit between 2004 and 2014 (see Service 2015a). In 2004, desert tortoise conservation areas surveyed in the Western Mojave Recovery Unit supported an average density of approximately 5.7 adults per square kilometer (14.8 per square mile). In contrast, surveys in the same areas in 2014 indicated that densities had decreased to 2.8 adults per square kilometer (7.3 per square mile). This decline in densities is consistent with decreases in density of populations in all recovery units over the same time period, with the exception of the Northeastern Mojave Recovery Unit. In fact, historical survey data from numerous plots in the Western Mojave Recovery Unit during the late 1970s and early 1980s suggest that adult desert tortoise densities ranged from 50 to 150 per square mile (Tracy *et al.* 2004).

To further assess the status of the desert tortoise, the Desert Tortoise Recovery Office (Service 2015) used multi-year trends from the best-fitting model describing loge-transformed density of adult animals per square kilometer. In 2014, 3 of the 5 recovery units supported densities below 3.9 adult animals per square kilometer [Western Mojave (2.8), Eastern Mojave (1.5), and Colorado Desert (3.7); see table 10 in Service 2015b], which is the minimum density recommended to avoid extinction in the 1994 recovery plan. The Northeastern Mojave Recovery Unit supported 4.4 adult desert tortoises per square kilometer and the Upper Virgin River Recovery Unit, which is by far the smallest recovery unit, supported 15.3 adults per square kilometer.

Allison (2014) evaluated changes in size distribution of desert tortoises since 2001. In the Western Mojave and Colorado Desert recovery units, the relative number of juveniles to adults indicates that juvenile numbers are declining faster than adults. In the Eastern Mojave, the number of juvenile desert tortoises is also declining, but not as rapidly as the number of adults. In the Upper Virgin River Recovery Unit, trends in juvenile numbers are similar to those of adults; in the Northeastern Mojave Recovery Unit, the number of juveniles is increasing, but not as rapidly as are adult numbers in that recovery unit. Juvenile numbers, like adult densities, are responding in a directional way, with increasing, stable, or decreasing trends, depending on the recovery unit where they are found.

In this context, we consider "juvenile" desert tortoises to be animals smaller than 180 millimeters in length. The Service does not include juveniles detected during range-wide sampling in density estimations because they are more difficult to detect and surveyors frequently do not observe them during sampling. However, this systematic range-wide sampling provides us with an opportunity to compare the proportion of juveniles to adults observed between years.

Distribution

Prior to 1994, desert tortoises were extirpated from large areas within their distributional limits by urban and agricultural development (e.g., the cities of Barstow and Lancaster, California; Las Vegas, Nevada; and St. George, Utah; etc.; agricultural areas south of Edwards Air Force Base and east of Barstow), military training (e.g., Fort Irwin, Leach Lake Gunnery Range), and off-road vehicle use (e.g., portions of off-road management areas managed by the Bureau and unauthorized use in areas such as east of California City, California).

Since 1994, urban development around Las Vegas has likely been the largest contributor to habitat loss throughout the range. Desert tortoises have been essentially removed from the 18,197-acre southern expansion area at Fort Irwin (Service 2012). The development of large solar facilities has also reduced the amount of habitat available to desert tortoises. No solar facilities have been developed within desert tortoise conservation areas, such as desert wildlife management areas, although such projects have occurred in areas that the Service considers important linkages between conservation areas (e.g., Silver State South Project in Nevada).

The following table depicts acreages of habitat (as modeled by Nussear *et al.* 2009, using only areas with a probability of occupancy by desert tortoises greater than 0.5 as potential habitat) within the recovery units of the desert tortoise and of impervious surfaces as of 2006 (Fry *et al.* 2011); calculations are by Darst (2014). Impervious surfaces include paved and developed areas and other disturbed areas that have zero probability of supporting desert tortoises. All units are in acres.

Recovery Units	**Modeled Habitat**	**Impervious Surfaces (percentage)**	**Remaining Modeled Habitat**
Western Mojave	7,585,312	1,989,843 (26)	5,595,469
Colorado Desert	4,950,225	510,862 (10)	4,439,363
Northeastern Mojave	3,012,293	386,182 (13)	2,626,111
Eastern Mojave	4,763,123	825,274 (17)	3,937,849
Upper Virgin River	231,460	84,404 (36)	147,056
Total	20,542,413	3,796,565 (18)	16,745,848

The Service (2010) concluded, in its 5-year review, that the distribution of the desert tortoise has not changed substantially since the publication of the original recovery plan in 1994 in terms of the overall extent of its range. Since 2010, we again conclude that the species' distribution has not changed substantially in terms of the overall extent of its range, although desert tortoises have been removed from several thousand acres because of solar development and military activities.

Status of Critical Habitat of the Desert Tortoise

The Service designated critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah in a final rule published February 8, 1994 (59 FR 5820). The Service designates critical habitat to identify the key biological and physical needs of the species and key areas for recovery and to focus conservation actions on those areas. Critical habitat is composed of specific geographic areas that contain the biological and physical features essential to the species' conservation and that may require special management considerations or protection. These features, which include space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats, are called the physical and biological features of critical habitat. The specific physical and biological features of desert tortoise critical habitat are: sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality.

Critical habitat of the desert tortoise would not be able to fulfill its conservation role without each of the physical and biological features being functional. As examples, critical habitat would not function properly if a sufficient amount of forage species were present but human-caused mortality was excessive; an area with sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow would not function properly without adequate forage species.

The final rule for designation of critical habitat did not explicitly ascribe specific conservation roles or functions to the various critical habitat units. Rather, it refers to the strategy of establishing recovery units and desert wildlife management areas recommended by the recovery plan for the desert tortoise, which had been published as a draft at the time of the designation of critical habitat, to capture the "biotic and abiotic variability found in desert tortoise habitat" (59 FR 5820, see page 5823). Specifically, we designated the critical habitat units to follow the direction provided by the draft recovery plan (Service 1993) for the establishment of desert wildlife management areas. The critical habitat units in aggregate are intended to protect the variability that occurs across the large range of the desert tortoise; the loss of any specific unit would compromise the ability of critical habitat as a whole to serve its intended function and conservation role.

Despite the fact that desert tortoises do not necessarily need to move between critical habitat units to complete their life histories, both the original and revised recovery plans discuss the importance of these critical habitat units and connectivity between them for the recovery of the species. Although it determined that linkages between critical habitat units did not meet the definition of critical habitat, the Service (1994) recommended the identification of buffer zones and linkages for smaller desert

tortoise conservation areas to aid in overall recovery efforts; however, land management agencies have generally not established such areas.

We did not designate the Desert Tortoise Natural Area and Joshua Tree National Park in California and the Desert National Wildlife Refuge in Nevada as critical habitat because they are "primarily managed as natural ecosystems" (59 FR 5820, see page 5825) and provide adequate protection to desert tortoises. Since the designation of critical habitat, Congress increased the size of Joshua Tree National Park and created the Mojave National Preserve. A portion of the expanded boundary of Joshua Tree National Park lies within critical habitat of the desert tortoise; portions of other critical habitat units lie within the boundaries of the Mojave National Preserve.

Within each critical habitat unit, both natural and anthropogenic factors affect the function of the physical and biological features of critical habitat. As an example of a natural factor, in some specific areas within the boundaries of critical habitat, such as within and adjacent to dry lakes, some of the physical and biological features are naturally absent because the substrate is extremely salty; desert tortoises do not normally reside in such areas. Comparing the acreage of desert tortoise habitat as depicted by Nussear *et al.*'s (2009) model to the gross acreage of the critical habitat units demonstrates quantitatively that the entire area within the boundaries of critical habitat likely does not support the physical and biological features. In the following table, the acreage for modeled habitat is for the area in which the probability that desert tortoises are present is greater than 0.5. The acreages of modeled habitat do not include loss of habitat due to human-caused impacts. The difference between gross acreage and modeled habitat is 653,214 acres; that is, approximately 10 percent of the gross acreage of the designated critical habitat is not considered modeled habitat. All units are acres.

Critical Habitat Unit	**Gross Acreage**	**Modeled Habitat**
Superior-Cronese	766,900	724,967
Fremont-Kramer	518,000	501,095
Ord-Rodman	253,200	184,155
Pinto Mountain	171,700	144,056
Piute-Eldorado	970,600	930,008
Ivanpah Valley	632,400	510,711
Chuckwalla	1,020,600	809,319
Chemehuevi	937,400	914,505
Gold Butte-Pakoon	488,300	418,189
Mormon Mesa	427,900	407,041
Beaver Dam Slope	204,600	202,499
Upper Virgin River	54,600	46,441
Totals	6,446,200	5,792,986

Human activities can have obvious or more subtle effects on the physical and biological features of critical habitat. The grading of an area and subsequent construction of a building removes physical and biological features; this action has an obvious effect on critical habitat. The revised recovery plan identifies human activities such as urbanization and the proliferation of roads and highways as threats to the desert tortoise and its habitat; these threats are examples of activities that have a clear effect on the physical and biological features of critical habitat.

Condition of the Physical and Biological Features of Critical Habitat

We have included the following paragraphs from the revised recovery plan for the desert tortoise (Service 2011) to demonstrate that other anthropogenic factors affect the physical and biological features of critical habitat in more subtle ways. All references are in the revised recovery plan (i.e., in Service 2011); we have omitted some information from the revised recovery plan where the level of detail was unnecessary for the current discussion.

> Surface disturbance from [off-highway vehicle] activity can cause erosion and large amounts of dust to be discharged into the air. Recent studies on surface dust impacts on gas exchanges in Mojave Desert shrubs showed that plants encrusted by dust have reduced photosynthesis and decreased water-use efficiency, which may decrease primary production during seasons when photosynthesis occurs (Sharifi *et al.* 1997). Sharifi *et al.* (1997) also showed reduction in maximum leaf conductance, transpiration, and water-use efficiency due to dust. Leaf and stem temperatures were also shown to be higher in plants with leaf-surface dust. These effects may also impact desert annuals, an important food source for [desert] tortoises.
>
> [Off-highway vehicle] activity can also disturb fragile cyanobacterial-lichen soil crusts, a dominant source of nitrogen in desert ecosystems (Belnap 1996). Belnap (1996) showed that anthropogenic surface disturbances may have serious implications for nitrogen budgets in cold desert ecosystems, and this may also hold true for the hot deserts that [desert] tortoises occupy. Soil crusts also appear to be an important source of water for plants, as crusts were shown to have 53 percent greater volumetric water content than bare soils during the late fall when winter annuals are becoming established (DeFalco *et al.* 2001). DeFalco *et al.* (2001) found that non-native plant species comprised greater shoot biomass on crusted soils than native species, which demonstrates their ability to exploit available nutrient and water resources. Once the soil crusts are disturbed, non-native plants may colonize, become established, and out-compete native perennial and annual plant species (D'Antonio and Vitousek 1992; DeFalco *et al.* 2001). Invasion of non-native plants can affect the quality and quantity of plant foods available to desert tortoises. Increased presence of invasive plants can also contribute to increased fire frequency.
>
> Proliferation of invasive plants is increasing in the Mojave and Sonoran deserts and is recognized as a substantial threat to desert tortoise habitat. Many species of non-native plants from Europe and Asia have become common to abundant in some areas, particularly where disturbance has occurred and is ongoing. As non-native plant species become established, native perennial and annual plant species may decrease, diminish, or die out (D'Antonio and Vitousek 1992). Land managers and field scientists identified 116 species of non-native plants in the Mojave and Colorado deserts (Brooks and Esque 2002).
>
> Increased levels of atmospheric pollution and nitrogen deposition related to increased human presence and combustion of fossil fuels can cause increased levels of soil nitrogen, which in turn may result in significant changes in plant communities (Aber *et al.* 1989). Many of the non-native annual plant taxa in the Mojave region evolved in more fertile Mediterranean regions and benefit from increased levels of soil nitrogen, which gives them a competitive edge over native annuals. Studies at three sites within the central, southern, and western Mojave Desert indicated that increased levels of soil nitrogen can increase the dominance of non-native annual plants and

promote the invasion of new species in desert regions. Furthermore, increased dominance by non-native annuals may decrease the diversity of native annual plants, and increased biomass of non-native annual grasses may increase fire frequency (Brooks 2003).

This summary from the revised recovery plan (Service 2011) demonstrates how the effects of human activities on habitat of the desert tortoise are interconnected. In general, surface disturbance causes increased rates of erosion and generation of dust. Increased erosion alters additional habitat outside of the area directly affected by altering the nature of the substrate, removing shrubs, and possibly destroying burrows and other shelter sites. Increased dust affects photosynthesis in the plants that provide cover and forage to desert tortoises. Disturbed substrates and increased atmospheric nitrogen enhance the likelihood that invasive species will become established and out-compete native species; the proliferation of weedy species increases the risk of large-scale fires, which further move habitat conditions away from those that are favorable to desert tortoises.

The following paragraphs generally describe how the threats described in the revised recovery plan affect the physical and biological features of critical habitat of the desert tortoise.

Sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow.

Urban and agricultural development, concentrated use by off-road vehicles, and other activities such as development of transmission lines and pipelines completely remove habitat. Although we are aware of local areas within the boundaries of critical habitat that have been heavily disturbed, we do not know of any areas that have been disturbed to the intensity and extent that the function of this physical and biological feature has been compromised. To date, the largest single loss of critical habitat is the use of 18,197 acres of additional training land in the southern portion of Fort Irwin.

The widening of existing freeways likely caused the second largest loss of critical habitat. Despite these losses of critical habitat, which occur in a linear manner, the critical habitat units continue to support sufficient space to support viable populations within each of the six recovery units.

In some cases, major roads likely disrupt the movement, dispersal, and gene flow of desert tortoises. State Route 58 and Highway 395 in the Fremont-Kramer Critical Habitat Unit, Fort Irwin Road in the Superior-Cronese Critical Habitat Unit, and Interstate 10 in the Chuckwalla Critical Habitat Unit are examples of large and heavily travelled roads that likely disrupt movement, dispersal, and gene flow. Roads that have been fenced and provided with underpasses may alleviate this fragmentation to some degree; however, such facilities have not been in place for sufficient time to determine whether they will eliminate fragmentation.

The threats of invasive plant species described in the revised recovery plan generally do not result in the removal of this physical and biological feature because they do not convert habitat into impervious surfaces, as would urban development.

Sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species.

This physical and biological feature addresses the ability of critical habitat to provide adequate nutrition to desert tortoises. As described in the revised recovery plan and 5-year review, grazing, historical fire, invasive plants, altered hydrology, drought, wildfire potential, fugitive dust, and climate change/temperature extremes contribute to the stress of "nutritional compromise." Paved and unpaved roads through critical habitat of the desert tortoise provide avenues by which invasive native species disperse; these legal routes also provide the means by which unauthorized use occurs over large areas of critical habitat. Nitrogen deposition from atmospheric pollution likely occurs throughout all the critical habitat units and exacerbates the effects of the disturbance of substrates. Because paved and unpaved roads are so widespread through critical habitat, this threat has diminished the value of critical habitat for conservation of the desert tortoise throughout its range, to some degree. See the Status of the Desert Tortoise section of this biological opinion for a map that depicts the routes by which invasive weeds have access to critical habitat; the routes shown on the map are a subset of the actual number of routes that cross critical habitat of the desert tortoise.

Suitable substrates for burrowing, nesting, and overwintering.

Surface disturbance, motor vehicles traveling off route, use of off-highway vehicles management areas, off-highway vehicles events, unpaved roads, grazing, historical fire, wildfire potential, altered hydrology, and climate change leading to shifts in habitat composition and location, storms, and flooding can alter substrates to the extent that they are no longer suitable for burrowing, nesting, and overwintering. Erosion caused by these activities can alter washes to the extent that desert tortoise burrows placed along the edge of a wash, which is a preferred location for burrows, could be destroyed. We expect that the area within critical habitat that is affected by off-road vehicle use to the extent that substrates are no longer suitable is relatively small in relation to the area that desert tortoises have available for burrowing, nesting, and overwintering; consequently, off-road vehicle use has not had a substantial effect on this physical and biological feature.

Most livestock allotments have been eliminated from within the boundaries of critical habitat. Of those that remain, livestock would compact substrates to the extent that they would become unsuitable for burrowing, nesting, and overwintering only in areas of concentrated use, such as around watering areas and corrals. Because livestock grazing occurs over a relatively small portion of critical habitat and the substrates in most areas within livestock allotments would not be substantially affected, suitable substrates for burrowing, nesting, and overwintering remain throughout most of the critical habitat units.

Burrows, caliche caves, and other shelter sites.

Human-caused effects to burrows, caliche caves, and other shelter sites likely occur at a similar rate as effects to substrates for burrowing, nesting, and overwintering for the same general reasons. Consequently, sufficient burrows, caliche caves, and other shelter sites remain in the critical habitat units.

Sufficient vegetation for shelter from temperature extremes and predators.

In general, sufficient vegetation for shelter from temperature extremes and predators remains throughout critical habitat. In areas where large fires have occurred in critical habitat, many of the shrubs that provide shelter from temperature extremes and predators have been destroyed; in such areas, cover sites may be a limiting factor. The proliferation of invasive plants poses a threat to shrub cover throughout critical habitat as the potential for larger and more frequent wildfires increases.

In 2005, wildfires in Nevada, Utah, and Arizona burned extensive areas of critical habitat (Service 2010). Although different agencies report slightly different acreages, the following table provides an indication of the scale of the fires.

Critical Habitat Unit	Total Area Burned (acres)	Percent of the Critical Habitat Unit Burned
Beaver Dam Slope	53,528	26
Gold-Butte Pakoon	65,339	13
Mormon Mesa	12,952	3
Upper Virgin River	10,557	19

The revised recovery plan notes that the fires caused statistically significant losses of perennial plant cover, although patches of unburned shrubs remained. Given the patchiness with which the physical and biological features of critical habitat are distributed across the critical habitat units and the varying intensity of the wildfires, we cannot quantify precisely the extent to which these fires disrupted the function and value of the critical habitat.

Habitat protected from disturbance and human-caused mortality.

In general, the Federal agencies that manage lands within the boundaries of critical habitat have adopted land management plans that include implementation of some or all of the recommendations contained in the original recovery plan for the desert tortoise (see pages 70 to 72 of Service 2010). To at least some degree, the adoption of these plans has resulted in the implementation of management actions that are likely to reduce the disturbance and human-caused mortality of desert tortoises. For example, these plans resulted in the designation of open routes of travel and the closure (and, in some cases, physical closure) of unauthorized routes. Numerous livestock allotments have been relinquished by the permittees and cattle no longer graze these allotments. Because of these planning efforts, the Bureau has proposed the withdrawal of some areas of critical habitat from mineral entry (79 FR 51190; the withdrawal of 10,094.03 acres of public lands within the Superior-Cronese Critical Habitat Unit). Because of actions on the part of various agencies, many miles of highways and other paved roads have been fenced to prevent desert tortoises from wandering into traffic and being killed. The Service and other agencies of the Desert Managers Group in California are implementing a plan to remove common ravens that prey on desert tortoises and to undertake other actions that would reduce subsidies (i.e., food, water, sites for nesting, roosting, and perching, etc.) that facilitate their abundance in the California Desert (Service 2008). The Bureau's (2016) land use plan amendment for the Desert Renewable Energy Conservation Plan increased the amount of land under protective status and adopted conservation and management actions that furthered the Bureau's goals for these areas.

Despite the implementation of these actions, disturbance and human-caused mortality continue to occur in many areas of critical habitat (which overlap the Bureau's areas of critical environmental concern for the most part and are the management units for which most data are collected) to the extent that the value of critical habitat for the conservation of the desert tortoise is, to some degree, diminished. For example, many highways and other paved roads in California remain unfenced. Hughson and Darby (2011) noted that as many as 10 desert tortoises are reported killed annually on paved roads within Mojave National Preserve. Because carcasses on roads are quickly removed by scavengers or destroyed by other vehicles, we expect that far more desert tortoises are killed on roads than are reported.

Unauthorized off-road vehicle use continues to disturb habitat and result in loss of vegetation within the boundaries of critical habitat; although we have not documented the death of desert tortoises as a direct result of this activity, it likely occurs. Additionally, the habitat disturbance caused by this unauthorized activity exacerbates the spread of invasive plants, which displace native plants that are important forage for the desert tortoise, thereby increasing the physiological stress faced by desert tortoises.

Finally, the Bureau will not allow the development of renewable energy facilities on public lands within the boundaries of areas of critical environmental concern and National Conservation Lands (which largely correspond to the boundaries of critical habitat). Counties have not specifically restricted the development of renewable energy facilities on private lands within the boundaries of areas of critical environmental concern and National Conservation Lands. However, the checkerboard pattern of land ownership would likely necessitate that the Bureau consider issuance of a right-of-way for such a facility, which likely decreases the potential for such proposals in the future.

Summary of the Status of Critical Habitat of the Desert Tortoise

As noted in the 5-year review and revised recovery plan for the desert tortoise (Service 2010, 2011), critical habitat of the desert tortoise is subject to landscape-level impacts in addition to the site-specific effects of individual human activities. On the landscape level, atmospheric pollution is increasing the level of nitrogen in desert substrates; the increased nitrogen exacerbates the spread of invasive plants, which outcompete the native plants necessary for desert tortoises to survive. As invasive plants increase in abundance, the threat of large wildfires increases; wildfires have the potential to convert the shrubland-native annual plant communities upon which desert tortoises depend to a community with fewer shrubs and more invasive plants. In such a community, shelter and forage would be more difficult for desert tortoises to find.

Invasive plants have already compromised the value of critical habitat for the conservation of the desert tortoise to some degree with regard to the second physical and biological feature (i.e., sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species). These effects likely extend to the entirety of critical habitat; given the numerous routes by which invasive plants can access critical habitat and the large spatial extent that is subject to nitrogen from atmospheric pollution.

The value of critical habitat has been diminished to some degree with regard to the last physical and biological feature (i.e., habitat protected from disturbance and human-caused mortality) as a result of

the wide variety of human activities that continues to occur within its boundaries. These effects result from the implementation of discrete human activities and are thus more site-specific in nature.

Although the remaining physical and biological features have been affected to some degree by human activities, these impacts have not, to date, appreciably diminished the value of the critical habitat units for the conservation of the desert tortoise. We have reached this conclusion primarily because the effects are localized and thus do not affect the value of large areas of critical habitat for the conservation of the desert tortoise.

Land managers have undertaken actions to improve the status of critical habitat. For example, as part of its efforts to offset the effects of the use of additional training maneuver lands at Fort Irwin (Service 2004), the Department of the Army acquired the private interests in the Harper Lake and Cronese Lakes allotments, which are located within critical habitat in the Western Mojave Recovery Unit; as a result, cattle have been removed from these allotments. Livestock have been removed from numerous other allotments through various means throughout the range of the desert tortoise. The retirement of allotments assists in the recovery of the species by eliminating disturbance to the physical and biological features of critical habitat by cattle and range improvements.

ENVIRONMENTAL BASELINE FOR THE DESERT TORTOISE AND ITS CRITICAL HABITAT

Action Area

The implementing regulations for section 7(a)(2) of the Endangered Species Act describe the action area to be all areas affected directly or indirectly by the Federal action and not merely the immediate area affected by the proposed project (50 CFR 402.02). The action area for this biological opinion comprises approximately 10 million acres of lands managed by the Bureau in the California Desert Conservation Area. For some activities, the Bureau's authorizations will lead to effects to desert tortoises and critical habitat on non-federal lands. The action area for this biological opinion also encompasses activities on non-federal lands that are dependent upon the Bureau's authorizations. The action area for the Bureau's proposed action occurs entirely within the California Desert Conservation Area.

Previous Consultations within the Action Area

The Bureau and Service have consulted on several land use plan amendments to the California Desert Conservation Area Plan with regard to the desert tortoise and its critical habitat (Service 2005, 2006, etc.). In these biological opinions, the Service concluded that the Bureau's proposed amendments were not likely to jeopardize the continued existence of the desert tortoise or result in the destruction or adverse modification of its critical habitat.

The Bureau and Service have previously consulted on the effects of the land use plan amendment for the Desert Renewable Energy Conservation Plan (Service 2016) on the desert tortoise and its critical habitat. The Service concluded that the land use plan amendment for the Desert Renewable Energy Conservation Plan and was not likely to jeopardize the desert tortoise or result in the destruction or adverse modification its critical habitat.

Status of the Desert Tortoise in the Action Area

In the following paragraphs, we have provided a brief summary of the status of the desert tortoise in each recovery unit. Range-wide sampling allows us to estimate the number of desert tortoises the sampled areas of the conservation areas in each recovery unit. We cannot estimate the total number of desert tortoises because we do not conduct range-wide sampling outside of conservation areas. Generally, we expect that desert tortoises occur at lower densities outside of conservation areas, although we are aware of a few instances of higher densities. Overall, the number of desert tortoises has declined within the action area since 2004.

The following map is from the most recent analysis of range-wide sampling (Service 2015b); we summarized the data in the table from the same source. The map depicts the long-term monitoring strata corresponding to conservation areas for the desert tortoise in each recovery unit. Table 10 (in Service 2015b) provides estimates of adult densities in California's desert tortoise conservation areas in 2014 and the change in abundance within conservation areas in each recovery unit between 2004 and 2014 based on multi-year trends from the best-fitting model describing $\log_e$-transformed density/square kilometer. Because the model is log-linear, standard errors are multiples of the density estimates. The multiplier for the desert tortoise conservation area estimates was 0.3268. Estimates for the recovery units may differ from simple sums of abundance for conservation areas because are based on the ANCOVA parameter estimates and are affected by missing years of data. The totals for the Colorado Desert and Eastern Mojave Recovery Units include the abundances in conservation areas outside of California.