STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

November 6, 2013

Edward W. O'Neill
DAVIS WRIGHT TREMAINE LLP
505 Montgomery Street, Suite 800
San Francisco, CA 94111-6533

Subject: Project Completeness Review - Crown Castle San Mateo County DAS project (formerly Crown Castle Davenport, San Mateo DAS project)

Dear Mr O'Neill

California Public Utility Commission's (CPUC) has reviewed the revised Proponent's Environmental Assessment (PEA) dated September 2013. The CPUC's Information and Criteria List and PEA Checklist were used as a basis for evaluating completeness and ensuring that sufficient information has been provided to the CPUC to complete environmental analysis for the subject project, as required by the California Environmental Quality Act (CEQA).

Based on review of the PEA, CPUC finds that the PEA is sufficiently complete to enable CPUC to independently analyze the environmental effects of this project. CPUC has developed an administrative draft Project Description that identifies outstanding points that require clarification, in Attachment A – admin draft Project Description, but do not rise to the point of deficiency, however, are important in providing an accurate description of the project for CEQA purposes.

If you have any questions regarding this letter or need additional information, please contact me at (415) 703-5484.

Sincerely,

Jensen Uchida
Project Manager

Att A : admin draft Project Description

2.0 EXPANDED PROJECT DESCRIPTION

2.1 INTRODUCTION

On February 5, 2013, Crown Castle NG West, Inc., formerly NextG Networks of California, Inc., (Crown Castle or the Applicant) filed an application (13-02-007) which included a Proponent's Environmental Assessment (PEA) with the California Public Utilities Commission (CPUC) for an Authority to Construct and for Deviation from Public Utilities Code Section 320 for the San Mateo County Project (proposed project). On September 6, 2013, the Applicant filed an amended application and an updated PEA to reflect proposed changes for the original filing. Accordingly, the amended application and PEA describes the proposed project.

The proposed project would consist of installation of distributed antenna systems (DAS) network facilities, including fiber optic cable, antennas, nodes and related facilities along approximately 14.2 miles of existing highway rights-of-way (ROW), primarily along Highway 1 (Hwy 1) in San Mateo County. Approximately 12.8 miles of the fiber-optic cable would be placed aerially on existing utility poles and approximately 1.4 miles of new conduit would be installed underground within existing ROWs.

2.2 PROJECT OBJECTIVES

The Applicant provides point-to-point radiofrequency (RF) transport and backhaul services that augment wireless broadband services in dense urban and isolated suburban/rural areas for its wireless carrier customers. The Applicant provides these services over non-switched, digital fiber optic communications networks referred to as DAS networks.

The proposed project would expand wireless broadband services in rural, coastal areas of San Mateo County, California. According to the Applicant, the primary objectives of the proposed project are:

- To expand the wireless voice and broadband services provided by Crown Castle's customer, Verizon Wireless, to an unserved/underserved rural area along a heavily traveled section of Hwy 1 in San Mateo County, thereby generally improving the area's communications and data system.
- To enhance public safety by providing expanded and more reliable communications access to emergency services.
- To provide a means to more efficiently expand wireless service by other carriers in this area through co-location or joint use of certain facilities; this could also increase competition among existing telecommunications carriers—an outcome that would be consistent with well-established California and federal telecommunications policy.
- To expand and enhance California's national and international telecommunications access.
- To enable existing telecommunications networks to better exchange traffic across California and improve reliability using high-quality, state-of-the-art technology.

2.3 PROJECT LOCATION

The approximately 14.2-mile route along Hwy 1, which the proposed project would occur, would be located within a public ROW or existing utility easement within unincorporated San Mateo

County, California (see Figure 4-1, Project Vicinity Map). In addition to the County of San Mateo, the proposed project alignment would traverse an existing 0.5 mile utility easement in Año Nuevo State Park.

Table 2-1 shows the length of various segments of the proposed project defined by the ROW.

Table 2-1: Proposed Project ROW

Segment	Aerial Portion (mile)	Underground Portion (mile)	Total ROW (mile)
Existing Hwy 1 ROW	6.9	1.4	8.3
Existing local public road ROW	4.0	0.0	4.0
Existing utility easement ROW	1.9	0.0	1.9
Total ROW	12.8	1.4	14.2

The alignment would generally follow Hwy 1 beginning at the San Mateo–Santa Cruz county line and continue in a northwesterly direction along Hwy 1 for a distance of approximately 7.7 miles where it would transition onto Pigeon Point Road. It would follow Pigeon Point Road for a distance of approximately 1.6 miles to a presently under-construction Verizon Wireless macro cell tower. The segment along Hwy 1 would be aerial cable placed on existing utility poles and some new buried conduit.

From the intersection of Hwy 1 and Pigeon Point Road, the alignment would continue to the west along Pigeon Point Road, past the Pigeon Point Lighthouse and north to the Hwy 1 ROW. It would then continue to the north along the Hwy 1 ROW for a distance of approximately 2.1 miles to Bean Hollow Road. The alignment would depart Hwy 1 and continue on existing utility poles north along Bean Hollow Road for a distance of approximately 1.3 miles to an existing Verizon Wireless cellular tower on the Bay Flower Company property east of the road.

Land uses surrounding the project alignment are rural and sparse including agricultural (i.e., farms, ranches, and nurseries); recreation (i.e., Año Nuevo State Park, camping/glamping[1], public parking for costal access); small commercial uses and rural residences.

2.4 PROJECT COMPONENTS

The proposed project would consist of

- Installing a total of 10 antennae, pole extenders, and associated equipment, 2 on each of 5 node poles (all existing utility poles).
- Installing 14.2 miles of fiber-optic cable (12.7 miles across approximately 308 existing utility poles and 1.4 miles underground).
- Installing guy wires and anchors on up to 100 existing utility poles, pending further engineering analysis and structural testing.

Comment [A1]: Should this be 12.8?

[1] Glamorous Camping

- Potentially replacing up to 12 existing utility poles to accommodate the new stress loads, pending further engineering analysis.

2.4.1 Antennae and Associated Equipment on Node Poles

The following components would be attached to each of the five node poles.

- Antenna(e), two KS 84010525 panel antennae (23 inches tall, 10 inches wide, and 5.5 inches deep) would be mounted at the top of each node pole.
- Battery back-up unit, measuring 36.88 inches tall, 30.25 inches wide, and 16 inches deep would be mounted on each node pole at a height of approximately 8 feet above the ground.
- RF disconnect switch, measuring 10 inches tall, 8 inches wide, and 5 inches deep would be mounted on each node pole at a height of approximately 8 feet above the ground.
- Electric meter, measuring 26 inches tall, 12 inches wide, and 6 inches deep would be mounted on each node pole at a height of approximately 8 feet above the ground.
- Pole extenders measuring 7 feet in height would be attached to the top of node poles to extend the antenna an adequate distance above the power lines. The antennae would be attached to the top of the extenders.

These items would be mounted on existing utility poles height of which would be increased by a total of 9 feet by the addition of the pole-top extenders and antennae.

2.4.2 Fiber-Optic Cable

Approximately 14.3 miles of new fiber-optic cable would be installed generally along Hwy 1. Approximately 12.8 miles would be placed aerially on existing utility poles and approximately 1.4 miles of new conduit and cables would be installed underground.

2.4.3 Guy Wires and Anchors on Poles

Approximately 67 guy wires and anchors would be installed when adding lines or other facilities that increase loads on poles. A guy wire is a tensioned cable designed to add stability to a free-standing structure such as a pole. One end of the guy wire is attached to the structure, and the other is anchored to the ground at a distance from the structure's base. Anchor rod lengths vary from 7 to 10 feet, and their diameters vary from 0.5 to 1.25 inches.

2.4.4 Replacement of Existing Poles

Approximately 12 existing poles may need to be replaced due to the condition of the poles and the increased stress caused by adding more fiber-optic cable. If pole replacement is needed, the replacement poles would be of the same type and installed into the exact location as the existing poles. Exactly which poles, if any, to be replaced is unknown at this time as the load testing is not complete.

2.5 RIGHT-OF-WAY REQUIREMENTS

The project would utilize existing road or utility ROWs which are of sufficient width to accommodate the proposed project therefore no new ROW would be acquired for the proposed project.

2.6 PRE-CONSTRUCTION ENVIRONMENTAL TRAINING

Pre-construction environmental training would be conducted for all construction employees prior to the start of ground-disturbing activities. The purpose of this training would be to inform the construction supervisor, workers, and inspectors of any potential sensitive resources that may occur along the proposed project alignment, to explain these resources' importance and sensitivity to disturbance, to review regulatory protections accorded to these resources, and to describe the construction protocols and mitigation measures adopted for the proposed project. Training would identify individual responsibilities and communication procedures regarding these resources. Preconstruction training also would address construction practices, traffic controls, and health and safety practices.

2.7 CONSTRUCTION ACTIVITIES

Construction of the proposed project would include overhead installation of antennae, associated equipment and fiber-optic cable on existing poles, installation of guy wires and anchors on existing poles, underground installation of fiber-optic conduit and cables, and replacement of existing poles. Temporary work areas would include pole sites for overhead fiber-optic installation and replacement of approximately 12 poles; and entry and exit pits associated with underground fiber-optic installation within existing roadways.

Aerial Installation

The basic method of installation for aerial facilities would be to install suspension clamps at each pole. Cables would then be supported (lashed) to high-strength galvanized suspension strands held in place by the suspension clamps. The strand is high-tensile steel, and would be placed under tension to control sag. Tension would be maintained at the ends of the strand, and at all corners, by "downguys" anchored into the ground.

Standard aerial construction techniques and typical two-axle rubber-tire vehicles would be used to attach antennae and associated equipment to utility poles. Basic equipment required for aerial installations includes bucket trucks and cable reel trucks or cable trailers. At least one crew and one bucket truck would travel the pole line alignment. The cable reel truck would carry spooled fiber that would be unwound for installation on the existing poles. The two-axle truck equipment is highly maneuverable and would use existing improved areas for turning around or parking in areas such as existing roads, field access aprons, driveway aprons, or farm roads. The anchors are augured or driven directly into the ground using hand equipment and the guy wire is attached and tensioned. An area of approximately 10 feet by 10 feet would be disturbed to install the anchors for the guy wires.

For node poles, pole extenders measuring 7 feet in height would be attached to the top of node poles to extend the antenna an adequate distance above the power lines. The antennae would be attached to the top of the extenders

Grounding would occur at the first, last and every fifth pole by driving a copper rod into the ground.

Vegetation Trimming and Trampling

In some locations it would be necessary to trim vegetation to install the fiber-optic cable on the existing utility poles. Although PG&E, the power company that owns the poles, is required under General Order 95 to keeps the encroaching vegetation trimmed as part of routine maintenance, additional trimming could be necessary in some locations.

Vegetation trimming could be necessary to accommodate the new cable to be attached at a location lower on the pole than the existing lines. It would not be necessary to remove trees but branches and limbs may need to be trimmed in some locations. The use of utility bucket trucks would allow the workers to access the pole attachment locations without the need for vehicle access to the base of the pole, reducing the need for vegetation trimming. The specific locations of any vegetation trimming would not be known until the contractor is on site to conduct the work; it can be assumed that trimming would be minimal based on the proposed construction methods.

In some locations, the rubber-tired vehicles would be expected to trample existing brushy vegetation. The bucket trucks may need to drive on the vegetation or place their outriggers on vegetation to gain access to the poles.

Underground Installation

Horizontal Directional Bore

Horizontal directional boring allows new conduits to be installed to the desired depth without surface disturbance along the alignment. It is expected that all of the new buried conduit would be installed using horizontal directional drilling methods. Bore entry and exit pits measuring approximately 2 feet by 6 feet and 3 to 5 feet deep would be excavated by a backhoe. Horizontal directional bores machine would drill a horizontal pilot hole along the designed cable alignment and at a depth of 3 to 5 feet below the ground surface. Once the pilot bore string reaches its receiving pit, the conduit would be attached to the end. The pilot pipe would then be pulled back to the bore machine thereby installing the conduit. The conduits would be spliced together or an access vault (see below) would be installed. The typical bore lengths would be approximately 200 to 400 feet in length.

Small areas of disturbance measuring approximately 20 by 40 feet would be needed at approximately 200 to 400 foot intervals to accommodate the bore machines, allow for the conduits to be connected and for the installation of access vaults. The excavation would be 2 feet by 6 feet, as described above, but some surface disturbance beyond that would be expected from the vehicle maneuvering and workers.

The bore machine would use a mixture of water and a fine clay (usually bentonite) to help lubricate the pilot pipe and keep the hole drilled open. The water and clay would be mixed on site in a mixer attached to or as part of the bore machine. Earth cuttings from the bore hole and the water/clay mixture returns to the bore entry pit where it would be pumped into a receiving tank. The mixture would be filtered for reuse if possible or stored in a tank until it could be discarded in a local landfill approved to receive the material.

Installation of Cable into Conduit

Once the conduit system is installed, the fiber-optic cable would be pulled or blown into the conduits. The installation would be accomplished using a series of hydraulic pullers consisting

of a main-line puller and sufficient intermediate assist pullers to ensure smooth pulling within specified tension restrictions. First, the pull line would be attached to a plug that is pushed through the conduit by air pressure. When the plug emerges at the end of the conduit section or access point, the pull line would be attached to the cable through a swivel to prevent the cable from twisting during the pulling operation. Then the pull line would be pulled back though the conduit section, threading the cable through the conduit. The main-line puller would be equipped with a tension limiter and a tension monitor to provide an accurate record of actual pulling tensions encountered. These methods would be used to pull the cable from one handhole to the next. It is sometimes necessary to excavate temporary assist points to facilitate cable installation. In such cases, an excavation approximately 2 feet wide, 3 feet long, and 3 feet deep would be dug to provide access to the conduit; this excavation would be backfilled once the cable is installed.

Surface Restoration

Site cleanup and surface restoration would be performed promptly following conduit and cable installation. Cleanup would include removing debris and restoring original surfacing and contours. Any disturbed areas would be returned to their original or better condition.

Installation of Access Vaults

To allow for cable-placing assist locations, cable splice locations, and future access to the buried conduits and fiber, buried access vaults (i.e., handholes) would be placed along the alignment. Once installation is complete, the handholes would be accessed only rarely for maintenance or cable replacement. Each handhole would typically house 80–100 feet of cable slack.

Each handhole would be equipped with a traffic-rated lid, even if it would be out of the path of traffic. The lid may be visible at the surface or may be buried just below the surface. Handholes are sized to accommodate pulling fiber through conduits and would be 2 feet by 3 feet. Generally, road shoulders or other easily accessible areas are the preferred locations for handholes. A handhole would be necessary at the beginning and end points and approximately 4 to 6 intermediate handholes would be placed within the alignment at intervals of approximately 300 to 500 feet. These handholes would be installed as the final step in the horizontal directional drill process and installed into the same excavations that would be created as drill entry and exit points. No additional ground disturbance would be required for the handholes.

Comment [A2]: If surface need to disclose permanent effect, if underground then its temporary. See table below.

Splicing of Cable Ends at Access Points

Splicing of sections of fiber-optic cable at access points would be conducted consistent with Crown Castle specifications regarding equipment, personnel training, procedures, and testing. Appropriate lengths of excess (slack loop) fiber-optic cable—generally at least 30 feet—would be left at all splice locations to allow for cable expansion and contraction due to temperature and for any splicing required in the future. The cable would be spliced in splice cases (i.e., protective encasements) in a cable, with sufficient slack allowed. The splices would be made with a profile alignment fusion splicing machine and protected by heat-shrink tubing.

Comment [A3]: What does this mean?

Pole Replacement

It is estimated that as many as 12 existing poles may need to be replaced due to the condition of the poles and the increased stress caused by adding more fiber-optic cable. Exactly which poles, if any, to be replaced is unknown at this time as the load testing is not complete. The

estimate of 12 poles to be replaced is based on past experience with similar projects. If pole replacement is needed, the replacement poles would be of the same type and installed into the exact same location as the existing poles. The process entails temporarily removing the existing utilities from the pole, removing the existing pole, installing the replacement pole, and reattaching the utilities. The process would typically be completed within 1 work day. Existing telecommunication cables would remain active; existing power conductors would need to be temporarily de-energized. The Applicant would work closely with the power utility, Pacific Gas & Electric Company (PG&E) to coordinate the temporary de-energization of the line. Each pole replacement would take 1 day to complete so it is expected that a total of up to 12 work days (96 hours) of service interruption would take place.

A site of approximately 30-feet by 100-feet would be temporarily disturbed to remove the old pole and replace it with the new pole.

Traffic Controls

Because most of the construction of the project would occur within public road ROWs, traffic would need to be controlled and coordinated. Traffic control measures would conform to Caltrans specifications as presented in their Traffic Manual, Chapter 5, Traffic Controls for Construction and Maintenance Work Zones, available for viewing at the website: http://www.dot.ca.gov/hq/traffops/signtech/signdel/pdf/TMChapter5.pdf.

On Hwy 1, it would not be necessary to close any traffic lanes. However, road shoulders would be closed in some locations. For the underground section of the proposed project, construction activities would take place under or just off the existing road shoulder. These work area would need to be cordoned off in accordance with Caltrans specifications. For the smaller county roads, such as Pigeon Point Road and Bean Hollow Road, it may be necessary to temporarily block one lane of traffic with at least one lane remaining open at all times. When it is necessary to block a lane of traffic, flaggers would be used to direct traffic in the construction zone. Delays to motorists would be anticipated to typically average 1 to 2 minutes.

Dust and Erosion Control

Construction traffic could result in increased dust. Water trucks would be used to keep the dust to a minimum. Additional measures, such as covering stockpiles, would be implemented as appropriate.

Erosion controls would be used where necessary along the project route. The most likely situations for use of these controls would be when construction activities occur near storm drains, streams, steep slopes, and other sensitive habitat areas. Control measures that may be used include silt fencing, certified weed-free straw wattles and straw bales, and other control measures as necessary to ensure that sedimentation does not affect water quality.

Comment [A4]: Would rather have these as APMs

Access

Construction access would occur primarily within existing road or utility ROWs. No new access roads would be required for construction of the proposed project.

Temporary Construction Work Areas

Staging areas are not expected to be necessary for the proposed project. Contractors would be expected to utilize their existing yards for their equipment and transport the materials needed for the project to the site daily. Should staging areas be necessary on a limited basis, existing paved or improved sites would be used. One potential staging area, a commercial parcel

located on the east side of Hwy 1 just south of Gazos Creek Road, has been identified. Part of the site is occupied by a restaurant and the remainder of the site, including a former fuel station, is currently idle. The area is concrete and asphalt surface. Any staging activities at this location would be confined to the existing paved areas.

Minor ground disturbing construction activities would be spread throughout the length of the proposed project alignment. Table 2-2 provides the estimated ground disturbance that would result from construction activities. These area calculations are related to actual ground disturbance. Most vehicle maneuvering would be within the disturbance areas described previously. Additional disturbance outside these areas is not addressed because almost all of the construction equipment would be rubber-tired vehicles, and the cable would be placed along or in close proximity to existing public and field roads so disturbances from these vehicles to maneuver or turn around would be unlikely to create ground disturbance outside of the areas previously described.

Table 2-2. Construction Activity – Estimated Area of Ground Disturbance for the Proposed Project

	Disturbance Area per Site						
Activity/Equipment Type	Length (feet)	Width (feet)	Square Feet	Acres	Number of Sites	Total Temporary Disturbance (ac)	Total Distu
Overhead Activities							
Aerial cable installation crew	4	4	16	0.0004	308	0.113	0
Guy wire installation crew	10	10	100	0.002	70	0.161	
Pole replacement crew	100	30	3,000	0.069	10	0.689	0
Underground Activities							
Directional bore crew	40	20	800	0.018	27	0.496	0
Underground cable installation crew	NA	NA	NA	NA	NA	NA	
Buried vault and marker crew	NA	NA	NA	NA	NA	NA	
Total						**1.458**	

Comment [A5]: Clarify the assumptions underlying the construction activity and disturbance estimates in Table 2-2

a.Aerial installation crew - Is this correct? No disturbance associated with aerial cable installation crew is discussed in the text.
b.Guy wire crew – Text says 67, 70 and 100 guy lines. Please clarify. What about permanent effects of guy wire installation?
c.*Pole replacement crew* – Text indicates variously 7, 10 and 12 poles will be replaced. Please clarify
d.Underground cable installation crew - Does this include the digging of temporary 2'x3' hand holes for tensioning etc.?
e.*Buried vault and marker crew* – Update to include temporary or permanent effects of the installation of 2'x3' maintenance vaults.

Construction Equipment and Personnel

Table 2-3 lists the typical construction equipment that would be needed for the various construction activities and the estimated maximum hours of operation. These estimates are based on the following quantities and assumed average production rates.

- Horizontal directional boring: approximately 7,300 linear feet, with one crew averaging 400 feet per day for 18 days.
- Buried vault: approximately six vaults to place, with one crew averaging two vaults per day for 3 days.
- Pole Replacement: up to 12 poles may need to be replaced on the project. One crew can replace one pole per day.
- Cable placement:
  - Aerial: approximately 12.8 miles (67,584 linear feet) to place, with one crew averaging 1,600 feet per day for 42 days.
  - Buried (into conduit): approximately 1.4 miles (7,300 linear feet) to place, with one crew averaging 2,000 feet per day for 4 days.

Table 2-3. Equipment Requirements and Crew Size for the Proposed Project

Comment [A6]: No discussion of water trucks for dust control.

What about restoration activities?

Activity/Equipment Type	Equipment Requirements: Use	Default Horsepower	Hours per Day of Operation (Average)	Total Days	Crew Size
Aerial cable installation crew					**4**
Bucket truck	Access poles, string fiber	200	8	42	
1-ton supply truck	Haul materials	200	6	42	
Pole replacement crew					**5**
Crane	Lift, position poles	500	4	7	
Backhoe	Excavate pole location	105	3	7	
1-ton supply truck	Haul materials	200	6	7	
Pickup truck	Transport construction personnel	150	3	7	
Directional bore crew					**4**
Bore machine	Excavate tunnel	115	8	18	
Backhoe	Excavate entry and exit pits	105	3	18	
Generator	Operate power tools	50	6	18	
1-ton supply truck	Haul materials	200	6	18	
Underground conduit/cable installation crew					**5**
Cable truck	Hold spools of cable	200	8	4	
Compressor	Operate air tools	50	8	4	
Generator	Operate power tools	50	8	4	
Backhoe	Excavate trenches	105	2	4	
1-ton supply truck	Haul materials	200	6	4	
Buried vault and marker crew					**5**
Backhoe	Excavate trenches	105	8	3	
1-ton supply truck	Haul materials	200	6	3	

Comment [A7]: Vegetation trimming?

Comment [A8]: Does this cover the need for a cable reel trucks or cable trailers

Comment [A9]: main-line puller

Comment [A10]: alignment fusion splicing machine?

It is anticipated that up to X workers will be employed during different construction phases of the project, consisting of multiple 4- to 5-person crews.

Comment [A11]: Need this information/total and max workers needed for the project.

Construction Schedule

Construction of the proposed project would commence after securing all required approvals and permits. The construction of all project components would be expected to last approximately 2 months and would require using some crews working simultaneously on different project components. Construction would generally occur between 7:00 a.m. and 6:00 p.m. on weekdays and would comply with any work timeframe restrictions that Caltrans, or San Mateo County may propose.

Construction could take place during any season of the year but work would not be conducted during substantial rain events.

Comment [A12]: Would be nice to add, Construction is anticipated to start in QX of 2014…..

Table 2-4 provides the proposed schedule for construction of the proposed project.

Table 2-4. Estimated Duration of Construction Tasks for the Proposed Project

TASK	DURATION (work days)	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Project Initiation Training	1								
Aerial Cable Installation	42								
Utility Pole Replacement	12								
Underground Conduit Installation (HDD)	18								
Underground Vault and Marker Installation	3								
Underground Cable Installation	4								

HDD = horizontal directional drilling

2.7 OPERATION AND MAINTENANCE

Following construction of the proposed project, operations and maintenance activities would be minimal. These activities would consist of periodic (typically annually) inspection of the project route facilities as is currently done by the Applicant. Repairs could include such activities as reattaching a loose or detached cable from a pole or repairing or replacing electronic equipment at a node pole. If operations, maintenance, or repair activities are necessary for the aerial cable, they would include the use of standard two-axle rubber-tired bucket trucks with outriggers. For most situations an individual maintenance person would be able to complete the repairs. In some cases a crew of 2 to 3 people and up to two vehicles would be needed.

It is highly unlikely that the buried conduit would require repair. However if it does, it would require a backhoe crew to expose a handhole or a collapsed section of conduit so the repair could take place. A crew consisting of 3 to 4 workers, a backhoe, and a utility truck could be expected to complete the repair.

These activities are limited in scope and have little potential to affect sensitive resources; Crown Castle would contact the appropriate resource agencies to ensure environmental compliance. For these reasons, operations, maintenance, and repair activities are not discussed or analyzed further in this document. Should repair activities necessitate traffic control, measures described in Section 3.9.2.1, *Traffic Control*, would be implemented. Flaggers would be used to direct traffic in the construction zone. Delays to motorists would typically average 1 to 2 minutes.

Comment [A13]: Consider deleting as O&M is a continuation of existing conditions. Don't think one needs to analyze beyond what is reasonable expected.

Proposed project operations and maintenance activities would resemble those currently administered by the Applicant for the existing facilities and activities would not increase in duration, intensity, or frequency following proposed project construction.

2.8 APPLICANT PROPOSED MEASURES

Appendix E Construction Protocol Measures of the PEA details the project protocols that will be followed during all project-related activities (Crown Castle NG West, Inc. 2013). Project protocols are specific to environmental issue areas, such as air quality, biological resources, cultural resources, or traffic impacts. These protocols are herein termed Applicant Proposed Measures (APMs). Table 2-5 lists which APMs are applicable to each environmental issue area, and Table 2-6 lists the APMs proposed as project design features in the PEA. Accordingly, these APMs are analyzed as part of the proposed project.

Table 2-5: Applicant Proposed Measures for Each Issue Area

Issue Area	APMs
Project-wide/general	
Aesthetics	
Biological resources	
Cultural resources	
Geology and soils	
Hazardous materials	
Hydrology and water quality	
Noise	
Traffic	
Recreation	

Comment [A14]: Example Table; TBD when APMs are final

Table 2-6: Applicant Proposed Measures

APM Number	Description
	Aesthetics
APM-AES-1	Keep construction and staging areas orderly, free of trash and debris, and restore areas disturbed by project construction along the proposed route to their pre-project condition.
APM-AES-2	• Maintain orderly staging and construction areas; • Identify and comply with local regulations and requirements concerning architectural design and landscaping; • Design project facilities to be unobtrusive and to not conflict with the character of the surrounding setting; restore conduit installation sites to pre-construction conditions; and • Prior to construction, consult with the local agencies associated with each project area regarding the appropriate architectural design and landscaping practices that would be implemented before, during, and after construction.
APM-AES-3	• As part of its standard construction operating procedure, ensure that construction lights will be directed away from the visual field of motorists and pedestrians along any streets or right-of-ways. • No nighttime construction (between the hours of 8:00 p.m. and 7:00 a.m.) will occur within 500 yards of any residence or non-residential sensitive use, unless otherwise approved by the applicable jurisdiction.
	Air Quality
APM-AIR-1	Implement construction "best management practices" to reduce dust and air emissions, including the following:

Comment [A15]: Redundant with AES-1, suggest removing.

Comment [A16]: Suggest removing landscaping, unless something other than returning sites to preconstruction conditions will occur.

Comment [A17]: See above

Table 2-6: Applicant Proposed Measures

APM Number	Description
	• water all active construction areas at least twice daily; • cover all trucks hauling soil, sand, and other loose materials; • pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites; • sweep daily all paved access roads, parking areas and staging areas at construction sites; • sweep streets daily if visible soil material is carried onto adjacent public streets.
APM-AIR-2	Comply with the following project construction constraints: • Use California on-road diesel fuel for all diesel-powered construction equipment; • Use construction equipment that is properly tuned and maintained in accordance with manufacturer's specifications; • Use best management construction practices to avoid unnecessary emissions (e.g., trucks and vehicles in loading and unloading queues will be kept with their engines off, when not in use); and • Suspend emissions-generating construction activities during "Stage 2" smog alerts. Stage 2 air pollution episodes occur under the California Air Pollution Emergency Episode.

Table 2-6: Applicant Proposed Measures

APM Number	Description
	Biological Resources
APM-BIO-1	**Environmental Awareness** • Conduct a Worker Environmental Awareness Program (WEAP) for construction crews to educate workers to be aware of sensitive biological resources which will include a brief review of any relevant sensitive biological resources; • Retain qualified biologists and resource specialists to monitor construction activities where sensitive resources have been identified. • Confine construction equipment and associated activities to the approved right-of-way at all locations. • Construction impacts will be limited to a 20-foot right-of-way in areas that support sensitive resources (e.g., near areas that support riparian and wetland communities and special-status species adjacent to the work area), as delineated by qualified biologists or resource specialists prior to construction. • In sensitive areas that are being avoided by directional boring and drilling, drill rigs and equipment staging will remain outside of sensitive habitats, with an adequate buffer to avoid potential adverse effects to the resource. • Work area boundaries will be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying and minimize the potential for inadvertent worker intrusion into sensitive areas. • After specific project routes have been identified, a qualified biologists will carry out focused pre-construction biological resource surveys consistent with approved survey protocols to identify the location of sensitive biological resources • Sensitive resources will be clearly mapped and marked on construction drawings or project maps before construction in these areas • If sensitive resources cannot be avoided, no work will be authorized until the appropriate resources agencies (CDFW, USFWS, NMFS) determine that the action will not result in significant impacts to biological resources.
APM-BIO-2	**Waters of the U.S. and Other Waters** • Minimize the disturbance of Other Waters of the United States and restore the resource to pre-project conditions, per Corps, CDFW, and RWQCB requirements. • Any waters of the United States disturbed will be limited to the minimum area necessary to successfully install the fiber optic conduit and cable. • Surface grade will be restored and topsoil will be replaced. • Exposed slopes and stream banks will be stabilized immediately on completion of installation activities. • Beds and banks will be restored in a manner that encourages vegetation to reestablish itself to its pre-project condition, hence reducing the effects of erosion on the drainage system. • Trees, shrubs, debris, or soils that are inadvertently deposited during construction below the ordinary high-water mark will be removed in a manner that minimizes disturbance of the drainage bed and bank. • Installation activities in saturated or ponded wetlands will be avoided during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, will be used, consistent with resource agency requirements; • Where determined necessary by the resource specialists, geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) will be used in saturated conditions to minimize damage to the substrate and vegetation; • In wetlands or unvegetated waters of the U.S. that are trenched, the top 12 inches of topsoil from the excavated site with intact roots, rhizomes, and seed bank will be stockpiled. The topsoil and subsoil will be replaced immediately after construction activities are complete. • Ground surface will be regularly reviewed to maintain pre-project wetland hydrology.
APM-BIO-3	**Special Status Plants** • Prior to construction, a qualified biologist will survey project areas and establish exclusion zones around special-status plant populations or areas identified as suitable habitat for special-status plants that were not identifiable at the time of the field surveys.

Table 2-6: Applicant Proposed Measures	
APM Number	**Description**
	• Exclusion zones will have a minimum 20-foot radius and will be marked in the field with stakes and flagging, and correspondingly be marked on the construction drawings. Construction-related activities will be prohibited within these zones. • Construction activities, vehicle operation, material and equipment storage, and other surface-disturbing construction activities will be prohibited within the exclusion zones. Fiber optic cable installation near these resources will be accomplished by rerouting around the exclusion zone. If rerouting is not feasible, the fiber optic conduit will be bored beneath the exclusion zone. • All stakes and flagging demarcating exclusion zones will be removed within 60 days after construction and site restoration have been completed in the area. Additionally, impacts on CNPS Lists 2 and 4 special-status plant populations will be avoided by implementing the following specific measures: • Identify plant populations and areas identified as suitable habitat in the construction corridor and staging areas using staking and flagging; • Conduct construction activities when the plant is not flowering or fruiting; • Minimize disturbance in areas that support special-status plants by limiting ground disturbance and other activities to the smallest possible corridor; • Identify CNPS List 2 plant populations that may be affected at least 2 weeks prior to disturbance, to allow for coordination with the appropriate land management and resource agencies for determination of the appropriate measures to take to avoid/reduce vegetation damage.

Table 2-6: Applicant Proposed Measures

APM Number	Description
APM-BIO-4	**Invasive and Noxious Weeds** • Use certified weed-free imported materials (or rice straw in upland areas); • Continue to coordinate with land management agencies to ensure that the appropriate best management practices are implemented. • Contact County agricultural commissions and land management agencies to develop lists of target noxious weed species for each project and discuss measures to avoid the dispersal of noxious weeds; • Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of noxious weed infestations during implementation of APM-Bio-1, above.
APM-BIO-5	**Streams/Riparian Habitat** • Avoid directional drilling during the migration period of special status anadromous species in streams that potentially support special-status fish species; • No instream construction activities will be allowed during migrational periods within streams that support special status anadromous species, unless otherwise authorized by CDFG and/or NMFS; • Retain a qualified fisheries biologist to identify streams and assess habitat for threatened, endangered, and other special-status fish species; • Spawning and rearing areas will be identified and construction will be avoided during critical periods; • Prepare and implement a storm water pollution prevention plan outlining BMPs for construction activities; • Avoid in-water construction in all flowing streams that have the potential to support threatened, endangered, and other special-status fish species; • Confine construction equipment and associated activities to the project routes in areas that support sensitive resources; • Retain qualified biologists or resource specialists to monitor construction activities near specified sensitive biological areas; • Conduct a biological-resource education program for construction crews and enforce construction restrictions before construction; • Avoid and minimize disturbance of woody riparian vegetation along drainages; • Conduct post-construction monitoring in woody riparian and wetland communities that are substantially disturbed during construction activities.
	Cultural Resources
APM-CUL-1	• If buried cultural resources, such as chipped or ground stone, historic debris, building foundation, or human bone, are inadvertently discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate measures in consultation with the CPUC, State Historic Preservation Officer, and other appropriate agencies. • If human remains are discovered or recognized in any location other than a dedicated cemetery, further excavation or disturbance of the site and any nearby areas reasonably suspected to overlie adjacent human remains will be suspended until the coroner of the county has been informed and has determined that no investigation of the cause of death is required. • If human remains of Native American origin are discovered on federal land during ground-disturbing activities, pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA), NextG will: -Notify the county coroner or the sheriff; -Notify, in writing, the responsible federal agency; and -Cease activity in the area of discovery and protect the human remains. • In the event that fossil remains are encountered, either by the cultural resources monitor or by construction personnel, qualified paleontological specialists will be contacted. Construction within 100 feet of the find in non-urban areas and 50 feet in urban areas will be temporarily halted or diverted until a qualified vertebrate paleontologist examines the

Comment [A18]: Compliance with the law is assumed (i.e., Construction General Permit); suggest removing.

Comment [A19]: Suggest removing, essentially discussed in APM-Bio 1

Comment [A20]: Remove, duplicative

Comment [A21]: Suggest removing, essentially discussed in APM-Bio 1

Table 2-6: Applicant Proposed Measures

APM Number	Description
	discovery.
	Geology and Soils
APM-GEO-1	• Manage construction-induced sediment and excavated spoils in accordance with the requirements of the State Water Resources Control Board (SWRCB) National Pollution Discharge Elimination System (NPDES) permit for storm water runoff associated with construction activities. • Prior to the onset of construction, complete a Storm water Prevention Pollution Plan (SWPPP) that outlines Best Management Practices (BMPs) to control discharges from construction areas. • Sediment generated on the project site will be retained using structural drainage controls. • No construction-related materials, wastes, spills or residues will be discharged from the project. • The staging of construction materials, equipment, and excavation spoils will be performed outside of drainages. • Excavated or disturbed soil will be kept within a controlled area surrounded by a perimeter barrier that may entail silt fence, hay bales, straw wattles, or a similarly effective erosion control technique that prevents the transport of sediment from a given stockpile. • All stockpiled material will be covered or contained in such a way that eliminates offsite runoff from occurring. • Upon completion of construction activities, excavated soil will be replaced and graded so that post-construction topography and drainage matches pre-construction conditions. • Surplus soil will be transported from the site and disposed of appropriately.
	Hazards and Hazardous Materials/Fire Safety
APM-HAZ-1	• Ensure proper labeling, storage, handling, and use of hazardous materials in accordance with best management practices and the Occupational Safety and Health Administration's HAZWOPER requirements. • Ensure that employees are properly trained in the use and handling of hazardous materials and that each material is accompanied by a material safety data sheet. • Any small quantities of hazardous materials stored temporarily in staging areas will be stored on pallets within fenced and secured areas and protected from exposure to weather. Incompatible materials will be stored separately, as appropriate. • All hazardous waste materials removed during construction will be handled and disposed of by a licensed waste disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted disposal or recycling facility, to the extent necessary to ensure the area can be safely traversed. • Significant releases or threatened releases of hazardous materials will be reported to the appropriate agencies.
	Hydrology and Water Quality
APM-HYD-1	Prior to non-storm discharges into surface waters, provide documentation of obtaining all necessary and applicable approvals, including the following: • Implementation of appropriate Best Management Practice (BMP's) to minimize the potential for storm-water pollutants. These BMPs may include, but not necessarily be limited to, the utilization of settling ponds or screens to reduce suspended sediment loads
APM-HYD-2	• If the build requires directional boring activities near streams, provide the CPUC with a Frac-out Contingency Plan. The Plan will outline procedures that would be put in place for containment, as well as cleanup equipment that must be present for use at staging areas and construction sites.
	Land Use
APM-LU-1	Submit written documentation, including evidence of review by the appropriate public works, planning, and/or community development agency for the applicable jurisdictions. This documentation will include the following: • Site plan showing the dimensions and location of the finalized alignment; • Evidence that the project meets all necessary requirements;

Comment [A22]: Compliance with the law is assumed (i.e., Construction General Permit); suggest removing.

Comment [A23]: PEA says no staging areas. Directional boring is not near or crossing a stream suggest removing.

Table 2-6: Applicant Proposed Measures

APM Number	Description
	• Evidence of compliance with design standards; • Copies of any necessary permits or conditions of approval; and • Records of any discretionary decisions made by of the applicable jurisdictions.
	Noise
APM-NOI-1	• Require construction contractors to comply with the construction-hour limitations and construction equipment standards set forth by each local jurisdiction. • For construction in those jurisdictions where there are no specific construction related standards, require contractors to limit any noise producing construction activity to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday. • All equipment will have sound-control devices no less effective than those provided on original equipment; • No equipment will have an unmuffled exhaust; • Construction equipment will be located as far from sensitive receptors (e.g., residences, schools, places of worship, and hospitals) as possible; and • If traffic control devices requiring electrical power are employed within 500 feet of sensitive receptors, the devices will be battery/solar powered instead of powered by electrical generators. In addition, implement a variety of measures to reduce noise levels from directional boring where noise levels of 60 dBA or greater would be experienced at sensitive receptor locations. For example: • Special mufflers can be applied to the boring rig exhaust; • Shielding can be erected between the noise source and the receptor; or • As an extreme measure, a temporary enclosure can be erected to house the boring operation. Implement all reasonable and customary noise reduction measures and post the name and telephone number of a person for the public to contact to resolve noise-related problems.
	Recreation
APM-REC-1	• Schedule construction to avoid peak use periods (e.g., weekends and holidays) for recreational facilities. • Provide onsite notification of recreational access closures at least 2 weeks in advance, through the posting of signs and/or notices. • All ground surfaces will be restored as close to pre-project conditions as soon as possible or practicable. • Temporary disruption of existing recreational facilities for the duration of project construction.
	Traffic
APM-TRA-1	• Obtain all necessary local and State road encroachment permits, and railroad encroachment permits, prior to construction and will comply with all the applicable conditions of approval. • As deemed necessary by the applicable jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. • Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow. • Develop circulation and detour plans to minimize impacts to local street circulation. This will include the use of signing and flagging to guide vehicles through and/or around the construction zone. • Schedule truck trips outside of peak morning and evening commute hours. • Limit lane closures during peak hours to the extent possible. • Use haul routes minimizing truck traffic on local roadways to the extent possible. • Include detours for bicycles and pedestrians in all areas potentially affected by project construction. • Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.

Comment [A24]: This doesn't make sense.

Comment [A25]: Compliance with the law is assumed, suggest removing.

Table 2-6: Applicant Proposed Measures

APM Number	Description
	• Store construction materials only in designated areas. • Coordinate with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.
APM-TRA-2	To avoid impeding emergency vehicle traffic around the construction activities, develop an Emergency Vehicle Access Plan that includes the following: • Evidence of advanced coordination with emergency service providers, including but not necessarily limited to police departments, fire departments, ambulance services, and paramedic services; • Emergency service providers will be notified of the proposed project locations, nature, timing, and duration of any construction activities, and will be asked for advice about any road access restrictions that could impact their response effectiveness; and • Project construction schedules and routes designed to avoid restricting movement of emergency vehicles to the best extent possible. Provisions to be ready at all times to accommodate emergency vehicles at locations where access to nearby properties may be blocked. Provisions could include the use of platings over excavations, short detours, and/or alternate routes.
APM-TRA-3	• Prepare and implement a traffic safety plan and coordinate with local transportation and emergency response agencies to avoid potential roadway safety hazards.
APM-TRA-4	• Limit all parking to right-of-way and pre-approved staging areas to address the increased parking demand created by construction activities.
Utilities and Service Systems	
APM-USS-1	• Determine the location of subsurface utilities and avoid them during construction activities.
APM-USS-2	• Recycle and dispose of construction materials to minimize generation of solid waste resulting from construction activities.

Source: Crown Castle 2013.

Comment [A26]: Compliance with the law is assumed, suggest removing. CC is required by law to coordinate for this by calling DigAlert within 2 days of construction activities.

2.9 KEY PERMITS AND APPROVALS

Key permits and approvals presumed necessary for construction of the proposed project are presented below (Table 2-7).

Table 2-7. Permits and Approvals Required for Construction

Agency	Permit/Approval
California Public Utilities Commission	Authority to Construct
California Department of Transportation	Encroachment Permit
San Mateo County Planning Department	Coastal Development Permit

Figure 2-1 Regional Map

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Figure 2-2 Project Vicinity Map

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