4. Alternatives

4.1 Introduction

A required component of an EIR is the identification and evaluation of a "range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project" (State CEQA Guidelines §15126.6(a)). As such, the selection of alternatives focuses on those alternatives capable of eliminating or reducing any significant environmental effects of the proposed Project, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly (State CEQA Guidelines §15126.6(b)).

The range of alternatives analyzed within an EIR is governed by the "rule of reason". An EIR need not consider every conceivable alternative to a project (State CEQA Guidelines §15126.6(a). Rather, the EIR must evaluate only those alternatives necessary to permit a reasoned choice between the alternatives and the proposed Project (State CEQA Guidelines §15126.6(f)). An EIR also need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or speculative (State CEQA Guidelines §15126.6(f)(3)). Additionally, the "no project" alternative must be evaluated along with its impacts. The "no project" analysis discusses the existing conditions at the time the Notice of Preparation (NOP) is published, as well as what would be reasonably expected to occur in the foreseeable future if the Project were not approved, based on current plans and consistent with available infrastructure and community services (State CEQA Guidelines §15126.6(e)(2)).

Based on the alternatives analysis, an environmentally superior alternative is designated from among the alternatives. If the environmentally superior alternative is the "no project" alternative, the EIR must identify an environmentally superior alternative from among the other alternatives (State CEQA Guidelines §15126.6(e)(2)).

4.2 Criteria for Selection of Alternatives

To determine a reasonable range of feasible alternatives, the following screening criteria were applied, which are derived from the State CEQA Guidelines (§15126.6 *et seq.*):

- Does the alternative meet most of the basic Project objectives?
- Is the alternative feasible (e.g., site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; ability to reasonably acquire, control, or otherwise have access to an alternative site)?
- Does the alternative avoid or substantially lessen any significant effects of the proposed Project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the proposed Project)?

As discussed in Section 2.2, *Project Objectives*, the purpose of the Transpacific Fiber-Optic Cables Project is to install multiple high-speed telecommunication cable systems across the Pacific Ocean connecting the United States to various locations along the western rim of the Pacific Ocean. The first

cable planned is the SEA-US cable to connect to Guam, the Philippines, and Indonesia. The objectives of the Project identified by the Project applicant and the lead agency are:

- Provide the first direct telecommunications link to the Philippines and Indonesia.
- Provide for increased telecommunications reliability between the United States and Pacific Rim cities and countries by avoiding historically seismically unstable zones.
- Provided for increased diversity of telecommunications pathways between the United States and Pacific Rim cities and countries.
- Provide for increased data transmittal speeds.
- Provide for a more streamlined ability for telecommunications connectivity to the Los Angeles basin and other Pacific Rim cities and countries.
- Respond to Asia's increasing need for connectivity to the United States.

The alternatives selected for analysis must meet all or most of these objectives. The screening process for alternatives also focuses on identifying alternatives that would reduce or avoid the identified significant impacts. Significant unavoidable impacts have been identified for the proposed Project related to aesthetics, air quality, land use and recreational resources, noise, and transportation and traffic, which means that feasible mitigation is not available reduce these impacts to a less-than-significant level.

4.3 Alternatives Eliminated from Further Consideration

Per State CEQA Guidelines Section 15126.6(c), an EIR must identify any alternatives that were considered, but rejected by the Lead Agency, and to provide a brief explanation as to the reasons underlying the Lead Agency's determination. As discussed above, alternatives were assessed for their ability to reasonably achieve the primary or basic project objectives and reduce the significant environmental impacts of the proposed Project. Also, their technical, legal, and regulatory feasibility were evaluated. Based on these screening criteria, the alternatives eliminated from consideration in the EIR are briefly described below along with the rationale for their elimination.

4.3.1 Other Landing Locations in Hermosa Beach

This potential alternative involves the identification of other suitable beach and street landing sites for the marine cable in Hermosa Beach. The proposed Project includes two beach landing sites (25th Street and Neptune Avenue) and two street landing sites (25th Street and Longfellow Avenue).

Suitable beach landing sites would have the following characteristics:

- Has suitable access from adjacent public streets to allow delivery of construction equipment and materials;
- Has adequate area available to accommodate the boring operation;
- Is aligned with a street or other public right-of-way that continues inland in order to provide a path for the terrestrial cable alignments;
- Provides a suitable location for installation of a landing manhole and ocean groundbed;
- Is not constrained by existing buried utilities;

- Involves minimal disruption to existing beach recreational facilities or beach areas that receive very high recreational use.

Suitable street landing sites would have the following characteristics:

- Is near enough to the beach to avoid making the length of the marine bore impractical;
- Has adequate width and length to accommodate the boring operation;
- Is not constrained by existing buried utilities;
- Is aligned with a street or other public right-of-way that continues inland in order to provide a path for the terrestrial cable alignments;
- Provides a suitable location for installation of an ocean groundbed at the beach;
- Does not completely block access to the beach or the strand at that location;
- Does not completely block access to garage entrances, driveways, or parking lots;
- Does not block the primary access points for any residences or businesses;
- Is not located adjacent to a highly noise-sensitive land use (e.g., a school, hospital, convalescent facility, or day care center); or
- Is not located adjacent to a business with an outdoor use important to that business (e.g., an outdoor eating area for a restaurant).

Rationale for Elimination

Based on the criteria listed above, there are a limited number of potential beach locations for a cable landing site in the City and an even more limited number of potential street sites.

While there a number of locations on the beach of adequate size for a landing site, only a small number of sites are available that are aligned with a street or public right-of-way that provides a path inland (beyond Hermosa Avenue) for the terrestrial cables. Beach access for delivery of construction equipment and materials is also problematic for most potential beach sites because nearby public access either does not exist or is too narrow. Other potential beach sites are considered undesirable due to disruption of heavily used recreation areas, such as areas where beach volleyball courts or other recreational facilities are concentrated. In some cases, storm drain outlets on the beach preclude use of certain locations for landing sites.

Street landing sites are very limited for a number of reasons. Many potential street locations for a landing site would block garage or driveway access. In the southern portion of the City, the main entrances of residences face the streets or walkways leading to the beach and, therefore, a landing would block the primary access to these residences. In addition, these streets and walkways are generally too narrow to accommodate the boring operation. If the boring operation could be accommodated in these narrow streets, access to the beach and the strand in these locations would be completely blocked, and the boring operations would occur closer to residences than in areas with wider streets or setbacks. Also, many streets near the beach do not continue inland and, therefore, do not provide a path inland for the terrestrial cables. In the central portion of the City, generally between 4th Street and 19th Street, potential street sites each of Hermosa Avenue are too far inland to make the marine bore practical. In some locations, such as 22nd Street, existing business operations would be substantially disrupted by the presence of the directional bore operation.

One suitable site at 2nd Street is not available because existing marine cable landings preclude the use of that area for installation of additional marine cables.

After reviewing potential landing sites in the City of Hermosa Beach in relation to the criteria listed above, one site was identified as a possible alternative. The beach at Longfellow Avenue would be suitable for a cable landing site. Although this site is similar in many ways to the proposed 25th Street beach landing sites, it has been carried forward for analysis as an alternative in Sections 4.4 and 4.5 below.

4.3.2 Morro Bay Landing Location

In the application materials submitted to the City, the applicant identified Morro Bay on the central California coast as a potential landing area for marine cables. Morro Bay was identified because it was the nearest existing cable landing location to Los Angeles. However, no specific site in Morro Bay has been identified by the applicant. Other locations along the California coast could be considered for a cable landing location as well, but would be similarly subject to certain disadvantages described below. Similarly, landing locations in other states (i.e., Oregon and Washington) would likely be feasible, but would offer similar disadvantages.

Rationale for Elimination

One of the Project objectives is to provide "telecommunications connectivity to the Los Angeles basin and other Pacific Rim cities and countries". Landing the cable in Morro Bay or another coastal location removed from Los Angeles does not achieve this objective as well as a location in the Los Angeles area.

Another of the Project objectives is to "provide for increased data transmittal speeds". A very small amount of delay is introduced by increasing the length of the telecommunications path. The light waves traveling along the fiber-optic cable can go only so far (about 50 kilometers) before they need to be amplified. Each time the signal is amplified, it slows the signal down a very small amount. Adding distance to the cable would create the need to add additional amplifiers, which slows down the light wave transmittal. Therefore, this alternative has the disadvantage of decreasing telecommunication transmission speeds compared to locations in the Los Angeles area and, therefore, does not achieve the Project objectives as well as the proposed Project. Also, it is worth noting that the greater the length cable, the greater the opportunity for it to be damaged by human interaction (e.g., backhoe excavation) or by an environmental cause (e.g., a landslide).

If a coastal cable landing location remote from Los Angeles were to be utilized for the Project, system reliability would be reduced by the need to have the telecommunication signals relayed to Los Angeles by a third-party carrier. Transmission speeds would be reduced due to the need to connect through multiple additional switching systems. Further, each additional switch along the path introduces an opportunity for failure as a particular switch could fail causing an interruption in the transmission.

While the remote distance from Los Angeles presents several disadvantages for system performance and reliability, as described above, another coastal site in southern or central California could be feasible, although would be less successful in fulfilling Project objectives. It is likely that the applicant could design a similar project that would land at another location and submit an application for such a project to another coastal jurisdiction for consideration. While this would be feasible and would partially fulfill the Project objectives, CEQA requires that the Lead Agency also consider whether such

a proposal would offer any substantial environmental advantages over the proposed Project. If the short-term, localized impacts associated with Project construction are discounted, another coastal location would not necessarily offer clear advantages in reducing the Project's significant environmental impacts. For example, the applicant has routed the marine cables to avoid marine protected areas and known marine hazard areas. In addition, the EIR conservatively estimates that no more than twenty percent of the continental shelf traversed by the cables would be hard-bottom habitat, thereby allowing the large majority of the cables to be buried in soft sediments. Also, the cables avoid busy port areas where navigation hazards are greater. Cable routes associated with other possible coastal landing sites could have similar, or even greater impacts, on the marine environment, but the proposed Project does not have any significant impacts on marine resources that need to be remedied by consideration of an alternate coastal landing site.

4.3.3 Another Landing Location in the Los Angeles Basin

One possible alternative is a different landing location in the Los Angeles Basin. Such an alternative would better meet the Project objectives than a location in another region or state.

Rationale for Elimination

One of the Project objectives is to provide "telecommunications connectivity to the Los Angeles basin and other Pacific Rim cities and countries". If a different coastal cable landing location in Los Angeles were to be utilized for the Project, system reliability would not necessarily be reduced by the need to have the telecommunication signals relayed to Los Angeles by a third-party carrier. Transmission speeds would not be reduced due to the need to connect through multiple additional switching systems and the potential system failures would not necessarily be increased. Therefore, another landing location in the Los Angeles might accomplish the Project objectives.

It is likely that the applicant could design a similar project that would land at another location in the Los Angeles Basin and submit an application for such a project to another coastal jurisdiction for consideration. While this would be feasible and meet Project objectives, CEQA requires that the Lead Agency also consider whether such a proposal would offer any substantial environmental advantages over the proposed Project. If the short-term, localized impacts associated with Project construction are discounted, another coastal location would not necessarily offer clear advantages in reducing the Project's significant environmental impacts. For example, short-term impacts associated with installation of fiber-optic cables and ancillary facilities (air pollutant emissions, noise, trip generation, etc.) would generally be very similar at another location as they would be at the proposed location. Differences would primarily relate to different sensitivities at another location (e.g., sensitive resources, sensitive receptors, hazards). Due the highly populated nature of the coast Los Angeles Basin, sensitive receptors are likely to exist near almost any site. Sensitive resources and hazards are relatively few in Hermosa Beach and would not be substantially reduced at another site.

4.3.4 Satellite Technologies

Satellite communications systems are currently available that can transport telecommunications and data between the western and eastern coasts of the Pacific Ocean.

Rationale for Elimination

Satellite technology would not achieve the Project objectives because of its limitations in terms of capacity, latency, and quality. Satellite transmissions rates are slower than fiber-optic cables and thus would not meet the objective for high data transmission speeds and low latency. Therefore, satellite systems are not capable of carrying enough traffic to meet the anticipated demand for services. Additionally, the signal quality of satellite transmissions is inferior to fiber-optic cables. For these reasons, the use of satellite technology would not meet the Project objectives.

4.4 Alternatives Analysis

In selecting feasible alternatives for analysis, the EIR preparers considered alternatives to the various components of the Project as well as alternate methods of installation and operation. Note that the Project as proposed already includes several options for the Project components, including multiple choices for cable landing sites, terrestrial cable routes, and PFE facility locations. The EIR preparers have expanded upon these built-in Project options by evaluating an additional cable landing site, alternative routing, and reduced versions of the proposed Project. The alternatives selected for analysis are described below along with discussions of their respective impacts in comparison to the proposed Project.

The EIR must provide sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison to the proposed Project. If an alternative would cause significant effects in addition to those that would be caused by the proposed Project, the significant effects of the alternative must be discussed, but in less detail than the effects of the proposed Project. (State CEQA Guidelines §15126.6(d).)

Four alternatives have been selected for evaluation, including the No Project Alternative. These alternatives were selected because they are capable of achieving most project objectives, are feasible, and have the potential to result in reduced impacts compared to the proposed Project. The selected alternatives are:

- No Project Alternative
- Reduced Project Alternative
- Longfellow Avenue Beach Cable Landing Site
- Reduced Terrestrial Cable Routes
- Street Landing Sites Only

Conceptual descriptions of these alternatives are provided below along with brief descriptions of their impacts in comparison to the proposed Project, including how each alternative could reduce the significant impacts of the proposed Project.

4.4.1 No Project Alternative

Under the No Project Alternative, the proposed Project would not be implemented. Therefore, the impacts associated with the construction and operation of the Project would not occur. As a result, existing conditions in the Project area would persist, subject to changes over time associated with local and regional growth, including new development projects currently proposed and others not

yet known. See the introduction to Chapter 3 for a list of approved or proposed projects in the Project vicinity that were identified when preparation of this EIR was initiated.

If the proposed Project is not implemented, it is likely that some other project will be proposed to increase high-speed telecommunications capacity between the United States and the western Pacific. The details, including location, of such a project cannot be known at this time, but would likely entail a proposal similar to the proposed Project to install fiber-optic cables across the Pacific Ocean. Such a future project would likely involve impacts similar to those described for the proposed Project, including significant and unavoidable impacts related to aesthetics, air quality, land use and recreational resources, noise, and transportation and traffic. It is also possible that the adverse impacts of such a project could be more or less severe than those of the proposed Project, depending on the characteristics of the locations of the marine cable alignments, landing sites, and terrestrial cable alignments.

4.4.2 Reduced Project Alternative

This alternative would involve installation of three fiber-optic cables, which is one fewer cable than the four included as part of the proposed Project. Given that the installation of one or two fiber-optic cables across the Pacific Ocean would fall substantially short of meeting the Project objectives, a minimum of three fiber-optic cables was assumed necessary for a reduced alternative. Similar to the proposed Project, this alternative assumes that the marine cables would land at two proposed landing sites, either at the beach or on nearby streets, and terrestrial cables would connect the marine cables to PFE facilities in the City of Hermosa Beach. With the elimination of one fiber-optic cable from the Project, fewer PFE facilities and less terrestrial cable would likely be constructed. The proposed alignments and locations of the marine cables, landing sites, PFE facilities, and terrestrial cable constructed under this alternative would be in the same locations identified for the proposed Project components. No new landing sites or cable alignments would be proposed under the Reduced Project Alternative.

Aesthetics

Because the components of the proposed Project would generally not be visible to the public after construction, the Project would not result in any substantial change in visual conditions once installed compared to existing conditions. As discussed in Section 3.1, *Aesthetics*, aesthetic impacts would be temporary and limited to the Project's construction period. Impacts to visual resources during construction would result from the marine directional bores at the landing sites (located within an enclosure), and installation of the terrestrial cable between the landing sites and the PFE facilities. Off-shore construction activities are expected to contribute minor aesthetic impacts.

Under the Reduced Project Alternative, only a slight reduction in the terrestrial construction effort would occur due to fewer cables and PFE facilities, which would result in a corresponding reduction in the magnitude of impacts to visual resources. The installation of one fewer marine cable would not substantially lessen the overall aesthetic impacts of the Project. Overall, the components of the alternative are similar to the proposed Project (i.e., minimum of three fiber-optic cables, two landing sites, construction of PFE facilities), and the construction of these components would result in similar aesthetic impacts.

Air Quality

Under this alternative, one fewer marine cable would be installed. This would reduce emissions associated with marine cable-laying operations, which are substantial. It is also likely that emissions associated with installation of the terrestrial facilities would be reduced as fewer cables and PFE facilities would likely be installed. Two cable landing sites and landing manholes would still be required under this alternative. However, compared to the proposed Project, air pollutant emissions associated with installation of the three marine cables and terrestrial facilities would be substantially reduced under this alternative.

Biological Resources

Under the Reduced Project Alternative, impacts associated with the installation of terrestrial facilities would be similar to the proposed Project, while impacts associated with the installation of marine cables would be reduced in magnitude. This alternative would utilize the same sites and proposed cable routes for the terrestrial facilities as under the proposed Project, all of which are located within developed and disturbed areas. No new impacts to terrestrial biological resources would occur under the Reduced Project Alternative. One fewer marine cable would be installed under this alternative, which would substantially reduce impacts to benthic organisms associated with the direct lay of fiber-optic cables over hard-bottom substrate. Given the sensitive nature of benthic communities and their slow recovery following disturbance, impacts under this alternative would be less severe than the proposed Project.

Cultural Resources

Under the Reduced Project Alternative, the potential for encountering cultural or paleontological resources would be reduced in comparison to the proposed Project because one fewer marine cable would be installed on the ocean floor. This alternative would lessen the marine construction effort, which would reduce the potential for inadvertently affecting cultural or paleontological resources. Fewer terrestrial cables would also be installed under this alternative, which would reduce the overall construction effort and the likelihood of impacting buried cultural or paleontological resources. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., minimum of three fiber-optic cables, two landing sites, construction of PFE facilities), overall impacts to cultural resources under the Reduced Project Alternative would be similar to the proposed Project.

Geology and Soils

As discussed in Section 3.5, *Geology and Soils*, the proposed marine cables are not expected to impact geologic features in Santa Monica Bay and other adjacent marine areas. Under the proposed Project, there is a low potential for plowing and cable-laying activities to disturb an unstable area and trigger slope failure. The Reduced Project Alternative would further reduce the likelihood of marine slope failure as it would install one less marine cable than the proposed Project. During terrestrial construction, proposed Project activities have the potential to exacerbate erosion conditions by exposing soils during trenching and excavation of bore pits. As the alternative would likely require fewer terrestrial cables, it would reduce the proposed construction effort and lessen the degree of erosion that may occur. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., minimum of three fiber-optic cables, two landing sites,

construction of PFE facilities), overall impacts to geology and soils under the Reduced Project Alternative would be similar to the proposed Project.

Greenhouse Gas Emissions

As described for air quality, this alternative would result in a reduction in the number of marine cables installed as part of the Project and, therefore, would result in a substantial reduction in air pollutant emissions associated with installation of the marine cables. There could also be reduced emissions associated with the construction of terrestrial facilities if fewer terrestrial cables, PFE facilities, and cable landing sites are needed for this alternative.

Greenhouse gas emissions associated with Project operation and maintenance would be unchanged under this alternative.

Hazards and Hazardous Materials

Impacts related to hazards and hazardous materials for this alternative would be similar to the proposed Project, but reduced in magnitude. The potential for impacts related to the Project would include oil and hazardous spills associated with vessel collisions, improper handling of hazardous materials used in cable-laying operations, and accidental release of hazardous materials used in terrestrial construction activities. Under the Reduced Project Alternative, one less marine cable would be installed and fewer terrestrial cables would be constructed when compared to the proposed Project, which would reduce the possibility of impacts related to the accidental release of hazardous substances into the environment. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., minimum of three fiber-optic cables, two landing sites, construction of PFE facilities), overall impacts associated with hazards and hazardous materials under the Reduced Project Alternative would be similar to the proposed Project.

Hydrology and Water Quality

Under the Reduced Project Alternative, impacts related to hydrology and water quality would be similar to the proposed Project but reduced in magnitude. Construction of both the proposed Project and the alternative would involve increased turbidity during cable-laying activities, potential for petroleum discharge or other spills from vessels, and potential runoff from construction sites. Under this alternative, one less marine cable would be installed and fewer terrestrial cables would be constructed when compared to the proposed Project, which would reduce the possibility of impacts related to a spill or turbidity from offshore construction activities. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., minimum of three fiber-optic cables, two landing sites, construction of PFE facilities), overall impacts to hydrology and water quality under the Reduced Project Alternative would be similar to the proposed Project.

Land Use and Recreation

The Project's marine impacts as they pertain to land use include potential interferences with commercial and recreational fishing boats, recreational boats, or anchored vessels. The Reduced Project Alternative would lessen the construction effort required for installing the marine cable, which would reduce the magnitude of impact to marine activities.

The Project's terrestrial impacts include disruptions with surrounding land uses and recreational resources near the cable landing sites and PFE facilities, and along the terrestrial cable routes during

the construction period. As this alternative would require fewer terrestrial cables and PFE facilities, land use disruptions would be slightly reduced in comparison to the proposed Project.

Although the Reduced Project Alternative would lessen the degree of impact to specific marine and terrestrial land uses, overall impacts to land use and recreation would be similar to the proposed Project given the similarity of the remaining components of the alternative and the proposed Project (i.e., minimum of three fiber-optic cables, two landing sites, and construction of PFE facilities). In addition, construction activities for both the alternative and the proposed Project components would conflict with applicable plans, policies and regulations (e.g., the City's Land Use Element) as described in Table 3.9-2.

Noise and Vibration

Noise would be generated by Project construction activities that include the marine directional bores and installation of the terrestrial cables connecting the cable landing sites to the PFE facilities. This noise would result in a temporary adverse impact to adjacent land uses (i.e., residences and other sensitive receptors). Because the Reduced Project Alternative involves the construction of one fewer marine cable than the proposed Project, it is likely that less terrestrial cable would be installed in the City. Consequently, fewer areas in the City would be exposed to temporary noise and vibration associated with terrestrial cable installation. The alternative would also reduce the length of time required for directional boring of the marine cables, as one less marine cable would be installed. Given the reduced amount of marine and terrestrial cable under this alternative, noise-related construction activities would occur over a shorter period than under the proposed Project. However, while construction of the alternative and proposed Project components are underway, the anticipated noise and vibration levels at each cable landing site and along each terrestrial cable route would be similar.

Public Services

As discussed in Section 3.11, *Public Services*, the proposed Project would not impact public services such as fire protection, police protection, parks or schools. The components of the Reduced Project Alternative would be similar to the proposed Project, with the exception that one less marine cable and less terrestrial cable would be installed, and therefore construction activities and their anticipated effects would also be similar. No significant impacts are anticipated for this alternative.

Transportation and Traffic

Under the Reduced Project Alternative, the potential for adverse effects on marine navigation would be reduced compared to the proposed Project because one fewer marine cable would be installed. This alternative would require less of a construction effort by reducing the length of time that cable-laying ships and support vessels would be used for cable-laying operations, thereby reducing potential hazards to marine vessel navigation during cable-laying operations.

This alternative would also reduce the total terrestrial cable that would be constructed under the proposed Project. As discussed in Section 3.12, *Transportation and Traffic*, installation of the terrestrial cables would cause short-term adverse impacts on local traffic and circulation due to temporary blockage of travel lanes, which would result in minor traffic delays and localized congestion. Compared with the proposed Project, the extent of traffic impacts under this alternative (e.g., effects on local circulation, impeded access for emergency vehicles) would be reduced in

magnitude. However, temporary transportation impacts during construction of the cable landing sites (e.g., disruptions to beach and property access, loss of parking) would be the same as for the proposed Project.

Conclusion

The Reduced Project Alternative would generally have reduced impacts compared to the proposed Project because one less cable would be installed, which would result in impacts that are similar to the Project, but reduced in magnitude. Installation of three cables rather than four results in reduced impacts associated with Project construction and also reduces the amount of seafloor affected by cable laying.

The Reduced Project Alternative would reduce, but not completely avoid, a number of the significant impacts identified for the proposed Project in Chapter 3 (Environmental Setting and Impact Analysis). Most of the Project's significant impacts are temporary and associated with cable installation. The significant impacts reduced by the Reduced Project Alternative include:

- **Air Quality.** Reduced air pollutant emissions generated by marine cable-laying operations.
- **Biological Resources.** Reduced extent of cable-laying impacts on hard-bottom habitats and associated organisms, reduced risk of vessel collision with marine mammals and sea turtles, reduced risk of marine mammal entanglement, and reduced potential for an accidental spill to affect marine life.
- **Cultural Resources.** Reduced potential for damage to buried or submerged historical, archaeological, and paleontological resources; and reduced potential for encountering human remains.
- **Geology and Soils.** Reduced potential for marine cable laying or boring to encounter unstable geologic units or soils, and reduced potential for laying cable in an area susceptible to seismic-related ground failure.
- **Hazards and Hazardous Materials.** Reduced potential for accidental oil or hazardous materials spills during construction.
- **Hydrology and Water Quality.** Reduced potential for accidental release of fuel, fluids, or debris into marine waters, and reduced amount of re-suspension of marine sediments within the water column.
- **Land Use and Recreation.** Reduced disruption of existing uses by construction activity.
- **Noise and Vibration.** Reduced extent of construction noise and vibration due to potentially reduced terrestrial construction, and reduced potential for noise and vibration associated with backup power generation at PFE facilities.
- **Transportation and Traffic.** Reduced amount of temporary traffic disruption from terrestrial cable installation; reduced effects on pedestrian, bicycle, transit, and emergency vehicle circulation during construction; reduced traffic hazards from lane closures during construction; and reduced effects on marine vessel navigation and safety during cable-laying operations.

4.4.3 Longfellow Avenue Beach Cable Landing Site

This alternative would utilize a beach location adjacent to the Strand at Longfellow Avenue as an alternative to the proposed cable landing sites on the beach near 25th Street and Neptune Avenue. This was a beach cable landing site originally considered by the applicant, but was dismissed in favor of the 25th Street and Neptune Avenue beach sites. The size and general layout of this cable landing

site would be the same as the 25th Street beach landing site. All other elements of the Project would remain unchanged under this alternative.

Aesthetics

As the components of the Project would be located on the sea floor, underground in public street rights-of-way, or within existing facilities, the Project would not result in any substantial change in visual conditions once installed compared to existing conditions. Aesthetic impacts would be temporary and limited to the Project's construction period. One of the visible activities during construction would be the marine directional bores at two of the proposed cable landing sites. As described in Section 3.1, the boring activities within the landing sites would be screened from view by fencing, but the fenced enclosure itself would be highly visible from nearby locations and, from some vantage points, some of the boring equipment may be visible from outside the enclosure. Due to heavy recreational use of the beach and The Strand, and visibility from nearby homes, the visual impacts of the beach landing sites are considered more substantial than at the optional street landing sites. This visual impact is temporary, but would be adverse and significant.

Under the Longfellow Avenue Beach Cable Landing Site Alternative, the visual impacts associated with either the 25th Street or Neptune Avenue beach landing sites would be relocated to a beach landing site at Longfellow Avenue. Impacts would be comparable at the three beach landing sites, because each of the sites are characterized by similar conditions including adjacency to The Strand and beachfront homes. Adverse visual impacts for this alternative would be very similar to those of the proposed Project, and would remain temporary in nature.

All other components of the Longfellow Avenue Beach Cable Landing Site Alternative (i.e., terrestrial conduit routes, the PFE facilities, and marine cables) would remain unchanged from the proposed Project.

Air Quality

This alternative would involve the installation of exactly the same components as the proposed Project (i.e. marine cables, landing manholes, ocean groundbeds, terrestrial cables, and PFE facilities). The only difference would be the location of one of the beach landing sites. Installation methods for these facilities would also be identical to the proposed Project. Therefore, air pollutant emissions associated with construction of the Project would be identical to the proposed Project, including emissions associated with material deliveries, operation of boring equipment, and worker trips.

Biological Resources

Due to poor habitat conditions associated with a high level of existing disturbance from human activity, the proposed beach landing sites (i.e., 25th Street and Neptune Avenue) do not provide suitable habitat for local wildlife or sensitive plants. There are no significant impacts to biological resources associated with either of the proposed beach landing sites or other terrestrial facilities. Habitat conditions at the alternative beach landing site at Longfellow Avenue are basically identical to the proposed 25th Street and Neptune Avenue sites. Therefore, impacts to biological resources at the Longfellow Avenue landing site would be the same as described for the proposed Project, and would not be significant.

All other components of the Longfellow Avenue Beach Cable Landing Site Alternative (i.e., terrestrial conduit routes, the PFE facilities, and marine cables) would remain unchanged from the proposed Project. Overall, impacts to terrestrial and marine biological resources under this alternative would be identical to those described for the proposed Project.

Cultural Resources

Any ground-disturbing activities that will impact sediments below the modern roadbed and any modern soil fill should be seen as having the potential to encounter buried cultural deposits. Under the proposed Project, each of the proposed beach landing sites (i.e., 25th Street and Neptune Avenue) would require ground-disturbing activities for the excavation and installation of two manholes, which has the potential to affect sediments with high paleontological sensitivity and to encounter unknown buried resources. The Longfellow Avenue Beach Cable Landing Site Alternative would not change the number of proposed landing sites, and the alternative Longfellow Avenue site would involve the same types of construction activity and level of effort as the proposed sites. Consequently, this alternative would create a similar likelihood of impacting cultural resources as the proposed Project.

All other components of the Longfellow Avenue Beach Cable Landing Site Alternative (i.e., terrestrial conduit routes, the PFE facilities, and marine cables) would remain unchanged from the proposed Project. Impacts to cultural resources under this alternative would be identical to those described for the proposed Project.

Geology and Soils

The alternative cable landing site at Longfellow Avenue would require a construction effort similar to the proposed landing sites on the beach near 25th Street and Neptune Avenue. As discussed in Section 3.5, *Geology and Soils*, terrestrial construction activities could exacerbate erosion conditions by exposing soils during trenching and excavation of bore pits. BMPs that include sediment and erosion control measures would be implemented to minimize adverse erosion effects. Given the similarity of the alternative and the proposed Project components, overall impacts to geology and soils would be unchanged under the Longfellow Avenue Beach Cable Landing Site Alternative.

Greenhouse Gas Emissions

As described for air quality, this alternative would result in the installation of the same facilities as the proposed Project using identical installation methods. Therefore, emission of greenhouse gases during construction would be the same as the proposed Project under this alternative. Similarly, greenhouse gas emissions associated with Project operation and maintenance would be unchanged under this alternative.

Hazards and Hazardous Materials

Potential impacts related to hazards and hazardous materials for the alternative cable landing site at Longfellow Avenue would be identical to the proposed Project. This alternative would contain the same components as the proposed Project and those components would be installed according the same methods described in Section 2.4. Given the similarity of the alternative and the proposed Project, overall impacts associated with hazards and hazardous materials would be unchanged under the Longfellow Avenue Beach Cable Landing Site Alternative.

Hydrology and Water Quality

With the exception of altering the location of one of the two proposed cable landing sites, this alternative would contain the same components as the proposed Project (i.e., terrestrial conduit routes, PFE facilities, marine cables), all of which would be installed according to the same methods described in Sections 2.4 and 2.5. Given the similarity of the alternative and the proposed Project, overall impacts associated with hydrology and water quality would be unchanged under the Longfellow Avenue Beach Cable Landing Site Alternative.

Land Use and Recreation

The land uses surrounding the alternative cable landing site at Longfellow Avenue are similar to the lands uses near the proposed landing sites on the beach near 25th Street and Neptune Avenue (i.e., recreational, residential). During construction, land use and recreation impacts would be similar at all three landing sites. As the Longfellow Avenue Beach Cable Landing Site Alternative would contain the same components as the proposed Project (i.e., two cable landing sites, terrestrial conduit routes, PFE facilities, four marine cables), overall impacts associated with land use and recreation would be the same as the proposed Project.

Noise and Vibration

Noise would be generated by Project construction activities that include the marine directional bores and installation of the terrestrial cables connecting the cable landing sites to the PFE facilities. This noise would result in a temporary adverse impact to adjacent land uses (i.e., residences and other sensitive receptors). Under the Longfellow Avenue Beach Cable Landing Site Alternative, the same number of marine directional bores would occur and an equivalent amount of terrestrial cable would be installed. However, noise associated with the marine directional bores and, to a lesser extent, terrestrial cable installation would be shifted to the alternative beach landing site at Longfellow Avenue. Therefore, noise and vibration impacts for this alternative would be identical to those of the proposed Project, except for location. The locations of the beach landing sites, including this alternative, have similar nearby sensitive noise receptors such as beachfront homes and recreational users of the beach and Strand. Although noise impacts would occur at a different cable landing site under this alternative, construction noise impacts would remain significant.

Public Services

As discussed in Section 3.11, *Public Services*, the proposed Project would not impact public services such as fire protection, police protection, parks or schools. The components of the Longfellow Avenue Beach Cable Landing Site Alternative would be similar to the proposed Project, with the exception that an alternative cable landing site at Longfellow Avenue would be constructed in lieu of one of the proposed cable landing sites (i.e., 25th Street and Neptune Avenue). Construction activities for the alternative components and their anticipated effects would be similar to the proposed Project. No significant impacts are anticipated for the Longfellow Avenue Beach Cable Landing Site Alternative.

Transportation and Traffic

Under this alternative, the use of the cable landing site at Longfellow Avenue in lieu of one of the proposed landing sites (i.e., 25th Street and Neptune Avenue) would not notably affect the Project's

construction impacts on transportation and traffic (e.g., temporary blockage of travel lanes, impeded access for emergency vehicles). Each of the proposed and alternative cable landing sites would involve an equivalent amount and type of construction activity, and there would be no change in the number of trips associated with equipment and material deliveries or worker commuting.

Effects on marine navigation would be identical to the proposed Project because the offshore components of the Project would be unchanged under the Longfellow Avenue Beach Cable Landing Site Alternative.

Conclusion

The impacts of the Longfellow Avenue Beach Cable Landing Site Alternative would be very similar to those of the proposed Project. That is because this alternative has exactly the same components as the proposed Project and the same operational characteristics. The only difference is the location of one of the beach cable landing sites. The alternate location on the beach near Longfellow Avenue has characteristics that are very similar to the Project's proposed beach landing sites at 25th Street and Neptune Avenue. As a result, the Project's significant impacts would not be reduced by the Longfellow Avenue Beach Cable Landing Site Alternative, but rather some of the impacts associated with the cable landing sites would occur at a different location.

4.4.4 Reduced Terrestrial Cable Routes

This alternative involves the potential use of a majority, but not all, of the terrestrial cable alignments proposed by the applicant. These terrestrial cables connect the marine cable landing sites to the proposed PFE facilities in the City.

The proposed Project includes three terrestrial cable routes connecting the marine cable landing sites to the four potential PFE locations. Option 1 for the terrestrial cables, shown in Figure 2-1, connects the Neptune Street (beach) and Longfellow Avenue landing sites to all four potential PFE locations, and Option 2 connects the 25th Street landing sites to these same PFE locations, thereby providing connections between all of the proposed landing sites and the four PFE locations. Option 3 provides additional connections between the 25th Street landing sites and three of the four potential PFE locations. Under this alternative, the Option 3 terrestrial cable alignment would not be utilized and only the Option 1 and Option 2 alignments would be available to connect the landing sites to the PFE facilities.

Aesthetics

As the components of the proposed Project would be located on the sea floor, underground in public street rights-of-way, or within existing facilities, the Project would not result in any substantial long-term change in visual conditions compared to existing conditions. Aesthetic impacts would be temporary and limited to the Project's construction period. One of the visible activities during construction would be the installation of terrestrial cables in City streets and in the greenbelt between Valley Drive and Ardmore Avenue. These temporary visual impacts are not considered significant (see Section 3.1, *Aesthetics*); however, they would be reduced under the Reduced Terrestrial Cable Routes Alternative because no terrestrial cable would be installed along the Option 3 route. Installation of terrestrial cable would still be visible at other locations in the City (along the Option 1 and 2 routes). Although temporary visual impacts would be reduced under this alternative,

the visual impacts from cable route construction for both the alternative and proposed Project would remain insignificant.

All other components of the Reduced Terrestrial Cable Routes Alternative (i.e., marine cables, cable landing sites, construction of the PFE facilities) would remain unchanged from the proposed Project.

Air Quality

This alternative would involve the installation of up to 4.44 miles of terrestrial cable compared to a maximum of 6.59 miles of terrestrial cable for the proposed Project. The reduced amount of terrestrial cable associated with this alternative would proportionately reduce the air pollutant emissions associated with cable installation, including emissions associated with material deliveries, operation of boring equipment, and worker trips.

Biological Resources

While the Option 3 terrestrial cable route is primarily located within public streets that do not contain habitat to support native plants or animals, a portion of the Option 3 alignment would be located in a greenbelt between Valley Drive and Ardmore Avenue. The Greenbelt contains various ornamental plants and trees that support common wildlife species, including nesting birds. Under the proposed Project, installation activities for the Option 1, 2, and 3 alignments would be generally consistent with current human activity levels from traffic and other sources of noise and disturbance. Any birds nesting in the Project area are expected to be acclimated to and tolerant of human disturbance, and Project activities are not expected to result in substantial adverse impacts. Nonetheless, noise and vegetation removal in the Greenbelt may result in loss of nests, eggs, or nestlings. The elimination of the Option 3 alignment under the Reduced Terrestrial Cable Routes Alternative would lessen the construction effort within open space and park areas, thereby reducing construction effects on terrestrial biological resources in those areas. However, given that the Option 1 and Option 2 alignments would continue to traverse portions of the Greenbelt under this alternative, temporary wildlife disturbance associated with terrestrial cable installation would still occur. Compared with the proposed Project, impacts to terrestrial biological resources under the Reduced Terrestrial Cable Routes Alternative would be slightly reduced with the elimination of the Option 3 alignment. All other components of the alternative and their associated impacts to terrestrial and marine biological resources would remain unchanged from the proposed Project.

Cultural Resources

Under the Reduced Terrestrial Cable Routes Alternative, the potential for encountering cultural or paleontological resources would be slightly reduced in comparison to the proposed Project because one less terrestrial cable (i.e., Option 3 alignment) would be installed. This alternative would lessen the terrestrial construction effort, which would reduce the potential for inadvertently affecting buried cultural or paleontological resources. It would also reduce the potential for encountering human remains during construction. Because this alternative would install the same number of marine cables, the potential for encountering cultural or paleontological resources in the marine environment would be identical to the proposed Project.

Geology and Soils

As the Reduced Terrestrial Cable Routes Alternative would eliminate the Option 3 alignment, less erosion may occur during construction of the terrestrial components (e.g., trenching and excavation)

when compared to the proposed Project. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., four fiber-optic cables, two landing sites, construction of PFE facilities), overall impacts to geology and soils would be relatively unchanged.

Greenhouse Gas Emissions

As described for air quality, this alternative would result in a reduction of the amount of terrestrial cable installed for the Project and, therefore, would result in a corresponding reduction in air pollutant emissions associated with cable installation. Greenhouse gas emissions associated with Project operation and maintenance would be unchanged under this alternative.

Hazards and Hazardous Materials

Potential impacts related to hazards and hazardous materials for this alternative would be similar to the proposed Project, but reduced in magnitude. As this alternative would eliminate the Option 3 alignment, the likelihood of accidental release of hazardous substances into the environment would also be reduced. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., four fiber-optic cables, two landing sites, construction of PFE facilities), overall impacts associated with hazards and hazardous materials under the Reduced Terrestrial Cable Routes Alternative would be similar to the proposed Project.

Hydrology and Water Quality

Under the Reduced Terrestrial Cable Routes Alternative, impacts related to hydrology and water quality would be similar to the proposed Project but reduced in magnitude. This alternative would eliminate the Option 3 alignment, which would reduce the likelihood of accidental release of hazardous substances into the environment and potential runoff from construction sites. However, given the similarity of the remaining components of the alternative and the proposed Project (i.e., four fiber-optic cables, two landing sites, construction of PFE facilities), overall impacts to hydrology and water quality under the Reduced Terrestrial Cable Routes Alternative would be similar to the proposed Project.

Land Use and Recreation

The Project's potential terrestrial impacts include disruptions with surrounding land uses and recreational resources near the cable landing sites and PFE facilities, and along the terrestrial cable routes during the construction period. As the Reduced Terrestrial Cable Routes Alternative would eliminate the Option 3 alignment, the potential for land use impacts would be reduced in magnitude when compared to the proposed Project. All other components of the alternative and their associated impacts to marine and terrestrial land uses would remain unchanged from the proposed Project.

Noise and Vibration

As the Reduced Terrestrial Cable Routes Alternative would eliminate the Option 3 alignment, it would reduce the areas in the City that would be exposed to temporary noise and vibration associated with terrestrial cable installation. This reduction in noise impacts would benefit the land uses along the Option 3 alignment that primarily include residences and some commercial uses. Overall impacts from construction noise would remain significant under this alternative, as construction of the remaining components would be identical to the proposed Project.

Public Services

As discussed in Section 3.11, *Public Services*, the proposed Project would not impact public services such as fire protection, police protection, parks or schools. The components of the Reduced Terrestrial Cable Routes Alternative would be similar to the proposed Project, with the exception that the Option 3 alignment would be eliminated. Construction activities for the alternative components and their anticipated effects would be similar to the proposed Project. No significant impacts are anticipated for the Reduced Terrestrial Cable Routes Alternative.

Transportation and Traffic

The Reduced Terrestrial Cable Routes Alternative would eliminate the Option 3 alignment, thereby reducing the total terrestrial cable that would be constructed under the proposed Project. As discussed in Section 3.12, *Transportation and Traffic*, installation of the terrestrial cables would cause short-term adverse impacts on local traffic and circulation due to temporary blockage of travel lanes, which would result in minor traffic delays and localized congestion. Compared with the proposed Project, the extent of traffic impacts under this alternative (e.g., effects on local circulation, impeded access for emergency vehicles) would be reduced in magnitude. In particular, traffic disruption would be avoided on relatively highly traveled portions of Manhattan Avenue, Pier Avenue, and Ardmore Avenue, as well as portions of 16th Street, Loma Drive, Valley Drive, Monterey Boulevard, 8th Street, and 1st Place.

For construction of the remaining alternative components (i.e., marine cables, cable landing sites, PFE facilities), temporary transportation impacts would be the same as under the proposed Project, as these components would involve an equivalent amount and type of construction activity.

Conclusion

The Reduced Terrestrial Cable Routes Alternative would reduce certain onshore impacts associated with installation of the terrestrial cables, but would not modify any impacts in the marine environment or impacts associated with the cable landing sites because those aspects of the alternative would be identical to the proposed Project. Construction for the installation of two terrestrial cable alignments rather than three reduces impacts associated with terrestrial construction, but results in no changes to impacts in the marine environment.

The Reduced Terrestrial Cable Routes Alternative would reduce, but not completely avoid, a number of the significant impacts identified for the proposed Project in Chapter 3 (Environmental Setting and Impact Analysis). Most of the Project's significant impacts are temporary and associated with cable installation. The significant impacts reduced by the Reduced Terrestrial Cable Routes Alternative include:

- **Air Quality.** Reduced air pollutant emissions generated by terrestrial cable installation.
- **Biological Resources.** Reduced disturbance of wildlife during installation of the terrestrial cables, including nesting birds.
- **Cultural Resources.** Reduced potential for damage to buried historical, archaeological, and paleontological resources; and reduced potential for encountering human remains.
- **Hazards and Hazardous Materials.** Reduced potential for accidental oil or hazardous materials spills during construction.

- **Hydrology and Water Quality.** Reduced potential for discharges associated with dewatering during construction.
- **Land Use and Recreation.** Reduced disruption of existing uses due to terrestrial construction activity.
- **Noise and Vibration.** Reduced extent of construction noise and vibration due to reduced terrestrial construction.
- **Transportation and Traffic.** Reduced amount of temporary traffic disruption from terrestrial cable installation; reduced effects on pedestrian, bicycle, transit, and emergency vehicle circulation during construction; and reduced traffic hazards from lane closures during construction.

4.4.5 Street Landing Sites Only

Under this alternative, the applicant's two preferred locations on the beach for cable landing sites would not be used and instead the optional street locations at 25th Street and Longfellow Avenue would be utilized for cable landing sites. All other aspects of the proposed Project would remain the same. Basically, this alternative simply eliminates the applicant's preferred sites for cable landing at the beach in favor of the landing sites within City streets.

Aesthetics

By not using the cable landing sites on the beach, temporary visual effects on views to the beach and ocean would be eliminated during construction. This would reduce adverse impacts for residences along the beach as well as users of the beach and Strand. Visual impacts would still be caused by blocking views near the street landing sites.

Air Quality

Because this alternative does not reduce any of the proposed construction activity, impacts on air quality would be the same as the proposed Project.

Biological Resources

No sensitive biological resources are located at either the beach or street cable landing sites. However, there is the possibility that the California least tern and western snowy plover may visit the areas of the beach landing sites to forage. If this were to occur, activity associated with the cable landing sites could disturb these birds, but routine use of the beach for recreation would create a similar disturbance, causing the birds to move to other areas. Therefore, the impacts of this alternative would not be substantially different than those of the proposed Project.

Cultural Resources

No known cultural or paleontological resources are located at any of the proposed cable landing sites, but there is always the possibility that excavation or boring could disturb or destroy buried resources. This alternative would not reduce the total amount of boring and excavation required for the Project; therefore, impacts would be similar to the proposed Project.

Geology and Soils

Under this alternative, only street locations would be utilized for cable landing sites. Given the similarity of the components of this alternative and the proposed Project (i.e., four fiber-optic cables,

two landing sites, construction of PFE facilities), overall impacts to geology and soils would be relatively unchanged under this alternative.

Greenhouse Gas Emissions

This alternative would result in the installation of the same facilities as the proposed Project using identical installation methods. Therefore, emission of greenhouse gases during construction would be the same as the proposed Project under this alternative. Similarly, greenhouse gas emissions associated with Project operation and maintenance would be unchanged under this alternative.

Hazards and Hazardous Materials

Potential impacts related to hazards and hazardous materials for this alternative would be identical to the proposed Project. This alternative would contain the same components as the proposed Project and those components would be installed according the same methods described in Section 2.4. Given the similarity of the alternative and the proposed Project, overall impacts associated with hazards and hazardous materials would be unchanged under this alternative.

Hydrology and Water Quality

With the exception of eliminating the possibility of using the beach locations for the proposed cable landing sites, this alternative would contain the same components as the proposed Project (i.e., terrestrial conduit routes, PFE facilities, marine cables), all of which would be installed according to the same methods described in Sections 2.4 and 2.5. Given the similarity of the alternative and the proposed Project, overall impacts associated with hydrology and water quality would be unchanged under this alternative.

Land Use and Recreation

By eliminating the use of the cable landing sites at the beach, this alternative would reduce impacts associated with recreational use of the beach, including temporary displacement of portions of the beach sand that would otherwise be available for recreation. It would also avoid temporary degradation of the recreational experience for users of adjacent area of beach and the Strand. While this alternative would avoid disturbances to nearby residences at the beach during construction, the use of the street cable landing sites would result in construction-related disturbances to nearby residences and would affect more residences overall.

Noise and Vibration

Noise would be generated by Project construction activities that include the marine directional bores and installation of the terrestrial cables connecting the cable landing sites to the PFE facilities. This noise would result in a temporary adverse impact to adjacent land uses (i.e., residences and other sensitive receptors). Under this alternative, the same number of marine directional bores would occur and an equivalent amount of terrestrial cable would be installed. However, noise associated with the marine directional bores and, to a lesser extent, terrestrial cable installation would be shifted away from the beach landing sites and to the street landing sites. Therefore, noise and vibration impacts for this alternative would be identical to those of the proposed Project, except for location. Not utilizing the beach for landing sites would reduce temporary noise disturbance to beachfront homes and users of the beach and Strand, but would shift those impacts to the

residences surrounding the street cable landing sites. Although noise impacts would only occur at the street cable landing sites under this alternative, construction noise impacts would remain significant.

Public Services

As discussed in Section 3.11, *Public Services*, the proposed Project would not affect public services such as fire protection, police protection, parks, or schools. The components of the Street Landing Sites Only Alternative would be similar to the proposed Project, except that the option of using the beach for cable landing sites would be eliminated. Construction activities for this alternative and their anticipated effects would be similar to the proposed Project. No significant impacts are anticipated for the Street Landing Sites Only Alternative.

Transportation and Traffic

Use of portions of 25th Street and Longfellow Avenue for cable landing sites involves prolonged (4 weeks) street closures during construction and temporarily eliminates the availability of street parking spaces on those closed street segments. The street closures also cause temporary changes to local traffic patterns and turning movements. These effects would not occur if the beach is used for the cable landing sites. Therefore, this alternative results in temporary traffic and parking impacts that would not occur if the beach landing sites are utilized for the proposed Project. There would be no change in the number of trips associated with equipment and material deliveries or worker commuting.

Effects on marine navigation would be identical to the proposed Project because the offshore components of the Project would be unchanged under the Street Landing Sites Only Alternative.

Conclusion

The Street Landing Sites Only Alternative would reduce temporary disruptions to the recreational use of the beach and Strand during construction. These disturbances are primarily caused by construction noise, disruption of views to the beach and ocean, and general activity associated with the boring operation, including delivery of equipment and materials. This alternative would reduce temporary disturbance to beachfront residences and recreation, and instead those disturbances would occur at the residences surrounding the street landing sites, resulting in a tradeoff. The Street Landing Sites Only Alternative would result in temporary traffic and parking impacts that would not occur with use of the beach landing sites. All of these impacts are temporary and associated with Project construction. After construction, there would be no difference in impacts between this alternative and the proposed Project.

The Street Landings Only Alternative would reduce some of the significant impacts identified for the proposed Project in Chapter 3 (Environmental Setting and Impact Analysis). The significant impacts reduced by this alternative include:

- **Aesthetics.** Avoids disruption of views to the beach and ocean, primarily from beachfront residences, the Strand, and nearby beach areas. However, visual impacts would occur in the vicinity of the street landing sites.
- **Biological Resources.** Reduced potential for disturbance of foraging snowy plovers and least terns that may visit the areas of the beach landing sites.

- **Land Use and Recreation.** Reduces disruptions of recreation areas (beach and Strand) during construction, but results in temporary disturbances to a larger number of residences (surrounding the street landing sites).

4.5 Comparison of Alternatives

The impacts of each of the alternatives in comparison to the proposed Project are discussed in Section 4.4 above. Table 4-1 provides a summary comparison of the alternatives and the proposed Project based on the discussions in Section 4.4. The No Project Alternative is not included in Table 4-1 because the Project would not be implemented under this alternative and impacts associated with the proposed Project would not occur. Therefore, inclusion of the No Project Alternative in the table does not make a meaningful contribution to the comparison of the proposed Project to the alternatives.

In accordance with CEQA requirements, an "environmentally superior alternative" must be identified among the alternatives analyzed in an EIR. The environmentally superior alternative is the alternative found to have an overall advantage compared to the other alternatives based on the impact analysis in the EIR. Of the alternatives analyzed, the No Project Alternative would result in the fewest environmental impacts and is therefore considered the environmentally superior alternative because it would avoid the impacts associated with implementation. However, in accordance with State CEQA Guidelines Section 15126.6(e)(2), if the No Project Alternative is identified as the environmentally superior alternative, an EIR is required to identify an environmentally superior alternative from among the other alternatives.

The environmentally superior alternative is generally considered to be the alternative that would result in the fewest significant environmental impacts. However, just tallying the number of significant environmental impacts can sometimes be misleading, because some significant impacts may be more serious or substantive than others. For instance, a temporary impact can be significant, but a permanent significant impact would probably be more important to consider in comparing the impacts among alternatives. Similarly, some resources are considered more important or sensitive than others. For example, impacts on threatened or endangered species would be considered more substantive than impacts on common species. It is also worth noting that CEQA places primary importance on impacts to the physical environment and generally does not consider social and economic effects to be significant.

A reduced version of the Project is the environmentally superior alternative because it would reduce the overall magnitude of the Project's impacts. The Longfellow Avenue Beach Cable Landing Site Alternative is not superior because it relocates some of the Project's impacts without reducing them. The Reduced Terrestrial Cable Routes Alternative would have fewer impacts than the proposed Project because it would reduce aesthetic, noise, and traffic impacts, as well as other construction-related impacts associated with installing cable between the landing sites and the PFE facilities. However, impacts to the marine environment would not be reduced with this alternative. The Street Landing Sites Only Alternative would reduce certain construction impacts at the beach, including temporary disruptions of views and recreation, but impacts would still occur at the street landing sites, including impacts related to construction noise and temporary street closure, including temporary loss of on-street parking spaces. The Reduced Project Alternative would only involve the installation of three marine cables across the Pacific Ocean rather than the four cables proposed for the Project. This alternative would also likely require fewer terrestrial facilities, and no more than

three PFE facilities. Under the Reduced Project Alternative, the types of impacts described for the proposed Project would still occur, but would be reduced in magnitude due to the reduced number of marine cables and reduced scale of terrestrial facilities constructed. Therefore, among the alternatives evaluated in this EIR, the Reduced Project Alternative is environmentally superior, but would not fulfill the applicant's objectives as well as the proposed Project.

The City of Hermosa Beach is under no obligation to adopt the environmentally superior alternative. Identification of the environmentally superior alternative is an EIR requirement, but it does not constraint or limit the City's decision on the proposed Project. In rendering a decision on the Project, City decision makers will need to consider other factors in addition to the Project's significant environmental impacts.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Aesthetics					
Visual quality at cable landing sites	Construction activities at the cable landing sites would temporarily degrade the visual quality of the surrounding areas. *(Class I)*	*Similar.* Because this alternative includes the same number of cable landing sites, impacts would be similar to the proposed Project.	*Similar.* Impacts would be identical to the proposed Project except that the impacts would occur at a different cable landing site.	*Similar.* Impacts would be identical because the cable landing site locations and activity would be identical to the proposed Project.	*Similar.* Impacts related to the beach landing sites would be avoided, but impacts would still occur at the street landing sites.
Visual quality along terrestrial cable alignments	Construction of the buried conduit system and PFE facilities would temporarily degrade the visual quality of the surrounding areas. *(Class III)*	*Slightly Reduced.* The installed length of terrestrial cable would be less than the proposed Project, resulting in a slight reduction in temporary impacts.	*Similar.* Impacts would be basically identical except that the terrestrial cable routes would be altered slightly to connect to a different landing site.	*Slightly Reduced.* The installed length of terrestrial cable would be less than the proposed Project, resulting in a slight reduction in temporary impacts.	*Similar.* There would be no changes along the terrestrial cable alignments compared to the proposed Project.
Visual quality off shore	Off-shore construction activities would temporarily degrade the visual quality and views of the Pacific Ocean. *(Class III)*	*Slightly Reduced.* Because one fewer marine cable would be installed, there would less cable-laying activity offshore.	*Similar.* Offshore vessel activity would be identical to the proposed Project.	*Similar.* Offshore vessel activity would be identical to the proposed Project.	*Similar.* There would be no changes to off-shore construction activities compared to the proposed Project.
Nighttime illumination during construction	Lighting associated with Project construction would create new sources of light that would be visible from surrounding residences. *(Class II)*	*Similar.* The temporary need for nighttime lighting at the landing sites would be the same as the proposed Project.	*Similar.* Impacts would be identical except that temporary nighttime lighting would be used at a different landing site.	*Similar.* The temporary need for nighttime lighting at the landing sites would be the same as the proposed Project.	*Similar.* Nighttime lighting effects at the beach landing sites would be avoided, but would still occur at the street landing sites.
Obstruction of scenic views	During construction, the cable landing sites would obstruct scenic views of the beach and coastline. *(Class I)*	*Similar.* Because the cable landing site locations and activity would be identical to the proposed Project, the impact would be identical.	*Similar.* The alternative cable landing site would not change the total number of proposed landing sites or the proposed activity at the sites. Aesthetic impacts to the beach and coastline would be similar to the proposed Project.	*Similar.* Because the cable landing sites would be the same as the proposed Project, the impact would be identical.	*Slightly Reduced.* Obstruction of scenic views at the beach would be avoided, but certain views of the beach and ocean would be obstructed at the street landing sites.
Air Quality					
SCAQMD regional emission thresholds	During marine construction, construction equipment emissions would exceed SCAQMD regional emission thresholds. *(Class I)*	*Reduced.* The installation of one fewer marine cable would lessen the construction emissions and impacts on air quality.	*Similar.* No change would occur to construction activities. Only the location would be changed.	*Slightly Reduced.* Emissions during construction would be slightly reduced because the Option 3 alignment would not be installed.	*Similar.* No change would occur to construction activities. Only the options for cable landing locations would be changed by this alternative.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Pollutant emissions from Project operation	Normal operating emissions would be below regional thresholds. *(Class III)*	*Reduced.* The installation of one fewer marine cable would lessen the likelihood of repair emissions and impacts on air quality.	*Similar.* No change would occur to planned operational activities.	*Similar.* No change would occur to planned operational activities.	*Similar.* No change would occur to planned operational activities.
Exposure of local receptors to pollutants during construction	Construction emissions would be below SCAQMD localized significance thresholds. *(Class III)*	*Reduced.* The installation of one fewer marine cable would lessen the construction emissions and impacts on air quality.	*Similar.* No change would occur to the construction activities. Only the location would be changed.	*Slightly Reduced.* Emissions during construction would be slightly reduced because the Option 3 alignment would not be installed.	*Similar.* No change in pollutant generation during construction would occur. Exposure to sensitive receptors would be similar to the proposed Project.
Exposure of local receptors to pollutants during operation	Operation emissions would be below SCAQMD localized significance thresholds. *(Class III)*	*Reduced.* The installation of one fewer marine cable would lessen the operation emissions and impacts on air quality.	*Similar.* No change would occur to the construction activities. Only the location would be changed.	*Slightly Reduced.* Emissions during construction would be slightly reduced because the Option 3 alignment would not be installed.	*Similar.* No change would occur to planned operational activities.
Generation of air toxic pollutant emissions	Toxic emissions would be temporary and distributed over a large area. Health risk impacts would not be significant. *(Class III)*	*Reduced.* The installation of one fewer marine cable would lessen the toxic emissions and impacts on air quality.	*Similar.* No change would occur to the construction activities. Only the location would be changed.	*Slightly Reduced.* Emissions during construction would be slightly reduced because the Option 3 alignment would not be installed.	*Similar.* No change in pollutant generation during construction would occur.
Valley Fever exposure	Valley Fever is not a high risk in the Project area, and dust mitigation measures would reduce emissions. *(Class III)*	*Similar.* Ground-disturbing activities at the cable landing sites and along terrestrial alignments would be similar to the proposed Project.	*Similar.* Ground-disturbing activities at the cable landing sites and along terrestrial alignments would be similar to the proposed Project.	*Similar.* One less terrestrial cable would be installed. Ground-disturbing activities would be similar to the proposed Project.	*Similar.* Ground-disturbing activities at the cable landing sites and along terrestrial alignments would be similar to the proposed Project.
Objectionable odors	Odors generated would be limited and mild. (*Class III)*	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project.	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project.	*Similar.* One less terrestrial cable would be installed. Construction activities would be similar to the proposed Project.	*Similar.* Construction activities at the cable landing sites and along terrestrial alignments would be similar to the proposed Project.
Biological Resources					
Effects on listed and special-status species	Project construction/installation and decommissioning may adversely affect western snowy plover and California least tern. *(Class II)*	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project.	*Similar.* Habitat conditions at the alternative cable landing site are identical to the proposed sites.	*Slightly Reduced.* Construction effects on terrestrial biological resources would be avoided along the Option 3 alignment. Temporary wildlife disturbance would still occur along the Option 1 and 2 alignments.	*Slightly Reduced.* Construction activities would not be an option at the beach landing sites under this alternative, which would reduce the potential for effects on snowy plover and least tern.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Effects on nesting birds	Project construction/installation and decommissioning may adversely affect nesting birds. *(Class II)*	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project.	*Similar.* Habitat conditions at the alternative cable landing site are identical to the proposed sites.	*Slightly Reduced.* Construction effects on terrestrial biological resources would be avoided along the Option 3 alignment. Temporary wildlife disturbance would still occur along the Option 1 and 2 alignments.	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project. Only utilizing the street landing sites would not change this impact.
Conflicts with policies or ordinances protecting biological resources	Project construction may conflict with local policies protecting biological resources. *(Class II)*	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project.	*Similar.* Habitat conditions at the alternative cable landing site are identical to the proposed sites.	*Slightly Reduced.* Construction effects on terrestrial biological resources would be avoided along the Option 3 alignment. Temporary wildlife disturbance would still occur along the Option 1 and 2 alignments.	*Similar.* Construction activities would be similar to the proposed Project, resulting in impacts similar to the proposed Project. Only utilizing the street landing sites would not change this impact.
Conflicts with conservation plans	Marine cable installation and repair would result in disturbance to Essential Fish Habitat. *(Class III)*	*Reduced.* The installation of one fewer marine cable would lessen the extent of construc-tion impacts on marine resources.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.
Construction impacts on benthic organisms in soft-bottom areas	Marine cable installation and repair in soft-bottom areas would result in disturbance of benthic organisms. *(Class III)*	*Reduced.* The installation of one fewer marine cable would lessen the extent of construc-tion impacts on marine resources.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.
Construction impacts on benthic organisms in hard-bottom areas	Marine cable installation and repair in hard-bottom areas would result in disturbance of benthic organisms, including crushing and dislodgement. *(Class II)*	*Reduced.* The installation of one fewer marine cable would lessen the extent of construc-tion impacts on marine resources.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.
Increased turbidity during cable installation	Marine cable installation and repair would result in temporary suspension of sediments and increased turbidity, affecting filter-feeding organisms or cause disturbance to benthic organisms. *(Class III)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby lessening the extent of marine resource impacts.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Dispersal of contaminated sediment during cable installation	Marine cable installation and repair could disturb contaminated sediments and result in the dispersal and potential uptake of these contaminants by benthic and pelagic organisms. *(Class III)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby lessening the extent of marine resource impacts.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.
Temporary effects on marine mammals	Vessel movement and noise could temporarily disturb marine mammals in the area. *(Class III)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby minimizing effects on marine mammals.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project..	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.
Vessel collisions with marine mammals	Marine mammals and sea turtles could be struck by Project vessels. *(Class II)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby minimizing effects on marine mammals.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.
Risk of marine mammal entanglement in fiber-optic cable	Sections of marine cable suspended above the seafloor present a small risk of marine mammal entanglement. *(Class II)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby minimizing effects on marine mammals.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.
Hazardous spill impacts on marine life	An accidental release of fuel or oil may result in fouling of beaches or the sea floor, fouling of birds or marine mammals, and ingestion of oil by marine life. *(Class II)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby lessening the extent of marine resource impacts.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* Marine construction would be the same as the proposed Project, resulting in identical impacts to the proposed Project.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Cultural Resources					
Impacts on known historical resources	Installation of power feed equipment at the City maintenance yard and associated ground disturbance could result in a substantial adverse change in the significance of an historical refuse burner and archaeological deposits at the Hermosa Beach City Dump. (*Class II)*	*Similar.* No change would occur to the PFE locations.	*Similar.* No change would occur to the PFE locations.	*Similar.* No change would occur to the PFE locations.	*Similar.* No change would occur to the PFE locations.
Unknown buried historical resources	Ground disturbance could encounter unknown buried archaeological or ethnographic historical resources. *(Class I)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced ground disturbance.	*Similar.* The amount of ground disturbance would be basically identical except that terrestrial cable routing would be altered slightly to utilize a different landing site.	*Slightly Reduced.* Because less terrestrial cable would be installed, ground disturbance would be reduced.	*Similar.* The amount of ground disturbance would be basically identical to the proposed Project.
Buried prehistoric or historic unique archaeological resources	Ground-disturbing activities have the potential to uncover buried prehistoric or historic unique archaeological resources. *(Class I)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced ground disturbance.	*Similar.* The amount of ground disturbance would be basically identical except that terrestrial cable routing would be altered slightly to utilize a different landing site.	*Slightly Reduced.* Because less terrestrial cable would be installed, ground disturbance would be reduced.	*Similar.* The amount of ground disturbance would be basically identical to the proposed Project.
Important paleontological resources	Excavation associated with construction could encounter scientifically important paleontological resources. *(Class I)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced excavation.	*Similar.* The amount of excavation would be basically identical except that locations would be altered slightly to utilize a different landing site.	*Slightly Reduced.* Because less terrestrial cable would be installed, excavation would be reduced.	*Similar.* The amount of ground disturbance would be basically identical to the proposed Project.
Disturbance or destruction of human remains	Ground-disturbing activities could result in the disturbance or destruction of human remains. *(Class I)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced ground disturbance.	*Similar.* The amount of ground disturbance would be basically identical except that terrestrial cable routing would be altered slightly to utilize a different landing site.	*Slightly Reduced.* Because less terrestrial cable would be installed, ground disturbance would be reduced.	*Similar.* The amount of ground disturbance would be basically identical to the proposed Project.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Disturbance or destruction of unknown submerged resources	Marine ground-disturbing activities could result in the disturbance or destruction of unknown or inaccurately recorded submerged resources. (*Class II)*	*Reduced.* The installation of one fewer marine cable would reduce the magnitude of construction in marine areas, thereby lessening the extent of marine resource impacts.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* No change would occur to the marine portion of the Project.
Geology and Soils					
Disturbance of unique geologic marine features	Marine construction could disturb unique geologic features. *(Class III)*	*Reduced.* The potential for cable-laying activities to disturb an unstable area and trigger slope failure would be reduced because one fewer marine cable would be installed.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* No change would occur to the marine portion of the Project.
Triggering or accelerating terrestrial geologic processes	Terrestrial construction could result in erosion. *(Class III)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, which would lessen the degree of erosion during construction.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and would implement Project BMPs to minimize erosion effects.	*Slightly Reduced.* The installed length of terrestrial cable would be less than the proposed Project, which would lessen the degree of erosion during construction.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and would implement Project BMPs to minimize erosion effects.
Unstable geologic units or soils	Marine construction associated with cable laying and directional boring could be located on a geologic unit or soil that is unstable or that would become unstable. *(Class II)*	*Reduced.* The potential for encountering unstable areas along the marine cable routes would be reduced because one fewer cable would be installed.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and would implement Project BMPs to minimize erosion effects.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and would implement Project BMPs to minimize erosion effects.
Seismic-related ground failure, including liquefaction	The proposed cable alignment and marine construction could be susceptible to seismic-related ground failure, including liquefaction. *(Class II)*	*Reduced.* The potential for encountering areas subject to seismic-related ground failure along the marine cable routes would be reduced because one fewer cable would be installed.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and no change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and would implement Project BMPs to minimize erosion effects.
Expansive soils	Expansive soils could damage terrestrial Project components. *(Class III)*	*Reduced.* The potential for encountering expansive soils along the marine and terrestrial cable routes would be reduced because one fewer marine cable and less terrestrial cable would be installed.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and no change would occur to the number of marine cables or cable-laying activities.	*Slightly Reduced.* The potential for encountering expansive soils along the terrestrial cable routes would be slightly reduced because the Option 3 alignment would not be installed.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, and would implement Project BMPs to minimize erosion effects.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Hazards and Hazardous Materials					
Release of hazardous substances into the environment	Oil or hazardous materials spills could occur during Project construction. *(Class II)*	*Slightly Reduced.* Less marine construction activity would be required for the installation of one less marine cable, slightly reducing the potential for a hazardous release. All other components would be the same as the proposed Project.	*Similar.* Construction activities would be identical to the proposed Project, with similar potential for accidental releases.	*Slightly Reduced.* A reduced length of terrestrial cable would be installed, reducing the potential for a hazardous release. Potential for accidental releases into the marine environment would be the same as the proposed Project.	*Similar.* Construction activities would be identical to the proposed Project, with similar potential for accidental releases.
Contaminated marine sediments	Laying marine cable could potentially disturb sediments that contain contaminants. *(Class III)*	*Slightly Reduced.* Less marine construction activity would be required, reducing the potential for disturbing contaminated sediments. All other components would be the same as the proposed Project.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* No change would occur to the marine portion of the Project.	*Similar.* No change would occur to the marine portion of the Project.
Existing contamination within the City of Hermosa Beach Maintenance Yard	Ground-disturbing activities within the maintenance yard could release contaminants into the environment. *(Class II)*	*Similar.* Terrestrial PFE locations would be identical to the proposed Project, with similar potential for accidental releases.	*Similar.* Terrestrial PFE locations would be identical to the proposed Project, with similar potential for accidental releases.	*Similar.* Terrestrial PFE locations would be identical to the proposed Project, with similar potential for accidental releases.	*Similar.* Terrestrial PFE locations would be identical to the proposed Project, with similar potential for accidental releases.
Hydrology and Water Quality					
Water quality during terrestrial construction	Terrestrial construction techniques could result in discharges into the environment. *(Class II)*	*Similar.* No new terrestrial facilities or cable routes would be constructed. Construction activities at the cable landing sites and along terrestrial alignments would be similar to the proposed Project.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, with similar potential for discharges.	*Slightly Reduced.* A reduced length of terrestrial cable would be installed, thereby reducing the potential for a water quality violation. Potential for accidental releases into the marine waters would be the same.	*Similar.* The street cable landing site would require a construction effort similar to the beach sites, with similar potential for discharges.
Discharge of pollutants into marine waters by vessels	Vessels could potentially release fuel, fluids, water, or debris into marine waters. *(Class II)*	*Slightly Reduced.* Less marine construction activity would be required for the installation of one less marine cable, which would reduce the potential for discharge. All other components would be the same as the proposed Project.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, with similar potential for discharges.	*Similar.* The potential for accidental releases into the marine environment would be the same as the proposed Project.	*Similar.* No change would occur to the marine portion of the Project.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Potential re-suspension of contaminated sediments during marine construction	Cable-laying activities could temporarily re-suspend sediments within the water column. (*Class II)*	*Slightly Reduced.* Less marine construction activity would be required for the installation of one less marine cable, which would reduce the potential for disturbing contaminated sedi-ments. All other components would be the same as the proposed Project.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, with similar potential for discharges.	*Similar.* The potential for accidental releases into the marine environment would be the same as the proposed Project.	*Similar.* No change would occur to the marine portion of the Project.
Groundwater impacts during construction	Terrestrial construction activities may encounter shallow saline groundwater near the beach. *(Class III)*	*Similar.* No new terrestrial facilities or cable routes would be constructed. Construction activities at the cable landing sites and along terrestrial alignments would be similar to the proposed Project.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, with similar potential for discharges.	*Slightly Reduced.* Because a reduced length of terrestrial cable would be installed, the potential for encountering groundwater during construction would be slightly reduced.	*Similar.* The street cable landing sites would require a construction effort similar to the beach sites, with similar potential for discharges.
Land Use and Recreation					
Preclusion or disturbance to terrestrial land uses	Terrestrial construction activities would temporarily preclude or disrupt existing land uses. *(Class II)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, which would slightly reduce conflicts with existing land uses.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, with similar impacts to existing land uses.	*Slightly Reduced.* Construction effects on existing land uses would be avoided along the Option 3 alignment. Temporary disruptions to land uses would still occur along the Option 1 and 2 alignments.	*Similar.* The street cable landing sites would require a construction effort similar to the proposed Project, with similar impacts to existing land uses.
Preclusion or disturbance to marine activities	Marine construction activities would temporarily interfere with existing marine activities. *(Class II)*	*Slightly Reduced.* Because one fewer marine cable would be installed, there would less cable-laying activity offshore. Conflicts with existing marine activities would be slightly reduced.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the number of marine cables or cable-laying activities.	*Similar.* No change would occur to the marine portion of the Project.
Disruption of recreation areas at cable landing sites	Construction activities at the cable landing sites would disrupt established recreation areas along the beach and the Strand. *(Class II)*	*Similar.* No change would occur to the number of cable landing sites.	*Similar.* The alternative cable landing site would require a construction effort similar to the proposed Project, with similar impacts to existing recreation areas.	*Similar.* No change would occur to the number of cable landing sites.	*Reduced.* The beach areas and Strand would not be directly affected by construction activity associated with cable landing sites.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Disruption of recreation areas along cable routes	Construction activities for installation of the terrestrial conduit system would temporarily disrupt established recreation activities along the Greenbelt and Ardmore Park. *(Class III)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, which may slightly reduce conflicts with recreation activities along the Greenbelt and Ardmore Park.	*Similar.* No change compared to the proposed Project.	*Slightly Reduced.* Construction effects on recreational resources would be avoided along the Option 3 alignment. Temporary disruptions to recreation would still occur along the Option 1 and 2 alignments.	*Similar.* No change compared to the proposed Project.
Noise and Vibration					
Hermosa Beach Municipal Code construction noise regulations	Construction noise would occur outside of the hours allowed by the Hermosa Beach Municipal Code. *(Class II)*	*Similar.* Daily construction hours would be the same as the proposed Project, resulting in a similar impact.	*Similar.* Daily construction hours would be the same as the proposed Project, resulting in a similar impact.	*Similar.* Daily construction hours would be the same as the proposed Project, resulting in a similar impact.	*Similar.* Daily construction hours would be the same as the proposed Project, resulting in a similar impact.
Temporary construction noise at residential uses	Construction would result in a temporary increase (more than 3 dBA Leq) over ambient noise levels at residential uses. *(Class I)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced impacts.	*Similar.* Because land uses near the Longfellow Ave. site are similar to the proposed site, impacts would be very similar.	*Reduced.* A reduced length of terrestrial cable would be installed, exposing fewer uses to construction noise.	*Slightly Greater.* More residences would be affected by construction noise, although recreationists at the beach and Strand would not be affected.
Temporary construction noise at non-residential uses	Construction would result in a temporary increase (more than 5 dBA Leq) over ambient noise levels at non-residential sensitive receptors. *(Class I)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced noise impacts.	*Similar.* Locations would be slightly altered, but impacts would be similar because similar uses would be exposed to construction noise.	*Reduced.* A reduced length of terrestrial cable would be installed, exposing fewer uses to construction noise.	*Similar.* Non-residential uses are primarily located along the terrestrial cable routes, which would remain basically unchanged.
Construction-related vibration	Construction activity could result in vibration levels that could cause annoyance. *(Class II)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced impacts.	*Similar.* Locations would be slightly altered, but impacts would be similar because similar uses would be exposed to vibration.	*Reduced.* A reduced length of terrestrial cable would be installed, exposing fewer uses to vibration.	*Similar.* Cable landing sites would be altered, but impacts would be similar because similar uses would be exposed to vibration.
Vibration from operations	Generation of backup power at the PFE facilities would periodically result in increased vibration. *(Class II)*	*Reduced.* Fewer PFE facilities would be installed due to the reduced number of fiber-optic cables.	*Similar.* Because operational vibration is only likely at the PFE facilities, which do not change under this alternative, impacts would be identical.	*Similar.* Because operational vibration is only likely at the PFE facilities, which do not change under this alternative, impacts would be identical.	*Similar.* Because operational vibration is only likely at the PFE facilities, which do not change under this alternative, impacts would be identical.
Noise from operations	Operation could result in localized increases in existing ambient noise conditions. *(Class II)*	*Reduced.* Fewer PFE facilities would be installed due to the reduced number of fiber-optic cables.	*Similar.* Because operational noise is only likely at the PFE facilities, which do not change under this alternative, impacts would be identical.	*Similar.* Because operational noise is only likely at the PFE facilities, which do not change under this alternative, impacts would be identical.	*Similar.* Because operational noise is only likely at the PFE facilities, which do not change under this alternative, impacts would be identical.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Public Services					
Need for new for physically altered government facilities	No impact.	*Same as Project.* No need for new or expanded public facilities would occur.	*Same as Project.* No need for new or expanded public facilities would occur.	*Same as Project.* No need for new or expanded public facilities would occur.	*Same as Project.* No need for new or expanded public facilities would occur.
Transportation and Traffic					
Increased traffic volumes and lane closure contributing to congestion	Traffic volumes or temporary road or lane closures would affect traffic flow and create congestion. *(Class II)*	*Slightly Reduced.* The installed length of terrestrial cable would likely be less than the proposed Project, resulting in slightly reduced impacts.	*Similar.* Although the cable landing site would be slightly altered, terrestrial construction activities and their effects on traffic would be very similar to the proposed Project.	*Reduced.* The elimination of the Option 3 alignment would result in fewer lane closures.	*Similar.* Although the cable landing sites would be altered, terrestrial construction activities and their effects on traffic would be similar to the proposed Project.
Beach and property access	Activities requiring temporary road or lane closures would affect beach access and access to adjacent residential and business properties. *(Class II)*	*Slightly Reduced.* Because the cable landing site locations would be identical, effects on beach access would be identical. Impacts from terrestrial cable installation would be slightly reduced.	*Similar.* Although the cable landing site would be slightly altered, terrestrial construction activities and their effects on beach and property access would be very similar to the proposed Project.	*Reduced.* The elimination of the Option 3 alignment would result in fewer lane closures. However, effects on beach access would be the same as the proposed Project.	*Similar.* Because the cable landing sites would not be located at the beach, there would be less effect on beach access, but more residential access would be affected.
Emergency vehicle response	Activities requiring temporary road or lane closures would affect emergency vehicle response. *(Class II)*	*Slightly Reduced.* Impacts related to the cable landing sites would be identical. Impacts from terrestrial cable installation would be slightly reduced.	*Similar.* Due to similar lane closure requirements under this alternative, impacts to emergency vehicle response would be very similar to the proposed Project.	*Reduced.* The elimination of the Option 3 alignment would result in fewer lane closures and reduced impediments for emergency vehicles.	*Similar.* Temporary street closures would be required affecting local circulation, but emergency access to the beach would be largely unchanged.
Bus transit service	Activities requiring temporary road or lane closures would affect bus transit service. *(Class II)*	*Slightly Reduced.* Impacts related to the cable landing sites would be identical. Impacts from terrestrial cable installation would be slightly reduced.	*Similar.* Although the cable landing site would be slightly altered, terrestrial construction activities and their effects on bus transit would be very similar to the proposed Project.	*Reduced.* The elimination of the Option 3 alignment would result in fewer lane closures and reduced effects on transit.	*Similar.* Temporary street and lane closures would still affect transit service.
Pedestrian and bicycle routes	Activities requiring temporary road or lane closures would affect pedestrian/bicycle routes. *(Class II)*	*Slightly Reduced.* Impacts related to the cable landing sites would be identical. Impacts from terrestrial cable installation would be slightly reduced.	*Similar.* Although the cable landing site would be slightly altered, terrestrial construction activities and their effects on pedestrian/bicycle routes would be very similar to the proposed Project.	*Reduced.* The elimination of the Option 3 alignment would result in fewer conflicts with bicycle and pedestrian movement.	*Similar.* Temporary street and lane closures would still affect pedestrians and bicyclists.

Table 4-1. Comparison of Alternatives

Environmental Issue	Proposed Project	Reduced Project Alternative	Longfellow Avenue Beach Cable Landing Site	Reduced Terrestrial Cable Routes	Street Landing Sites Only
Hazards to motorists, pedestrians, and bicyclists	Construction and temporary road or travel lane closures would create hazards to motorists, pedestrians, and bicyclists. *(Class II)*	*Slightly Reduced.* Impacts related to the cable landing sites would be identical. Impacts from terrestrial cable installation would be slightly reduced.	*Similar.* Although the cable landing site would be slightly altered, traffic hazards associated with terrestrial construction activities would be very similar to the proposed Project.	*Reduced.* The elimination of the Option 3 alignment would result in fewer lane closures and reduced hazards to motorists, pedestrians, and bicyclists.	*Similar.* Potential hazards associated with construction within streets would still occur.
Restriction of Coast Guard or lifeguard vessels	Cable-laying activities could restrict the movements of Coast Guard or lifeguard vessels. *(Class III)*	*Reduced.* One fewer marine cable would be installed, thereby reducing restrictions on other vessels during cable-laying operations.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* No change would occur to the marine portion of the Project.
Hazards to marine traffic from boring operations	The marine boring operation would create a temporary hazard for marine traffic. *(Class II)*	*Reduced.* Less marine boring would be required, thereby reducing temporary hazards for marine traffic.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* No change would occur to the marine portion of the Project.
Hazards to marine traffic from boring operations from grapnel tow	The grapnel tow may create a navigational hazard to marine traffic by temporarily blocking the pathway of other vessels. *(Class II)*	*Reduced.* Less grapnel tows would be required, thereby reducing associated navigational hazards.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* No change would occur to the marine portion of the Project.
Hazards to marine traffic cable laying and plowing	Cable laying and plowing could create a temporary navigational hazard to marine traffic. *(Class I)*	*Reduced.* Less cable laying and plowing would be required, thereby reducing associated navigational hazards.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* No change would occur to the marine portion of the Project.
Risk of vessels running aground or striking debris	Increase in the risk of vessels running aground or striking floating or submerged debris resulting from either the construction or permanent works. *(Class II)*	*Reduced.* One fewer marine cable would be installed, thereby reducing risks or running aground or striking debris.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* Effects on marine navigation would be unchanged under this alternative.	*Similar.* No change would occur to the marine portion of the Project.

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: **Adverse; less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: **Beneficial impact.** A Class IV impact represents a beneficial effect that would result from project implementation.