Exhibit PP: Response to 1.4.18-3
Route Segment Alternatives Screening Matrix Parts A, B, C and D

This exhibit, which has been prepared in response to Item 1.4.18-3, provides a comparison of the environmental features crossed by each of the Pipeline Safety & Reliability Project's (Proposed Project's) Route Segment Alternatives and the environmental features crossed by the corresponding Proposed Project segments. The results of the analysis are presented in a screening matrix, which is intended to facilitate the California Public Utilities Commission's environmental review of the Route Segment Alternatives. To accommodate the large number of Route Segment Alternatives in this analysis, the screening matrix has been divided into the following four tables with the same criteria:

- Table 1: Route Segment Alternatives Screening Matrix Part A,
- Table 2: Route Segment Alternatives Screening Matrix Part B,
- Table 3: Route Segment Alternatives Screening Matrix Part C, and
- Table 4: Route Segment Alternatives Screening Matrix Part D.

Attachment A: Proposed Project Route Segment Alternatives depicts each of the Route Segment Alternatives, as well as each of the preferred Proposed Project segments.

Table 1: Route Segment Alternatives Screening Matrix Part A includes the following Route Segment Alternatives and its corresponding Proposed Project segment:

- Rainbow Route Segment Alternative,
- Rocking Horse Road Route Segment Alternative,
- West Lilac Road Route Segment Alternative,
- Bear Valley Parkway Route Segment Alternative, and
- South Centre City Parkway/Escondido Boulevard Route Segment Alternative.

Table 2: Route Segment Alternatives Screening Matrix Part B includes the following Route Segment Alternatives and its corresponding Proposed Project segment:

- South Centre City Parkway Route Segment Alternative,
- La Verona Route Segment Alternative,
- Lake Hodges Route Segment Alternative,
- El Ku Avenue Route Segment Alternative, and
- Community Road Route Segment Alternative.

Table 3: Route Segment Alternatives Screening Matrix Part C includes the following Route Segment Alternatives and its corresponding Proposed Project segment:

- Scripps Poway Parkway Route Segment Alternative,
- Spring Canyon Road Route Segment Alternative,
- Creek Road Route Segment Alternative,
- Kearny Villa Road Route Segment Alternative, and
- Mission Trails Route Segment Alternative.

Table 4: Route Segment Alternatives Screening Matrix Part D includes the following Route Segment Alternatives and its Proposed Project comparison section:

- Marine Corps Air Station (MCAS)/Mission Trails Route Segment Alternative,
- Clairemont Mesa Road Route Segment Alternative,
- Black Mountain Option – Mira Mesa Route Segment Alternative, and
- Black Mountain Option Route Segment Alternative.

The same methodology that was used for Table 5-1: Alternatives Screening Matrix in Chapter 5 – Discussion of Significant Impacts and Project Alternatives of the Proponent's Environmental Assessment (PEA) was used for this analysis. The data provided in this exhibit was generated using geographic information system (GIS) analysis methods; therefore, there may be minor discrepancies from the descriptions provided in Section 5.2.4 Route Segment Alternatives Considered in Chapter 5 – Discussion of Significant Impacts and Project Alternatives of the PEA, which utilized Google Earth Pro.

Table 1: Route Segment Alternatives Screening Matrix Part A

Criteria	Rainbow Route Segment Alternative	Proposed Project Comparison Section of Rainbow Route Segment Alternative	Rocking Horse Road Route Segment Alternative	Proposed Project Comparison Section of Rocking Horse Road Route Segment Alternative	West Lilac Road Route Segment Alternative	Proposed Project Comparison Section of West Lilac Road Route Segment Alternative	Bear Valley Parkway Route Segment Alternative	Proposed Project Comparison Section of Bear Valley Parkway Route Segment Alterative	South Centre City Parkway/ Escondido Boulevard Route Segment Alternative	Proposed Project Comparison Section of South Centre City Parkway/ Escondido Boulevard Route Segment Alternative
SITE SUITABILITY										
Dimensions/Location (miles)										
Length of line	4.5	3.8	2.2	1.2	3.7	2.6	1.8	0.7	2.8	3.7
Non-Urban areas crossed	4.2	3.8	2.1	1.2	3.7	2.6	0	0	0	0
Urban areas crossed[1]	0.3	0	0.1	0	0	0	1.8	0.7	2.8	3.7
JURISDICTIONAL BOUNDARIES										
Land Ownership (miles)										
Federal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
United States (U.S.) Bureau of Indian Affairs (BIA)	0	0	0	0	0	0	0	0	0	0
U.S. Department of Defense (DoD)	0	0	0	0	0	0	0	0	0	0
U.S. Bureau of Land Management (BLM)	0	0	0	0	0	0	0	0	0	0
U.S. Fish and Wildlife Service (USFWS)	0	0	0	0	0	0	0	0	0	0
U.S. Forest Service (USFS)	0	0	0	0	0	0	0	0	0	0
U.S. Bureau of Reclamation	0	0	0	0	0	0	0	0	0	0
State	**0.3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
California Department of Fish and Wildlife (CDFW)	0	0	0	0	0	0	0	0	0	0
California Department of Parks and Recreation (DPR)	0	0	0	0	0	0	0	0	0	0
California State Lands Commission (CSLC)	0.3	0	0	0	0	0	0	0	0	0
University of California	0	0	0	0	0	0	0	0	0	0
Private[2]	4.2	3.8	2.2	1.2	3.7	2.6	1.8	0.7	2.4	<3.7

[1] The urban areas that would be crossed were identified using the California Department of Transportation's (Caltrans's) "2010 Adjusted Urban areas" GIS data and may include undeveloped lands.
[2] Mileage does not include where the pipeline would likely be located in franchises and roads, but only where it would cross private property. "Private" is assumed to be land that is not federally, state, or locally owned.

Criteria	Rainbow Route Segment Alternative	Proposed Project Comparison Section of Rainbow Route Segment Alternative	Rocking Horse Road Route Segment Alternative	Proposed Project Comparison Section of Rocking Horse Road Route Segment Alternative	West Lilac Road Route Segment Alternative	Proposed Project Comparison Section of West Lilac Road Route Segment Alternative	Bear Valley Parkway Route Segment Alternative	Proposed Project Comparison Section of Bear Valley Parkway Route Segment Alterative	South Centre City Parkway/ Escondido Boulevard Route Segment Alternative	Proposed Project Comparison Section of South Centre City Parkway/ Escondido Boulevard Route Segment Alternative
Number of Local Jurisdictions										
Counties	2	2	1	1	1	1	1	1	1	1
Cities	1	0	0	0	0	0	1	1	2	2
Number of Infrastructure Crossings										
Rivers and streams	6	4	0	0	3	1	2	0	2	1
Man-made waterways[3]	0	0	0	0	1	0	0	0	0	0
Major highways	1	1	1	1	1	1	1	0	0	0
Railroads	0	0	0	0	0	0	0	0	0	0
PROJECT OBJECTIVES COMPATIBILITY										
Implement pipeline safety requirements for existing Line 1600 and modernize the system with state-of-the-art materials as soon as practicable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improve system reliability and resiliency by minimizing dependence on a single pipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhance operational flexibility to manage stress conditions by increasing system capacity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FEASIBILITY										
Able to be permitted and constructed in a reasonable period of time[4]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relative cost compared to the Proposed Project[5]	Slightly Higher	Not Applicable (N/A)	Slightly Higher	N/A	Slightly Higher	N/A	Similar	N/A	Similar	N/A

[3] Man-made waterways include canals, ditches, water pipelines, and underground conduit.
[4] This criterion assumes landowner approval and land access requirements can be met.
[5] The following criteria were used to assign the relative cost of alternatives compared to the Proposed Project: Similar (up to 50-percent cost increase); Slightly Higher (50- to 100-percent cost increase); Higher (100- to 200-percent cost increase); and Much Higher (more than 200-percent cost increase).

Criteria	Rainbow Route Segment Alternative	Proposed Project Comparison Section of Rainbow Route Segment Alternative	Rocking Horse Road Route Segment Alternative	Proposed Project Comparison Section of Rocking Horse Road Route Segment Alternative	West Lilac Road Route Segment Alternative	Proposed Project Comparison Section of West Lilac Road Route Segment Alternative	Bear Valley Parkway Route Segment Alternative	Proposed Project Comparison Section of Bear Valley Parkway Route Segment Alterative	South Centre City Parkway/ Escondido Boulevard Route Segment Alternative	Proposed Project Comparison Section of South Centre City Parkway/ Escondido Boulevard Route Segment Alternative
Avoids lands that have legal protections that may prohibit or substantially limit the feasibility of permitting[6]	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Known conservation easements crossed (miles)	0.2	0.2	0	0	0	0	0	0	0.1	< 0.1
BLM Areas of Critical Environmental Concern Crossed (miles)	0.3	0	0	0	0	0	0	0	0	0
Able to meet technological requirements, considering available technology and the construction, operation, and maintenance or spacing requirements of multiple facilities using common rights-of-way (ROWs)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENVIRONMENTAL CONSTRAINTS										
Biological Sensitivity										
USFWS critical habitat crossed[7] (miles)	3.5	1.6	1.6	1.0	1.3	2.2	0	0	0.1	0
Number of California Natural Diversity Database (CNDDB) records within one mile	17	15	7	5	12	11	21	21	37	41
Number of unique species reported in CNDDB within one mile	8	8	3	2	6	6	17	17	21	21
Cultural sensitivity[8]	Low	Medium	Low	Low	Low	Low	Low	Low	Low	Medium
Protected parks and forests[9] crossed (miles)	0	0	0	0	0	0	0	0	0.4	0.1
Designated scenic roads within 0.5 mile	0	0	0	0	0	0	0	0	0	0
Potential for encountering hazardous material based on known hazardous contamination within 0.25 mile[10]	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

[6] Lands with legal protections that may prohibit or substantially limit the feasibility of permitting include known conservation easements, BLM Areas of Critical Environmental Concern, and Mission Trails Regional Park.
[7] USFWS critical habitat includes all critical habitat designated for various species by the USFWS.
[8] Cultural sensitivity was determined based on the number of known cultural resource sites intersected by the route, taking into account the percentage of the route that was covered by available records.
[9] Protected parks and forests include those managed by federal, state, and local agencies.
[10] Hazard potential was determined by the number of existing hazardous sites within 0.25 mile of each alternative. The following criteria was used: Low (zero to 20); Medium (21 to 40); and High (41 to 60+).

Criteria	Rainbow Route Segment Alternative	Proposed Project Comparison Section of Rainbow Route Segment Alternative	Rocking Horse Road Route Segment Alternative	Proposed Project Comparison Section of Rocking Horse Road Route Segment Alternative	West Lilac Road Route Segment Alternative	Proposed Project Comparison Section of West Lilac Road Route Segment Alternative	Bear Valley Parkway Route Segment Alternative	Proposed Project Comparison Section of Bear Valley Parkway Route Segment Alterative	South Centre City Parkway/ Escondido Boulevard Route Segment Alternative	Proposed Project Comparison Section of South Centre City Parkway/ Escondido Boulevard Route Segment Alternative
Reasons the Route Segment Alternative was not selected as the preferred route segment	Constructability concerns and potential impacts to biological and soil resources	N/A	Constructability concerns	N/A	Constructability concerns; potential impacts to agricultural resources and residents	N/A	Constructability concerns	N/A	Constructability concerns and likely displacement of residences	N/A

Table 2: Route Segment Alternatives Screening Matrix Part B

Criteria	South Centre City Parkway Route Segment Alternative[11]	Proposed Project Comparison Section of South Centre City Parkway Route Segment Alternative	La Verona Route Segment Alternative[12]	Proposed Project Comparison Section of La Verona Route Segment Alternative	Lake Hodges Route Segment Alternative	Proposed Project Comparison Section of Lake Hodges Route Segment Alternative	El Ku Avenue Route Segment Alternative[13]	Proposed Project Comparison Section of El Ku Avenue Route Segment Alternative	Community Road Route Segment Alternative	Proposed Project Comparison Section of Community Road Route Segment Alternative
SITE SUITABILITY										
Dimensions/Location (miles)										
Length of line	3	3.7	2.9	3.7	12.3	11.4	2.8	3.7	6.8	5.5
Non-urban areas crossed	0	0	0.1	0	0.5	0.9	0	0	0.2	0
Urban areas crossed[14]	3	3.7	2.8	3.7	11.8	10.5	2.8	3.7	6.6	5.5
JURISDICTIONAL BOUNDARIES										
Land Ownership (miles)										
Federal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
BIA	0	0	0	0	0	0	0	0	0	0
DoD	0	0	0	0	0	0	0	0	0	0
BLM	0	0	0	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0	0	0	0
USFS	0	0	0	0	0	0	0	0	0	0
U.S. Bureau of Reclamation	0	0	0	0	0	0	0	0	0	0
State	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CDFW	0	0	0	0	0	0	0	0	0	0
California DPR	0	0	0	0	0	0	0	0	0	0
CSLC	0	0	0	0	0	0	0	0	0	0
University of California	0	0	0	0	0	0	0	0	0	0
Private[15]	2.6	< 3.7	2.3	< 3.7	8	10.3	2.3	< 3.7	6.4	5.5
Number of Local Jurisdictions										
Counties	1	1	1	1	1	1	1	1	1	1

[11] For the purposes of this analysis, South Centre City Parkway Route Segment Alternative has been combined with a section of the South Centre City Parkway/Escondido Boulevard Route Segment Alternative.
[12] For the purposes of this analysis, La Verona Route Segment Alternative has been combined with a section of the South Centre City Parkway/Escondido Boulevard Route Segment Alternative.
[13] For the purposes of this analysis, El Ku Avenue Route Segment Alternative has been combined with a section of the South Centre City Parkway/Escondido Boulevard Route Segment Alternative.
[14] The urban areas that would be crossed were identified using the California Department of Transportation's (Caltrans's). "2010 Adjusted Urban areas" GIS data and may include undeveloped lands.
[15] Mileage does not include where the pipeline would likely be located in franchises and roads, but only where it would cross private property. "Private" is assumed to be land that is not federally, state, or locally owned.

Criteria	South Centre City Parkway Route Segment Alternative[11]	Proposed Project Comparison Section of South Centre City Parkway Route Segment Alternative	La Verona Route Segment Alternative[12]	Proposed Project Comparison Section of La Verona Route Segment Alternative	Lake Hodges Route Segment Alternative	Proposed Project Comparison Section of Lake Hodges Route Segment Alternative	El Ku Avenue Route Segment Alternative[13]	Proposed Project Comparison Section of El Ku Avenue Route Segment Alternative	Community Road Route Segment Alternative	Proposed Project Comparison Section of Community Road Route Segment Alternative
Cities	2	2	2	2	3	2	2	2	2	2
Number of Infrastructure Crossings										
Rivers and streams	2	1	3	1	9	8	2	1	5	7
Man-made waterways[16]	0	0	0	0	1	0	0	0	0	0
Major highways	1	0	0	0	3	1	0	0	0	0
Railroads	0	0	0	0	1	0	0	0	0	0
PROJECT OBJECTIVES COMPATIBILITY										
Implement pipeline safety requirements for existing Line 1600 and modernize the system with state-of-the-art materials as soon as practicable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improve system reliability and resiliency by minimizing dependence on a single pipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhance operational flexibility to manage stress conditions by increasing system capacity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FEASIBILITY										
Able to be permitted and constructed in a reasonable period of time[17]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relative cost compared to the Proposed Project[18]	Similar	N/A	Similar	N/A	Higher	N/A	Similar	N/A	Slightly Higher	N/A
Avoids lands that have legal protections that may prohibit or substantially limit the feasibility of permitting[19]	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Known conservation easements crossed (miles)	0.1	< 0.1	0.4	< 0.1	4.2	0.5	0.2	< 0.1	0.7	0
BLM Areas of Critical Environmental Concern Crossed (miles)	0	0	0	0	0	0	0	0	0	0

[16] Man-made waterways include canals, ditches, water pipelines, and underground conduit.
[17] This criterion assumes landowner approval and land access requirements can be met.
[18] The following criteria were used to assign the relative cost of alternatives compared to the Proposed Project: Similar (up to 50-percent cost increase); Slightly Higher (50- to 100-percent cost increase); Higher (100- to 200-percent cost increase); and Much Higher (more than 200-percent cost increase).
[19] Lands with legal protections that may prohibit or substantially limit the feasibility of permitting include known conservation easements, BLM Areas of Critical Environmental Concern, and Mission Trails Regional Park.

Criteria	South Centre City Parkway Route Segment Alternative[11]	Proposed Project Comparison Section of South Centre City Parkway Route Segment Alternative	La Verona Route Segment Alternative[12]	Proposed Project Comparison Section of La Verona Route Segment Alternative	Lake Hodges Route Segment Alternative	Proposed Project Comparison Section of Lake Hodges Route Segment Alternative	El Ku Avenue Route Segment Alternative[13]	Proposed Project Comparison Section of El Ku Avenue Route Segment Alternative	Community Road Route Segment Alternative	Proposed Project Comparison Section of Community Road Route Segment Alternative
Able to meet technological requirements, considering available technology and the construction, operation, and maintenance or spacing requirements of multiple facilities using common ROWs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENVIRONMENTAL CONSTRAINTS										
Biological Sensitivity										
USFWS critical habitat crossed[20] (miles)	0.1	0	0.4	0	0.1	0	0.2	0	0	0
Number of CNDDB records within one mile	37	40	37	42	52	52	52	40	47	42
Number of unique species reported in CNDDB within one mile	21	21	21	21	22	24	22	21	23	23
Cultural sensitivity[21]	Low	Medium	Medium	Medium	High	High	Low	Medium	Low	Low
Protected parks and forests[22] crossed (miles)	0.4	< 0.1	0.6	< 0.1	4.2	1.1	0.5	< 0.1	0.4	0
Designated scenic roads within 0.5 mile	0	0	0	0	0	0	0	0	0	0
Potential for encountering hazardous material based on known hazardous contamination within 0.25 mile[23]	Low	Low	Low	Low	Low	Low	Low	Low	Medium	Medium
Reasons the Route Segment Alternative was not selected as the preferred route segment	Constructability concerns	N/A	Constructability concerns (narrow street, existing utilities, and close proximity to residents)	N/A	Horizontal directional drill methods to cross Lake Hodges infeasible; impacts to hydrologic resources	N/A	Constructability concerns (narrow street, close proximity to residents, potential displacement of residents)	N/A	Potential impacts to residences, recreation, and biological resources	N/A

[20] USFWS critical habitat includes all critical habitat designated for various species by the USFWS.
[21] Cultural sensitivity was determined based on the number of known cultural resource sites intersected by the route, taking into account the percentage of the route that was covered by available records.
[22] Protected parks and forests include those managed by federal, state, and local agencies.
[23] Hazard potential was determined by the number of existing hazardous sites within 0.25 mile of each alternative. The following criteria was used: Low (zero to 20); Medium (21 to 40); and High (41 to 60+).

Table 3: Route Segment Alternatives Screening Matrix Part C

Criteria	Scripps Poway Parkway Route Segment Alternative	Proposed Project Comparison Section of Scripps Poway Parkway Route Segment Alternative	Spring Canyon Road Route Segment Alternative[24]	Proposed Project Comparison Section of Spring Canyon Road Route Segment Alternative	Creek Road Route Segment Alternative[25]	Proposed Project Comparison Section of Creek Road Route Segment Alternative	Kearny Villa Road Route Segment Alternative	Proposed Project Comparison Section of Kearny Villa Road Route Segment Alternative	Mission Trails Route Segment Alternative	Proposed Project Comparison Section of Mission Trails Route Segment Alternative
SITE SUITABILITY										
Dimensions/Location (miles)										
Length of line	13	7.9	8.9	6.7	5.3	5.2	6.3	3.4	4.2	0.4
Non-urban areas crossed	4.7	0	5.3	0	2.8	0	0	0	0	0
Urban areas crossed[26]	8.3	7.9	3.6	6.7	2.5	5.2	6.3	3.4	4.2	0.4
JURISDICTIONAL BOUNDARIES										
Land Ownership (miles)										
Federal	**1.7**	**2.6**	**4.9**	**2.6**	**3.6**	**1.3**	**1.9**	**2.4**	**1.1**	**0.2**
BIA	0	0	0	0	0	0	0	0	0	0
DoD	1.7	2.6	4.9	2.6	3.6	1.3	1.9	2.4	1.1	0.2
BLM	0	0	0	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0	0	0	0
USFS	0	0	0	0	0	0	0	0	0	0
U.S. Bureau of Reclamation	0	0	0	0	0	0	0	0	0	0
State	**1.2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CDFW	1.2	0	0	0	0	0	0	0	0	0
California DPR	0	0	0	0	0	0	0	0	0	0
CSLC	0	0	0	0	0	0	0	0	0	0
University of California	0	0	0	0	0	0	0	0	0	0
Private[27]	10.1	5.3	1.9	4.1	1.7	3.9	4.4	1	0.6	0.2
Number of Local Jurisdictions										
Counties	1	1	1	1	1	1	1	1	1	1

[24] For the purposes of this analysis, Spring Canyon Road Route Segment Alternative has been combined with a section of the Mission Trails Route Segment Alternative.
[25] For the purposes of this analysis, Creek Road Route Segment Alternative has been combined with a section of the Spring Canyon Road Route Segment Alternative.
[26] The urban areas that would be crossed were identified using Caltrans's GIS data and were not field-verified "2010 Adjusted Urban areas" GIS data and may include undeveloped lands.
[27] Mileage does not include where the pipeline would likely be located in franchises and roads, but only where it would cross private property.

Criteria	Scripps Poway Parkway Route Segment Alternative	Proposed Project Comparison Section of Scripps Poway Parkway Route Segment Alternative	Spring Canyon Road Route Segment Alternative[24]	Proposed Project Comparison Section of Spring Canyon Road Route Segment Alternative	Creek Road Route Segment Alternative[25]	Proposed Project Comparison Section of Creek Road Route Segment Alternative	Kearny Villa Road Route Segment Alternative	Proposed Project Comparison Section of Kearny Villa Road Route Segment Alternative	Mission Trails Route Segment Alternative	Proposed Project Comparison Section of Mission Trails Route Segment Alternative
Cities	3	2	1	1	1	1	1	1	1	1
Number of Infrastructure Crossings										
Rivers and streams	11	12	4	11	6	8	7	9	8	1
Man-made waterways[28]	1	4	0	4	0	2	0	3	0	1
Major highways	0	0	0	0	0	0	4	0	0	0
Railroads	0	0	0	0	0	0	0	0	0	0
PROJECT OBJECTIVES COMPATIBILITY										
Implement pipeline safety requirements for existing Line 1600 and modernize the system with state-of-the-art materials as soon as practicable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improve system reliability and resiliency by minimizing dependence on a single pipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhance operational flexibility to manage stress conditions by increasing system capacity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FEASIBILITY										
Able to be permitted and constructed in a reasonable period of time[29]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relative cost compared to the Proposed Project[30]	Much Higher	N/A	Higher	N/A	Higher	N/A	Much Higher	N/A	Much Higher	N/A
Avoids lands that have legal protections that may prohibit or substantially limit the feasibility of permitting	No	Yes	No	Yes	No	Yes	Yes	No	No	Yes
Known conservation easements crossed (miles)	1.2	0.5	3	0.5	0.9	0.5	0	0.3	2.9	0
BLM Areas of Critical Environmental Concern Crossed (miles)	0	0	0	0	0	0	0	0	0	0

[28] Man-made waterways include canals, ditches, water pipelines, and underground conduit.
[29] This criterion assumes landowner approval and land access requirements can be met.
[30] The following criteria were used to assign the relative cost of alternatives compared to the Proposed Project: Similar (up to 50-percent cost increase); Slightly Higher (50- to 100-percent cost increase); Higher (100- to 200-percent cost increase); and Much Higher (more than 200-percent cost increase).

Criteria	Scripps Poway Parkway Route Segment Alternative	Proposed Project Comparison Section of Scripps Poway Parkway Route Segment Alternative	Spring Canyon Road Route Segment Alternative[24]	Proposed Project Comparison Section of Spring Canyon Road Route Segment Alternative	Creek Road Route Segment Alternative[25]	Proposed Project Comparison Section of Creek Road Route Segment Alternative	Kearny Villa Road Route Segment Alternative	Proposed Project Comparison Section of Kearny Villa Road Route Segment Alternative	Mission Trails Route Segment Alternative	Proposed Project Comparison Section of Mission Trails Route Segment Alternative
Able to meet technological requirements, considering available technology and the construction, operation, and maintenance or spacing requirements of multiple facilities using common ROWs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENVIRONMENTAL CONSTRAINTS										
Biological Sensitivity										
USFWS critical habitat crossed[31] (miles)	1.8	0	0.7	0	0	0	0.2	0	0.7	0
Number of CNDDB records within one mile	115	97	114	101	86	72	117	79	89	44
Number of unique species reported in CNDDB within one mile	38	30	21	30	20	25	28	23	29	21
Cultural sensitivity[32]	High	High	Medium	Medium	Low	Low	Low	Low	Medium	Low
Protected parks and forests[33] crossed (miles)	1.2	< 0.1	2.1	< 0.1	0	< 0.1	0	0	2.5	0
Designated scenic roads within 0.5 mile	0	0	0	0	0	0	0	0	0	0
Potential for encountering hazardous material based on known hazardous contamination within 0.25 mile[34]	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Reasons the Route Segment Alternative was not selected as the preferred route segment	Permitting constraints due to travel within a preserve; potential impacts to biological resources	N/A	Potential impacts to biological resources and recreation	N/A	Additional impacts to biological resources; additional travel within MCAS Miramar	N/A	Potential impacts to vernal pools; potential impacts to traffic	N/A	Potential impacts to biological resources and recreation	N/A

[31] USFWS critical habitat includes all critical habitat designated for various species by the USFWS.
[32] Cultural sensitivity was determined based on the number of known cultural resource sites intersected by the route, taking into account the percentage of the route that was covered by available records.
[33] Protected parks and forests include those managed by federal, state, and local agencies.
[34] Hazard potential was determined by the number of existing hazardous sites within 0.25 mile of each alternative. The following criteria was used: Low (zero to 20); Medium (21 to 40); and High (41 to 60+).

Table 4: Route Segment Alternatives Screening Matrix Part D

Criteria	MCAS/Mission Trails Route Segment Alternative[35]	Proposed Project Comparison Section of MCAS/Mission Trails Route Segment Alternative	Clairemont Mesa Road Route Segment Alternative	Proposed Project Comparison Section of Clairemont Mesa Route Segment Alternative	Black Mountain Option – Mira Mesa Route Segment Alternative	Proposed Project Comparison Section of Black Mountain Option – Mira Mesa Route Segment Alternative	Black Mountain Option Route Segment Alternative	Proposed Project Comparison Section of Black Mountain Option Route Segment Alternative
SITE SUITABILITY								
Dimensions/Location (miles)								
Length of line	10.7	3.8	10.2	1.5	12.9	9.9	13.1	10.2
Non-urban areas crossed	0	0	0	0	0	0	0	0
Urban areas crossed[36]	10.7	3.8	10.2	1.5	12.9	9.9	13.1	10.2
JURISDICTIONAL BOUNDARIES								
Land Ownership (miles)								
Federal	**2**	**2.5**	**1**	**1.3**	**0**	**> 0**	**0**	**> 0**
BIA	0	0	0	0	0	0	0	0
DoD	2	2.5	1	1.3	0	> 0	0	> 0
BLM	0	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0	0
USFS	0	0	0	0	0	0	0	0
U.S. Bureau of Reclamation	0	0	0	0	0	0	0	0
State	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CDFW	0	0	0	0	0	0	0	0
California DPR	0	0	0	0	0	0	0	0
CSLC	0	0	0	0	0	0	0	0
University of California	0	0	0	0	0	0	0	0
Private[37]	5.7	1.3	6.5	0.2	12.7	9.8	12.9	10.1
Number of Local Jurisdictions								
Counties	1	1	1	1	1	1	1	1
Cities	1	1	1	1	1	2	1	2

[35] For the purposes of this analysis, MCAS/Mission Trails Route Segment Alternative has been combined with a section of the Kearny Villa Road Route Segment Alternative.
[36] The urban areas that would be crossed were identified using Caltrans's "2010 Adjusted Urban areas" GIS data and may include undeveloped lands.
[37] Mileage does not include where the pipeline would likely be located in franchises and roads, but only where it would cross private property.

Criteria	MCAS/Mission Trails Route Segment Alternative[35]	Proposed Project Comparison Section of MCAS/Mission Trails Route Segment Alternative	Clairemont Mesa Road Route Segment Alternative	Proposed Project Comparison Section of Clairemont Mesa Route Segment Alternative	Black Mountain Option – Mira Mesa Route Segment Alternative	Proposed Project Comparison Section of Black Mountain Option – Mira Mesa Route Segment Alternative	Black Mountain Option Route Segment Alternative	Proposed Project Comparison Section of Black Mountain Option Route Segment Alternative
Number of Infrastructure Crossings								
Rivers and streams	15	10	8	4	11	9	10	9
Man-made waterways[38]	1	3	1	2	1	1	2	1
Major highways	4	0	4	0	2	0	2	0
Railroads	0	0	0	0	0	0	0	0
PROJECT OBJECTIVES COMPATIBILITY								
Implement pipeline safety requirements for existing Line 1600 and modernize the system with state-of-the-art materials as soon as practicable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improve system reliability and resiliency by minimizing dependence on a single pipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhance operational flexibility to manage stress conditions by increasing system capacity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FEASIBILITY								
Able to be permitted and constructed in a reasonable period of time[39]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relative cost compared to the Proposed Project[40]	Much Higher	N/A	Much Higher	N/A	Similar	N/A	Similar	N/A
Avoids lands that have legal protections that may prohibit or substantially limit the feasibility of permitting	No	Yes	No	Yes	No	Yes	No	Yes
Known conservation easements crossed (miles)	3.8	0.3	3.3	0	0.2	0.1	0.2	0.1
BLM Areas of Critical Environmental Concern Crossed (miles)	0	0	0	0	0	0	0	0
Able to meet technological requirements, considering available technology and the construction, operation, and maintenance or spacing requirements of multiple facilities using common ROWs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

[38] Man-made waterways include canals, ditches, water pipelines, and underground conduit.
[39] This criterion assumes landowner approval and land access requirements can be met.
[40] The following criteria were used to assign the relative cost of alternatives compared to the Proposed Project: Similar (up to 50-percent cost increase); Slightly Higher (50- to 100-percent cost increase); Higher (100- to 200-percent cost increase); and Much Higher (more than 200-percent cost increase).

Criteria	MCAS/Mission Trails Route Segment Alternative[35]	Proposed Project Comparison Section of MCAS/Mission Trails Route Segment Alternative	Clairemont Mesa Road Route Segment Alternative	Proposed Project Comparison Section of Clairemont Mesa Route Segment Alternative	Black Mountain Option – Mira Mesa Route Segment Alternative	Proposed Project Comparison Section of Black Mountain Option – Mira Mesa Route Segment Alternative	Black Mountain Option Route Segment Alternative	Proposed Project Comparison Section of Black Mountain Option Route Segment Alternative
ENVIRONMENTAL CONSTRAINTS								
Biological Sensitivity								
USFWS critical habitat crossed[41] (miles)	0.9	0	1.8	0	0	0	0	0
Number of CNDDB records within one mile	215	86	194	67	128	71	143	75
Number of unique species reported in CNDDB within one mile	41	26	48	23	37	31	40	32
Cultural sensitivity[42]	Medium	Medium	Medium	Low	Low	High	Low	High
Protected parks and forests[43] crossed (miles)	3	0	2.7	0	0.2	< 0.1	0.2	< 0.1
Designated scenic roads within 0.5 mile	0	0	0	0	0	0	0	0
Potential for encountering hazardous material based on known hazardous contamination within 0.25 mile[44]	Low	Low	Low	Low	Low	Medium	Low	Medium
Reasons the Route Segment Alternative was not selected as the preferred route segment	Potential impacts to biological resources and recreation	N/A	Potential impacts to residences, recreation, and biological resources	N/A	Potential impacts to traffic and residences	N/A	Potential impacts to traffic and residences	N/A

[41] USFWS critical habitat includes all critical habitat designated for various species by the USFWS.
[42] Cultural sensitivity was determined based on the number of known cultural resource sites intersected by the route, taking into account the percentage of the route that was covered by available records.
[43] Protected parks and forests include those managed by federal, state, and local agencies.
[44] Hazard potential was determined by the number of existing hazardous sites within 0.25 mile of each alternative. The following criteria was used: Low (zero to 20); Medium (21 to 40); and High (41 to 60+).

ATTACHMENT A: PROPOSED PROJECT ROUTE SEGMENT ALTERNATIVES