

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of )	
San Diego Gas & Electric Company )	Application No. 06-08-010
(U 902-E) for a Certificate Of Public )	(Filed August 4, 2006)
Convenience & Necessity )	
for the Sunrise Powerlink )	Application No. 05-12-014
Transmission )	(Filed December 14, 2005)
Project )	

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**RANCHO PEÑASQUITOS CONCERNED CITIZENS' SCOPING COMMENTS**

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## I. INTRODUCTION

Rancho Penasquitos Concerned Citizens (“RPCC”), a recognized intervenor within the Sunrise Powerlink CPCN proceeding, respectfully submits the following alternatives to the coastal link portion of the project and requests these alternatives be carried forward for full analysis and included within the EIR/EIS. RPCC’s alternatives are separated below between:

- (1) Transmission upgrades to SDG&E’s system that would avoid the need for a 230 kV line to be built between Sycamore Canyon substation and Penasquitos substation;
- (2) Alternative routes that reduce impacts as compared to the proposed project; and
- (3) Minor routing adjustments within the preferred route that reduce impacts.

SDG&E proposes to build a new 230 kV single circuit transmission line between the Sycamore Canyon substation and the Penasquitos substation. This 13.6 mile line would stretch through the heart of the suburban communities of Scripps Ranch Villages and Rancho Penasquitos, before affecting the communities of Del Mar Mesa, Carmel Valley and Torrey Hills.<sup>1</sup>

## II. TRANSMISSION UPGRADES

SDG&E proposes a project that includes a new transmission line from the Sycamore Canyon substation to the Penasquitos substation. The purpose of this transmission line is to mitigate the overloads that would otherwise occur on some of the transformers at the Sycamore Canyon substation and on some of the transmission lines that terminate at the substation, due to the introduction of two new 230 kV transmission lines carrying approximately 1000MW of new electricity into the San Diego load center. The new transmission line to Penasquitos substation is not needed to serve the San Diego load center. Sycamore Canyon substation is well connected with SDG&E’s transmission system in order to serve load, and alternative upgrades to SDG&E’s transmission system, without building a new transmission line, meet the project’s objectives, are feasible and substantially lessen the environmental impacts of this project through suburban San Diego. Lastly, these alternatives are more economical.<sup>2</sup>

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<sup>1</sup> RPCC’s focus on the coastal link should not be considered an endorsement of the project as a whole. In fact, the opposite is true. RPCC set forth the issues it believes should be considered by the CPUC as alternatives to the project as a whole at the scoping hearing in Rancho Penasquitos. Further, in order to avoid duplication with other parties, as directed by the CPUC, RPCC is focusing on the coastal link given its understanding other intervenors and active parties will be providing additional scoping comments to the project as a whole.

<sup>2</sup> RPCC is aware that the EIR/EIS does not consider economic considerations.

SDG&E has selected the most expensive, environmentally damaging option to mitigate the effects of the influx of electricity into Sycamore Canyon substation. Power flow analysis, using data from SDG&E, shows the following upgrades can correct the overloads seen within SDG&E's system after the introduction of the two additional 230 kV lines into Sycamore Canyon substation<sup>3</sup>:

- (1) Place reactors in series with the three overloaded transformers (two 230/69 kV and one 230/138 kV transformer) at Sycamore Canyon substation, and add a 230/69 kV transformer at Miguel substation; or
- (2) Add a 230/138 kV transformer and a 230/69 kV transformer at Sycamore Canyon substation, and add a 230/69 kV transformer at Miguel substation; or
- (3) Loop in one or both of the Mission - Miguel 230 kV lines into the Sycamore Canyon substation, and add a 230/69 kV transformer at Miguel substation.

The idea of building transmission upgrades, as compared to a new transmission line from Sycamore Canyon substation to Penasquitos substation, is an idea that the California Independent System Operator (CAISO) itself set forth in a report that studied what has, in essence, become the Sunrise project. This report can be found at <http://www.caiso.com/docs/2003/09/26/2003092614511116962.pdf>. A hard copy is also attached as Exhibit 1. Page 9 of this report describes the mitigation required with the introduction of the two 230 kV lines into Sycamore Canyon substation. Option two within the CAISO report is similar to RPCC's option two above.

The CAISO report, per the date contained in the web address, is September 2003. Since then, multiple upgrades to SDG&E's transmission system have taken place including Mission - Miguel #2 and the Otay Mesa Power Purchase Agreement (OMPPA) transmission upgrades. The 138 kV Sycamore Canyon to Carlton Hills Tap and Sycamore Canyon to Chicarita upgrades described in the CAISO report were added (at least in part) and approved within the OMPPA CPCN proceeding. Power flows provided by SDG&E already have the 138 kV upgrades included into SDG&E's system. Except for overloading on the 230/69 kV transformers at Miguel substation, the other upgrades recommended in the CAISO report for Miguel are not showing up as problems in the current power flow analysis.<sup>4</sup>

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<sup>3</sup> The power flow analysis was conducted by RPCC's transmission expert, William Stephenson (23 years of experience in transmission planning for PG&E). The alternatives are presented in order of anticipated cost (from lowest to highest).

<sup>4</sup> Not only does SDG&E propose to build a new transmission line between Sycamore Canyon substation and Penasquitos substation, SDG&E also proposes to build additional transmission upgrades in order to mitigate the effects of the project into Sycamore Canyon. Unless otherwise noted, the transmission upgrade alternatives proposed by RPCC also incorporate these upgrades. Not building a new transmission line would also have the benefit of eliminating Penasquitos substation upgrades, including a new transformer.

## **A. Project Objectives**

All three of the proposed alternative transmission upgrades meet each of the project objectives.

## **B. Feasibility**

All three of the proposed alternative transmission upgrades are technically feasible and otherwise fit within the framework of the types of facilities the CPUC can approve as part of the proposed project. The third alternative (loop in one or both of the Mission - Miguel 230 kV lines would involve work within the boundaries of MCAS Miramar. Presumably the new towers and circuit(s) would be constructed in the existing ROW that includes a 230 kV circuit leading to Fanita Junction, where the Mission - Miguel lines run. Since the CPUC is familiar with MCAS Miramar restrictions in relation to the recent construction of the Mission Miguel #2 transmission line a few years ago, the feasibility issue of this alternative can be easily explored.

## **C. Environmental Impacts**

(1) Place reactors in series with the three overloaded transformers (two 230/69 kV and one 230/138 kV transformer) at Sycamore Canyon substation, and add a 230/69 kV transformer at Miguel substation.

This alternative substantially lessens the environmental effects of the proposed project because it eliminates the need to build a new 13.6 mile long transmission line. This alternative would add new equipment within the substation boundaries at Sycamore Canyon substation and Miguel substation. The environmental effects of installing new equipment within the substation boundaries are expected to be insignificant. On the other hand, the effects of a new 13.6 mile transmission line through suburban San Diego are tremendous. By not building a new transmission line, the following expected and potential impacts would be reduced or eliminated:

### a. Aesthetics/Visual

46 new tubular steel poles over 100 feet in height would be eliminated, maintaining the status quo on the less obtrusive H-frame structures currently in place that the tubular poles would replace.

### b. Air Quality

Air quality would suffer during the construction of 13.6 miles of overhead and underground transmission facilities. In comparison, the installation of substation upgrades would have a less than significant air quality impact.

c. Biological

Construction activities are expected to cause both temporary and permanent loss of native habitat and wildlife; disturb wildlife and loss of sensitive plant species. In comparison, the installation of substation upgrades would have less than a significant, if any, impact on biological resources.

d. Cultural & Paleontological

The underground portion of the preferred route could damage resources of unknown significance. In comparison, the installation of substation upgrades would have no impact on Cultural & Paleontological resources.

e. Geology and Soils

The undergrounding of the project could cause soil erosion in steeply graded areas (Rancho Penasquitos Blvd) and increased sedimentation of the creeks the project will be forced to cross. In comparison, the installation of substation upgrades would have no impact on Geology and Soils resources.

f. Hazards and Hazardous Materials

Construction of the transmission line could cause potential leaking or spilling of petroleum or hydraulic fluids from construction equipment. This potential would be especially problematic near Rancho Penasquitos Blvd (underground through a riparian area) and the underground portion through the Los Penasquitos Canyon Preserve because both of these areas are near creeks/streams. In comparison, the installation of substation upgrades would have less of an impact on the environment with potential use of hazardous materials within the substation boundaries.

g. Hydrology and Water Quality

Construction of the transmission line could cause potential contaminants to enter the sewer system or creeks/stream and otherwise cause increased sedimentation of the creek near Rancho Penasquitos Blvd and the stream within the Los Penasquitos Canyon Preserve. In comparison, the installation of substation upgrades would have no impact on Hydrology and Water Quality resources.

h. Land Use

Construction of the transmission line, especially within the Los Penasquitos Canyon Preserve would cause a temporary disturbance to the use of the land and would place permanent structures within a preserve. The users of the preserve in proximity to the underground line (scheduled to run under a trail for portions of the route through the preserve) would be exposed to high EMF levels. In comparison, the installation of substation upgrades would have no impact on Land Use issues.

i. Noise

During construction, noise generated by construction equipment would create a nuisance to nearby residences, park users and wildlife. Corona noise generated by an additional 230 kV circuit would be present constantly. In comparison, the installation of substation upgrades is expected to have temporary impact during construction and no or very little impact on increased noise levels following construction.

j. Recreational Resources

Recreational users of the Los Penasquitos Canyon Preserve would be impacted during construction. In comparison, the installation of substation upgrades would have no impact on Recreational resources.

k. Transportation and Traffic

During construction, construction traffic impacts are expected on Ranch Penasquitos Boulevard, Black Mountain Road and Park Village Road. In comparison, the installation of substation upgrades would have no impact on Transportation and Traffic resources.

(2) Add a 230/138 kV transformer and a 230/69 kV transformer at Sycamore Canyon substation, and add a 230/69 kV transformer at Miguel substation.

By not building a new transmission line, the anticipated and potential impacts that would be reduced or eliminated are the same as the first transmission upgrade alternative.

(3) Loop in one or both of the Mission - Miguel lines into the Sycamore Canyon substation, and add a 230/69kV transformer at Miguel substation.

This alternative substantially lessens the environmental effects of the proposed project because it eliminates the need to build a new 13.6 mile long transmission line. Instead, approximately three miles of new overhead 230 kV transmission line(s) are necessary, all within MCAS Miramar land and presumably within an SDG&E existing ROW. This alternative would also add new equipment within the substation boundary at Miguel. The environmental effects of installing approximately three miles of new overhead circuit(s), in comparison to 13.6 miles of new overhead and underground circuit, is expected to be significantly less than the proposed project, based on actual mileage alone and the fact that the circuit(s) would not run anywhere near populated areas. This option also has the added benefit of allowing better transmission access to Sycamore Canyon substation for the proposed San Diego Community Power Plant project.

**III.  
ALTERNATIVE ROUTES  
and  
ROUTING ADJUSTMENTS**

RPCC believes the transmission upgrades described above are preferable to SDG&E's coastal link portion of the proposed project and superior to alternative routing as well. Notwithstanding, RPCC understands this scoping process is meant to explore all alternatives that can lessen environmental impacts to the project and therefore submits the following alternative routes and routing adjustments for study within the EIR/EIS<sup>5</sup>:

- (1a) Pomerado Road to Miramar Area North - All Underground Option
- (1b) Pomerado Road to Miramar Area North – Combination Underground/Overhead Option
- (2a) MCAS Miramar – All Underground Option
- (2b) MCAS Miramar – Combination Underground/Overhead Option
- (3) Mercy Road to Penasquitos Canyon Preserve – Combination Underground/Overhead Option<sup>6</sup>
- (4) Rancho Penasquitos Blvd Bike Path Adjustment
- (5) Preferred Route Adjustments

A detailed description of each route is attached as Exhibit 2. These routes are also depicted in a map attached as Exhibit 3.<sup>7</sup>

**A. Project Objectives**

Each of the routing alternatives meet the three basic objectives of the project. The only sub-objective the alternatives arguably do not meet is objective #8 as identified by SDG&E in its PEA.

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<sup>5</sup> RPCC agrees with SDG&E that the routing adjustments within the coastal link identified in the NOP as the "Northwest Corner Alternative" and the "Mannix-Dormouse Road Alternative" present greater impacts as compared to the preferred route presented by SDG&E and therefore should not be fully evaluated and carried forward in the EIR/EIS.

<sup>6</sup> West Chase Homeowners Association has proposed a similar, if not the same, route.

<sup>7</sup> Only portions of the potential MCAS Miramar routes are shown within the map boundaries.

## **B. Feasibility**

### (1a) Pomerado Road to Miramar Area North - All Underground Option<sup>8</sup>

This option uses SDG&E's franchise right of way within City of San Diego streets. Though Pomerado is a two-lane road, the right of way is much greater than the width of the road. There appears to be no reason why this option is not feasible and should be studied in full within the EIR/EIS.<sup>9</sup>

### (1b) Pomerado Road to Miramar Area North – Combination Underground/Overhead Option

This option uses a combination of franchise right of way and existing SDG&E right of way (ROW). There appears to be no reason why this option is not feasible and should be studied in full within the EIR/EIS.<sup>10</sup>

### (2a) MCAS Miramar – All Underground Option

### (2b) MCAS Miramar – Combination Underground/Overhead Option

This option proposes to place the line underground within existing roads on the base. Since the base stretches from the Sycamore Canyon substation all the way to Interstate 805 where SDG&E has an existing ROW leading north into the Penasquitos substation, one of the options is to underground the transmission line all the way from Sycamore Canyon substation to a point where the base joins the existing ROW along 805. Other options include transitioning the underground portion from Sycamore Canyon (east Miramar area) to Miramar Road and continuing with alternatives 1a or 1b, above. The advantages to using the base are significant. The impacts to suburban neighborhoods are almost none.

Of course, RPCC realizes there may be legal/regulatory issues in using the base to run a new transmission line. While there would certainly be impacts to the base itself during construction, post-construction impacts would likely be minimal. Since many transmission lines currently lie within MCAS Miramar, the base is necessarily familiar with SDG&E obtaining access to maintain the lines. At some point in time the ROW for the transmission lines currently existing on the base were created. That begs the question of why another ROW (underground) could not be a possible option. Routing the transmission line within the base deserves additional study and should be studied in full within the EIR/EIS.

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<sup>8</sup> In reality, the route is not all underground. Routes 1a, 1b, 2a and 2b all meet up with SDG&E's existing right of way running along the eastern portion of the 805 freeway at some point. These routes all transition from underground to overhead at this point and continue overhead into the Penasquitos substation within the existing overhead ROW for approximately 2.2 miles.

<sup>9</sup> Photographs depicting conditions along alternative 1a are attached as Exhibit 4

<sup>10</sup> Photographs depicting conditions along alternative 1b are attached as Exhibit 5



(3) Mercy Road to Penasquitos Canyon Preserve – Combination Underground/Overhead Option

This option uses a majority of SDG&E’ preferred route, but transitions to an underground option earlier thereby avoiding more residential neighborhoods. The additional undergrounding is within the City of San Diego franchise right of way and additional portions of the Los Penasquitos Canyon Preserve. There appears to be no reason why this option is not feasible and should be studied in full within the EIR/EIS.<sup>11</sup>

(4) Rancho Penasquitos Blvd Bike Path Adjustment

This alternative makes a small adjustment to SDG&E’s preferred route. By advocating this small adjustment, RPCC is by no means advocating SDG&E’s preferred route. However, RPCC understands that five commissioners may feel differently some day and therefore requests a full analysis of this small routing adjustment. The adjustment moves the route to a bike path that runs along the south side of State Route 56 freeway (SR 56) until the elevation of the bike path meets up with the elevation of the ROW approximately a quarter mile west of Rancho Penasquitos Blvd. The transmission line could then easily move back into the ROW.

The adjustment provides three primary benefits. First, it moves the transmission line much further away from residences and out of resident’s back yards (through this area, residents actually own the land subject to SDG&E’s easement). Second, this area includes a creek and dense riparian habitat. SDG&E’s proposed route would cause permanent scarring of this area with the loss of many trees. This area was noted to be environmentally sensitive when Caltrans was building this portion of SR 56. Attached as Exhibit 7 is a portion of the EIR from the project. The eastbound off ramp and eastbound on ramp from SR 56 at Rancho Penasquitos Blvd. were specially designed to be compact, “to reduce impact to riparian habitat.”<sup>12</sup> Additional impacts are discussed below under Environmental Impacts. Third, the transmission line as currently configured will encounter a significant drop in elevation. SDG&E engineers have indicated that undergrounding lines into canyons is not desirable from an engineering perspective. The route adjustment solves this problem.<sup>13</sup>

This alternative encroaches on Caltrans ROW. The bike path, while in the Caltrans ROW, is maintained by the City of San Diego pursuant to an agreement between the City and Caltrans. Caltrans will require an encroachment permit. Given the significant environmental effects avoided, as compared to the effects of

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<sup>11</sup> Photographs depicting conditions along alternative 3 are attached as Exhibit 6

<sup>12</sup> See page 35 (attached as Exhibit 7). This area is also noted in the Rancho Penasquitos Community Plan as a “special treatment area.”

<sup>13</sup> Photographs depicting conditions along alternative 4 are attached as Exhibit 8

using the bike path for a short distance, one would believe Caltrans would be amenable to issuing an encroachment permit.

(5) Preferred Route Adjustments

Within the preferred route ROW, the centerline of the proposed transmission line moves back and forth. The centerline is also not always furthest away from residences within the ROW. In fact, at points, the centerline moves much closer to residences when compared to the other side of the ROW that has no residences (this mostly occurs along SR 56). The closer the transmission line is to the edge of the ROW bordering residences, the greater the EMF impact.

SDG&E's EMF plan lacks detail. It fails to indicate where along the route the expected measurements are calculated. RPCC requests the CPUC insure SDG&E complies with its EMF management plan and more thoroughly investigate the anticipated EMF levels along the preferred route, especially in those places where the transmission line appears to run closer to residences within the 150 foot ROW. Adjustments to the location of the transmission line within the ROW should be analyzed by the CPUC in an effort to minimize EMF exposure and route adjustments made is appropriate.

**C. Environmental Impacts**

(1a) Pomerado Road to Miramar Area North - All Underground Option

(1b) Pomerado Road to Miramar Area North – Combination Underground/Overhead Option

a. Aesthetics/Visual

Approximately 40 new tubular steel poles over 100 feet in height would be eliminated, maintaining the status quo on the less obtrusive H-frame structures currently in place from Pomerado Road to Chicarita substation, using either option. There would likely be additional poles needed within the 2.2 miles of overhead along Interstate 805 and north into Penasquitos substation using the combination option, though some vacant positions on existing structures are available within the ROW. This route, except for the last quarter mile, does not run near residences. Overall both options provide significant reduced impacts to visual resources.

b. Biological

Construction activities are expected to cause both temporary and permanent loss of native habitat and wildlife; disturb wildlife and loss of sensitive plant species under SDG&E's preferred route. In comparison, the use of existing roadways, as compared to a preserve and riparian area, combined with the use of a canyon used for mining operations, is expected to impact biological resources less.

c. Geology and Soils

The undergrounding of the project could cause soil erosion in steeply graded areas (Rancho Penasquitos Blvd) and increased sedimentation of the creeks the project will be forced to cross. In comparison, the all underground route would avoid the two creeks. The combination option would involve work in a dry creek bed.

d. Hazards and Hazardous Materials

Construction of the transmission line could cause potential leaking or spilling of petroleum or hydraulic fluids from construction equipment. This potential would be especially problematic near Rancho Penasquitos Blvd underground and the underground portion through the Los Penasquitos Canyon Preserve because both of these areas are near creeks/streams. In comparison, the all underground route's potential to spill contaminants into nearby water sources is not as great. The combination option has the potential of contamination in Carroll Canyon, but given the industry that currently exists within the canyon, the comparison of potential problems as between the Los Penasquitos Canyon Preserve and Carroll Canyon is higher for SDG&E's preferred route.

e. Hydrology and Water Quality

Construction of the transmission line could cause potential contaminants to enter the sewer system or streams and otherwise cause increased sedimentation of the creek near Rancho Penasquitos Blvd and the stream within the Los Penasquitos Canyon Preserve. The same comments for hazardous materials just above holds true here.

f. Land Use

Construction of the transmission line, especially within the Los Penasquitos Canyon Preserve would cause a temporary disturbance to the use of the land and would place permanent structures within a preserve. The users of the preserve in proximity to the underground line (scheduled to run under a trail for portions of the route through the preserve) would be exposed to high EMF levels. In comparison, the installation of an all underground or combination route takes the transmission line out of neighborhoods and parks and preserves and places it under City streets and in a Canyon (combination option) with far less environmental impact.<sup>14</sup>

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<sup>14</sup> Attached as Exhibit 9 are five pages from a draft plan to redevelop the eastern portion of Carroll Canyon into mixed use and in place of some of the existing rock quarry/concrete plant industry. The development is called Stone Creek and a review of the draft master plan submitted to the City of San Diego did not indicate what would happen to the existing overhead 69kV lines. Presumably, the lines will be placed underground within the project. If this project moves forward with the intent to move the existing overhead lines underground, this presents an opportunity to move the existing lines and a new 230kv circuit underground to a desirable spot for the developer. This potential creates a win-win situation because the developer may be able to reduce the costs the developer would otherwise have to pay SDG&E to underground the existing lines when work goes forward to construct the new 230 kV circuit.

g. Noise

During construction, noise generated by construction equipment would create a nuisance to nearby residences, park users and wildlife under SDG&E's preferred route or this alternative. Construction noise will impact less homes, however, with either alternative, because the route takes it away from more residences, as compared to the preferred route. Corona noise generated by an additional 230kV circuit would be present constantly for the additional residents from Pomerado to Chicarita and again from the Penasquitos Junction to the Penasquitos substation, and therefore, this alternative has the benefit of lowering this impact.

h. Recreational Resources

Recreational users of the Los Penasquitos Canyon Preserve would be impacted during construction, with SDG&E's proposed project. Recreational users of the West Chase Homeowners' community park, with houses that border the park/easement will be heavily impacted during construction and users will be exposed to high EMF levels into perpetuity. This alternative eliminates this impact.

i. Transportation and Traffic

During construction, construction traffic impacts are expected on Ranch Penasquitos Boulevard, Black Mountain Road and Park Village Road under SDG&E's preferred route. These alternatives would increase traffic impacts during construction due to the impacts of placing a majority of the coastal link under City streets using the all underground option. This impact is also greater using the combination option because even the combination option has far more undergrounding in City streets as compared to SDG&E preferred route.

j. Summary

The Pomerado Road to Miramar North alternatives significantly lessen the impacts as compared to SDG&E's preferred route. The most significant reductions to impacts are visual, biological, noise and recreational resources. The proposed alternatives avoid far more neighborhoods and place the transmission line underground on secondary streets in the Miramar area that are abutted by commercial buildings and light industry. Carroll Canyon, where existing 69 kV overhead transmission lines run, is in essence, a rock quarry. When compared to placing the line through the middle of Scripps Ranch Villages and Rancho Penasquitos, not to mention Del Mar Mesa and Carmel Valley, the appeal of these alternatives is obvious.

- (2a) MCAS Miramar – All Underground Option
- (2b) MCAS Miramar – Combination Underground/Overhead Option

Since the base is not open to the public it is difficult to analyze the environmental impacts within the base boundaries. RPCC proposes to underground the line under existing paved roads and/or designated dirt roads to minimize environmental impact. Aerial photos demonstrate a wide variety of options for undergrounding throughout the base. Working with the base would provide the best source of information of where within the base acceptable routes could be located. RPCC's makes suggestions based solely on aerial maps.

As compared to SDG&E's preferred route, an all underground route within the base would not appear to have more impacts, and probably less. The same appears to be true for the combination of undergrounding both inside and outside of the base or undergrounding inside the base and transitioning to overhead just outside the base per alternative 1b.

- (3) Mercy Road to Penasquitos Canyon Preserve – Combination Underground/Overhead Option

The alternative would lessen environmental impacts as compared to the proposed alignment in the following areas:

A. Aesthetics/Visual

Visual impacts of additional taller mono pole structures would be reduced from Ivy Hill Drive to the Chicarita substation (approximately 1.6 miles).

B. Biological

Construction activities are expected to cause both temporary and permanent loss of native habitat and wildlife; disturb wildlife and loss of sensitive plant species under either SDG&E's preferred route or this alternative. The additional amount of undergrounding in the Los Penasquitos Canyon preserve, not located under a paved or gravel road is minimal (approximately 1/3 of a mile) and most of this length would be placed under an existing trail.

C. Geology and Soils

The undergrounding of the project could cause soil erosion in steeply graded areas (Rancho Penasquitos Blvd) and increased sedimentation of the stream the project will be forced to cross. In comparison, this route avoids the riparian area near Rancho Penasquitos Blvd. This route does cross an additional small creek similar to the one SDG&E proposes to cross within the Los Penasquitos Canyon preserve.

#### D. Noise

During construction, noise generated by construction equipment would create a nuisance to nearby residences, park users and wildlife under SDG&E's preferred route or this alternative. Construction noise will impact less homes, however, with this alternative because the route takes it away from most residences, as compared to the preferred route. Corona noise generated by an additional 230kV circuit would be present constantly for the additional residents from Ivy Hill to Chicarita substation and therefore this alternative has the benefit of lowering this impact.

#### E. Recreational Resources

Recreational users of the Los Penasquitos Canyon Preserve would be impacted during construction, even more so than SDG&E's proposed project. However, recreational users of the West Chase Homeowners' community park, with houses that border the park/easement will be heavily impacted during construction and users will be exposed to high EMF levels into perpetuity. This alternative eliminates this impact.

#### F. Transportation and Traffic

During construction, construction traffic impacts are expected on Ranch Penasquitos Boulevard, Black Mountain Road and Park Village Road. As compared to SDG&E's preferred alternative, additional impacts to Scripps Ranch Parkway, Mercy Road, Black Mountain Road (Mercy to Canyonside Park Entrance) and traffic into Canyonside Park would occur.

#### G. Summary

As the forgoing brief description of impacts demonstrates, some impacts are lessened and some are increased under this alternative, but on balance there are less impacts with this alternative. This alternative takes the transmission line away from a large number of residences and out of a neighborhood park. RPCC is aware of the CPUC's rulings concerning *where* EMF measurements should be made (at the point of access control to the ROW). The use of the West Chase Neighborhood park easement challenges the Commission's assertions, in that no access control is possible. Indeed, children would be running and playing directly above the buried lines with no opportunity for access control of any kind.<sup>15</sup>

The same is true of Park Village Road. This road is the only access to Park Village Elementary School, and kids use it to walk to school every morning. Mercy Road, in contrast, is used almost exclusively by motor vehicles. The resulting EMF exposure values and times are significantly less, and are proportionately more adult. Placement of the lines in the Los Penasquitos Canyon preserve results in a trade off between additional environmental impacts and exposure to users of the preserve. SDG&E proposes to use trails, to the extent possible, to underground the line in order to

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<sup>15</sup> Photographs depicting the park are attached as Exhibit 10

reduce the impacts on the preserve. This alternative recommends the same. RPCC is well aware, however, that use of the trails as the location for the transmission line increases the recreational user's exposure to high EMFs. The community should have additional input about specific burial locations within the preserve should this alternative or SDG&E's alternative be selected as the preferred alternative within a final EIR/EIS.<sup>16</sup>

(4) Rancho Penasquitos Blvd Bike Path Adjustment

The alternative would lessen environmental impacts as compared to the proposed alignment in the following areas:<sup>17</sup>

B. Aesthetics/Visual

The proposed route will cut a swath through the middle of mature trees, diminishing the natural beauty of the area. This alternative would eliminate this impact.

C. Biological

Construction activities are expected to cause both temporary and permanent loss of native habitat and wildlife; disturb wildlife and loss of sensitive plant species in this riparian area. In comparison, the placement of the transmission line underneath the bike path would have less than a significant, if any, impact on biological resources.

D. Geology and Soils

The undergrounding of the project could cause soil erosion in steeply graded areas (Rancho Penasquitos Blvd) and increased sedimentation of the creek the project will be forced to cross. In comparison, the placement of the transmission line underneath the bike path would have less than a significant, if any, impact on geology and soils resources.

E. Hazards and Hazardous Materials

Construction of the transmission line could cause potential leaking or spilling of petroleum or hydraulic fluids from construction equipment. This potential would be especially problematic near the creek in this area. In comparison, the placement of the transmission line underneath the bike path would have less of an impact on the environment with potential use of hazardous materials further away from the riparian area.

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<sup>16</sup> Attached as Exhibit 11 is a trail map for the Los Penasquitos Canyon Preserve. This map can also be found at <http://www.sandiego.gov/park-and-recreation/pdf/penasquitoscanyon.pdf>. The map generally shows the location of trails but is far from precise.

<sup>17</sup> Environmental impacts not discussed are deemed by RPCC to be roughly equivalent between SDG&E's preferred project and the alternative analyzed or do not apply between both alternatives.

#### F. Hydrology and Water Quality

The EIR for SR 56 points out that the “project encroaches upon the creeks in the area of Rancho Penasquitos Blvd.... A Section 1601 notification will be required from the State Department of Fish and Game; a Section 404 permit will be required from the U.S. Corps of Engineers (expected to be a nationwide category). Whether these permit requirements are still in place is unknown to RPCC. What appears clear, however, is that SDG&E plans to place the transmission line under the creek and therefore there are hydrology and water quality issues. In comparison, the placement of the transmission line underneath the bike path would not effect hydrology issues, would unlikely effect water quality and would unlikely require permits as described above.

#### G. Transportation and Traffic

The propose route adjustment keeps the route underneath Rancho Penasquitos Blvd. for a longer distance (estimated at less than 200 feet). The impacts on traffic of having more construction on Rancho Penasquitos Blvd. as compared to the preferred route are likely greater, but certainly do not outweigh all the other benefits and reductions to environmental impacts associated with moving the route to the bike path.

#### H. Summary

The cumulative impacts to this single area are great and can be mitigated with this alternative. While it may be time consuming to obtain approval from Caltrans, the time and effort is well worthwhile for the environment and residents in this area. Further, approval from Caltrans should be forthcoming as even they recognized the sensitivity of this area within their own EIR.

#### (5) Preferred Route Adjustments

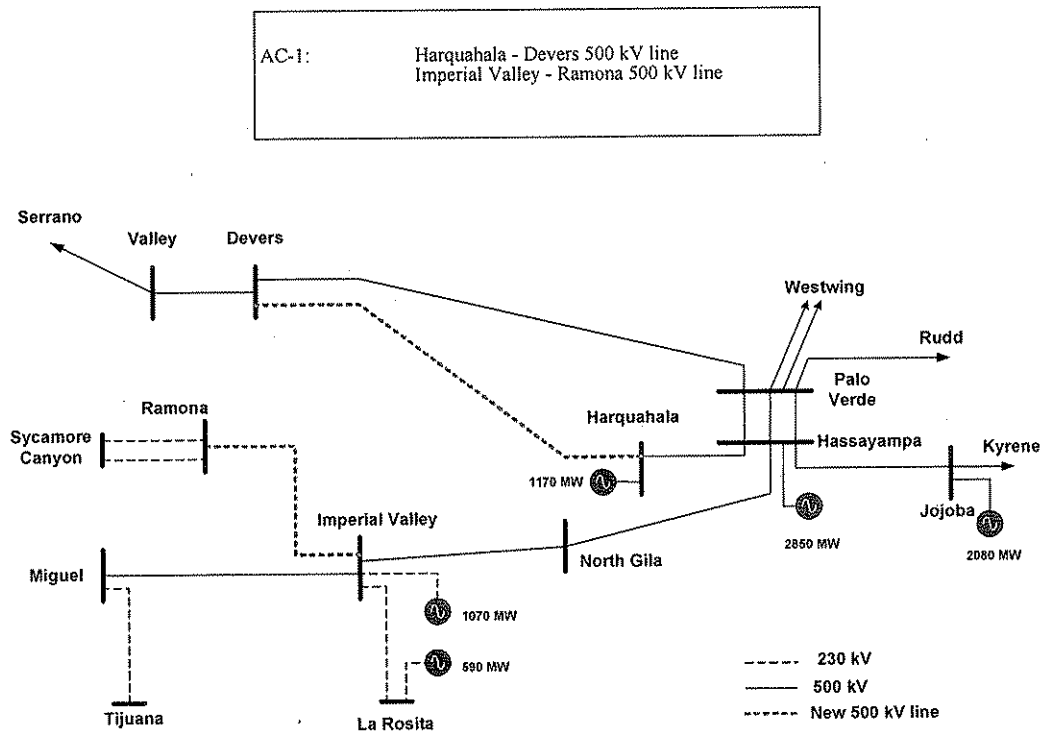
RPCC does not anticipate any additional environmental impacts associated with changes in the centerline of the transmission line within the ROW.

### **IV. CONCLUSION**

RPCC respectfully requests the CPUC and its environmental team to carry forward each and every alternative set forth above for full analysis within the EIR/EIS. RPCC also encourages the CPUC and its team to evaluate and add additional transmission upgrade alternatives for study that would alleviate they need for a new transmission line to be built within the coastal link, as well as to evaluate and study additional routes within the coastal link that lessen impacts upon the environment and the suburban population. If any additional information is required, please contact RPCC c/o Harvey Payne at 619-515-1194 and/or hpayne@sdgllp.com.



## Alternative AC1



### Proposed Project:

#### 500 kV Lines:

- A new Harquahala – Devers 500 kV line (including series capacitors in both ends, identical to the Palo Verde – Devers line)
- A new Imperial Valley – Ramona 500 kV line (including series capacitors at Ramona)

#### 230 kV lines:

- Construct a new 230 kV double circuit tower line between Ramona and Sycamore Canyon (about 16 miles)
- Reconductor SCE's four 230 kV lines west of Devers (Devers – San Bernardino No. 1 & 2 230 kV lines and Devers – Vista No. 1&2 230 kV lines) with 2B-1033 ACSR

#### Transformers:

- Second Devers 500/230 kV transformer
- Second Miguel 500/230 kV transformer
- One 500/230 kV transformer at Ramona (N-1 rating of at least 1720 MVA)
- Install a new 230/138 kV transformer at Sycamore Canyon and loop-in the Chicarita-Carlton Hills Tap 138 kV line (TL13821B) at Sycamore Canyon (BP00151).

**Upgrade of existing series capacitors (minimum values, the ultimate rating may be higher):**

- Upgrade thermal rating on Hassayampa – North Gila series capacitors with 1900 A (Normal) and 2200 A (N-1) **Recommended rating is 2400 A Normal and 3400 A 30 min**
- Upgrade thermal rating on North Gila - Imperial Valley series capacitors with 1800 A (Normal) and 2100 A (N-1). **Recommended rating is 2400 A Normal and 3400 A 30 min**
- Upgrade thermal rating on Imperial Valley - Miguel series capacitors with 1800 A (Normal) and 2500 A (N-1). **Recommended rating is 2600 A Normal and 3500 A 30 min**
- Upgrade thermal rating on Palo Verde – Devers series capacitors with 2000 A (Normal) and 2900 A (N-1) **Ultimate rating to be determined**
- Upgrade thermal rating on Navajo - Crystal series capacitors with 1900 A (Normal) and 2800 A (N-1)

**VAR support:**

The following voltage support equipment was added:

Static (Switched shunts):

- 2 x 43 Mvar at South Bay 138 kV
- 2 x 79 Mvar at Barre 230 kV
- 3 x 79 Mvar at Devers 230 kV
- 1 x 79 Mvar at Coachella Valley 230 kV
- 1 x 79 Mvar at San Bernardino 230 kV
- 2 x 79 Mvar at Vista 230 kV
- 1 x 79 Mvar at Mira Loma 230 kV

Dynamic (Static Var Compensators) :

- +400 Mvar to – 100 Mvar at Devers 500 kV
- +200 Mvar to – 100 Mvar at Valley 500 kV

It should be noted that the amount and location of additional voltage support equipment will depend upon a number of variables; mitigation of identified criteria violations (see below), dispatch of generation, various path flows etc.

The following table summarizes the proposed mitigation for the thermal overloads identified under normal conditions (N-0) and single contingency conditions (N-1).

<b>Sub-Area</b>	<b>Proposed Mitigation</b>
<b>Sycamore Canyon</b>	Addition of a second 230/138 kV transformer and a third 230/69 kV transformer at Sycamore Canyon, increase rating on Sycamore – Carlton Hills Tap and Sycamore – Chicarita 138 kV lines <b>or</b> Terminate the new 500 kV line from Imperial Valley at Rainbow instead of Ramona
<b>Miguel</b>	Generation from Southbay <b>or</b> Addition of two 230/138 kV transformers and one 230/69 kV transformer at Miguel Substation, loop in existing Southbay – Los Coches 138 kV line into Miguel Substation and increase rating on Miguel – Los Coches and Miguel – Southbay 138 kV lines
<b>Blythe/Yuma</b>	Implement a Special Protection System (SPS) for loss of either Hassayampa – North Gila 500 kV line or North Gila – Imperial Valley 500 kV line (existing SPS in place for this outage) or Camino – Iron Mountain 230 kV line to trip generation in the Blythe area
<b>CFE Mexico/Imperial Valley</b>	Implement an SPS for loss of Imperial Valley – Miguel 500 kV line or the loss of Imperial Valley 500/230 kV transformer bank (1120MVA) to trip generation connected to Imperial Valley 230 kV Substation (existing SPS in place). Cross-tripping of Imperial Valley – La Rosita 230 kV line for the outage of Imperial Valley – Miguel 500 kV line may be necessary during certain conditions unless the La Rosita – Rumerosa 230 kV line is upgraded
<b>Devers</b>	Split the existing Devers – Mirage 115 kV system into two radial systems (a planned SCE upgrade)
<b>Phoenix</b>	Addition of a second 500/230 kV transformer bank at Silverking Substation <b>or</b> Increase the N-1 rating on Santan – Thunderstone 230 kV line

**Normal overloads:**

<b>Overloaded element</b>	<b>Area</b>	<b>N-0 rating</b>	<b>Peak Loading (%)</b>	<b>Off-Peak Loading (%)</b>	<b>Sub-Area</b>
Sycamore #1&2 230/69 kV transformers	22	224 MVA	107	-	Sycamore
Sycamore - Carlton Hills Tap - #1A 138 kV line	22	854 A	113		
Sycamore 230/138 kV transformer	22	392 MVA	106	-	
Miguel-Procter Valley 138 kV line	22	1708 A	111	-	Miguel
Miguel #1&2 230/69 kV transformers	22	224 MVA	113	-	
Miguel 230/138 kV transformer	22	392 MVA	117	-	
Mirage – Tamarisk 115 kV line	24	1090 A	102	-	Devers

**Single contingency load flow results**

<b>Worst Contingency (N-1)</b>	<b>Overloaded Element</b>	<b>Area</b>	<b>N-1 rating</b>	<b>Peak: Loading (%)</b>	<b>Off-Peak: Loading (%)</b>	<b>Sub-Area</b>
Miguel-Mission #1 230 kV	Miguel - Procter Valley 138 kV line	22	2000 A	111	-	Miguel
	Miguel 230/138 kV transformer	22	468 MVA	113	-	
	Procter Valley- Telegraph Canyon 138 kV line	22	2000 A	106	-	
	South Bay - Telegraph Canyon 138 kV line	22	1708 A	108	-	
Miguel #1 500/230 kV transformer	Miguel #2 500/230 kV transformer	22	1329 MVA	-	102	Miguel
Miguel #2 500/230 kV transformer	Miguel #1 500/230 kV transformer	22	1329 MVA	-	102	
Imperial Valley-Miguel 500 kV	La Rosita – HRD 230 kV line	20	974 A	104	122	CFE
	La Rosita - Rumerosa 230 kV line	20	974 A	115	135	
	HRD – Rumerosa 230 kV line	20	974 A	-	117	
	Sycamore - Carlton Hills Tap - #1A 138 kV line	22	854 A	156	129	Sycamore
	Sycamore - Elliott 69 kV line	22	571 A	109	101	Sycamore
Sycamore-Escondido 230 kV	Sycamore-Chicarita #1A 138 kV line	22	854 A	107	115	Sycamore
	Poway-Pomerado 69 kV line	22	1145 A	109	-	
Hassayampa-North Gila 500 kV	Blythe-Knob 161 kV line	14	600 A	127	108	Blythe
	Yucca #1 & 2 161/69 kV transformer	14	75 MVA	112	-	Yuma
	Gila #1 & 2 161/69 kV transformer	14	90 MVA	106	-	

North Gila-Imperial Valley 500 kV	Blythe-Niland 161 kV line	21	615 A	106	106	Blythe
Iron Mountain-Camino 230 kV	Blythe - Eagle Mountain 161 line	24	695 A	101	105	
Silverking 500/230 kV transformer	Thunderstone - Santan 230 kV line	14	1100 A	120	-	Phoenix
Devers #1 500/230 kV transformer	Devers #2 500/230 kV transformer	24	1230 MVA	121	115	Devers
Devers #2 500/230 kV transformer	Devers #1 500/230 kV transformer	24	1230 MVA	121	115	
Devers #3 230/115 kV transformer	Devers #1 230/115 kV transformer	24	328 MVA	101	-	
Devers No. 1 230/115 kV transformer	Mirage – Tamarisk 115 kV line	24	1255 A	103	-	
Imperial Valley #1 500/230 kV transformer	Imperial Valley #2 500/230 kV transformer	22	732 MVA	116	121	Imperial Valley

**Post transient study results**

Contingency	Bus Name	Area	Voltage deviation (%)	
			Peak	Off-Peak
Hassayampa-N. Gila #1 500 kV	Bouse 161	14	6.8	<5.0
	Gila 161	14	7.4	5.4
	Knob 161	14	5.8	<5.0
	Dome Tap 161	14	7.9	5.6
	Kofa 161	14	7.1	<5.0
	Wltnmohk 161	14	7.8	<5.6

**Double contingency load flow results**

Worst Contingency (N-2)	Overloaded Element	Area	N-2 rating	Peak Loading (%)	Off-Peak Loading (%)	Sub-Area
Lugo-Eldorado, Lugo - Mohave 500 kV lines	Victorville - Lugo 500 kV line	24	3210 A	-	107	DWP/SCE
Palo Verde-Devers, Harquahala- Devers 500 kV lines	Hassayampa – North Gila 500 kV line	22	1890 A	152	155	SWPL
	North Gila - Imperial Valley 500 kV line	22	2000 A	131	135	
	BlytheSC-Eagle Mountain 161 kV line	24	725 A	106	119	Blythe
	Perkins - Mead 500 kV line	19	1930 A	-	122	Perkins
	Perkins Phase Shifters	14	878 MVA	-	119	

	Avenue 58 - Banister 161 kV line	21	592 A	-	112	IID
	Liberty 230 kV Phase Shifter	14	597 MVA	-	104	Liberty
San Onofre - Talega #1 & 2 230 kV lines	Oceanside Tap-Stuart Tap 69 kV line	22	270 A	104	-	S. o SONGS
Mission - Old Town #1&2 230 kV lines	Kyocera Tap - Spectrum 69 kV line	22	364 A	109	-	Mission
Miguel-Mission #1& 2 230 kV lines	Sycamore - Carlton Hills Tap - #1A 138 kV line	22	854 A	161	118	Sycamore
	Paradise - Chollas 69 kV line	22	842 A	123	-	Miguel
	Miguel-Procter Valley 138 kV line	22	1708 A	141	108	Sycamore
	Sycamore - Elliot 69 kV line	22	571 A	115	-	
	Sycamore - Chicarita #1A 138 kV line	22	854 A	114	115	
	Miguel #1 & 2 230/69 kV transformers	22	305 MVA	107	-	Miguel
	Sycamore # 1A 230/138 kV transformer	22	525 MVA	105	-	Sycamore
	Miguel 230/138 kV transformer	22	468 MVA	144	110	Miguel
	Procter Valley- Telegraph Canyon 138 kV line	22	1708 A	136	105	
	South Bay - Telegraph Canyon 138 kV line	22	1708 A	144	110	



## **Proposed Mitigation**

The following mitigation measures are intended to address normal overloads and single contingency (N-1) overloads for transmission facilities with voltage higher than 100 kV. Additional mitigation may be necessary for multiple contingency overloads (i.e. controlled load shedding, SPS etc.)

### **Sycamore Canyon area overloading**

#### Option 1:

- Construct a new 230 kV line between Sycamore Canyon and Penasquitos.
- Install a third 230/69 kV bank at Sycamore Canyon similar in size to the two existing ones. (or increase the N-1 rating on the two existing ones)
- Increase the N-1 rating on Sycamore Canyon – Carlton Hills Tap 138 kV line to 1100 A (263 MW)

#### Option 2:

- Install a second 230/138 kV bank at Sycamore Canyon similar in size to the already proposed bank.
- Install a third 230/69 kV bank at Sycamore Canyon similar in size to the two existing ones.
- Increase the normal rating on the 138 kV line between Sycamore and Carlton Hills Tap to 1160 A (277 MW) and the N-1 rating to 1420 A (339 MW)
- Increase the N-1 rating on the 138 kV line between Chicarita and Sycamore to 1100 A (263 MW)

### **Mitigation for Miguel area overloading**

#### Option 1:

- Use the short term emergency rating of 1680 MVA to mitigate the 2% overload on the Miguel 500/230 kV bank as identified in the off-peak studies for the loss of the parallel bank
- Increase San Diego area generation by about 430 MW (300 MW from South Bay units 2, 3 and 4 and 130 MW from South Bay unit 1).

#### Option 2:

- Use the short term emergency rating of 1680 MVA to mitigate the 2% overload on the Miguel 500/230 kV bank as identified in the off-peak studies for the loss of the parallel bank
- Install a third Miguel 230/69 kV bank similar in size to the two existing ones.

- Install two new Miguel 230/138 kV banks similar in size to the existing one
- Loop the existing South Bay - Los Coches 138 kV line into Miguel Substation. Increase the normal rating on the Miguel – South Bay 138 kV line to at least 1090 A (260 MW) and the N-1 rating to 1780 A (426 MW). Increase the N-1 rating on Miguel – Los Coches 138 kV to at least 1100 A (263 MW)

## **Blythe Area**

### **1) Mitigation for loss of the Hassayampa – North Gila 500 kV line:**

#### Option 1

- Increase the N-1 rating on the Blythe – Knob 161 kV line to at least 770 A (215 MW)

#### Option 2

- Add North Gila area generation (310 MW from the Wellton Mohawk Generation project and the identified system upgrades according to the system impact study was found to be sufficient).

#### Option 3

- Implement an SPS to trip generation in the Blythe area for this outage.

### **2) Mitigation for loss of the North Gila – Imperial Valley 500 kV line:**

#### Option 1

- Increase the N-1 rating on the Blythe – Niland 161 kV line to 660 A (184 MW)

#### Option 2

- Implement an SPS to trip generation in the Blythe area for this outage.

### **3) Mitigation for loss of the Iron Mountain – Camino 230 kV line:**

#### Option 1

- Increase the N-1 rating on the Eagle Mountain - Blythe 161 kV line to 730 A (204 MW)

#### Option 2

- Implement an SPS to trip generation in the Blythe area for this outage.

## **CFE**

### **Mitigation for loss of the Imperial Valley – Miguel 500 kV line:**

Off-Peak:

Option 1

- Trip 1060 MW of generation from units connected to Imperial Valley 230 kV Substation. Cross-trip Imperial Valley – La Rosita 230 kV line. The limiting element is the emergency rating on Rumerosa – La Rosita 230 kV line, 388 MVA. Cross-tripping can be avoided by upgrading this line.

Peak:

Option 1

- Trip 600 MW of generation from units connected to Imperial Valley 230 kV Substation.

## **Imperial Valley**

### **Mitigation for loss of the larger Imperial Valley 500/230 kV transformer bank (1120 MVA):**

Option 1 :

- Trip about 300 MW of generation from units connected to the Imperial Valley 230 kV Substation

Option 2 :

- Replace the existing 600 MVA bank with a second 1120 MVA 500/230 kV transformer bank.

## **Devers**

### **1) Mitigation of overloading on the Mirage – Tamarisk 115 kV line:**

Option 1 :

- Split the Devers-Mirage 115 kV system, divide it into two radial systems. (Currently a planned SCE project)

Option 2 :

- Increase the normal rating to at least 1120 A (223 MW) and the N-1 rating to at least 1300 A (259 MW)

## **2) Mitigation for loss of one of the Devers 500/230 kV transformer bank (1120 MVA):**

- Utilize the short term emergency rating of 1680 MVA to mitigate the 21% overload on the Devers 500/230 kV bank as identified in the peak studies for the loss of the parallel bank

### **Phoenix**

#### **Mitigation of overloading on the Santan - Thunderstone 230 kV line**

##### **Option 1 :**

- Increase the N-1 rating to 1310 A (522 MW) on Santan – Thunderstone 230 kV line

##### **Option 2 :**

- Add a second 500/230 kV transformer bank at Silverking

### **Yuma area**

#### **Mitigation of overloading on the Yucca No. 1&2 161/69 kV transformers and Gila No. 1&2 161/69 kV transformers**

##### **Option 1 :**

- Implement an SPS to trip generation in the Blythe area for the outage of Hassayampa – North Gila 500 kV line.

##### **Option 2 :**

- Add a third 161/69 kV transformer bank at Yucca and Gila

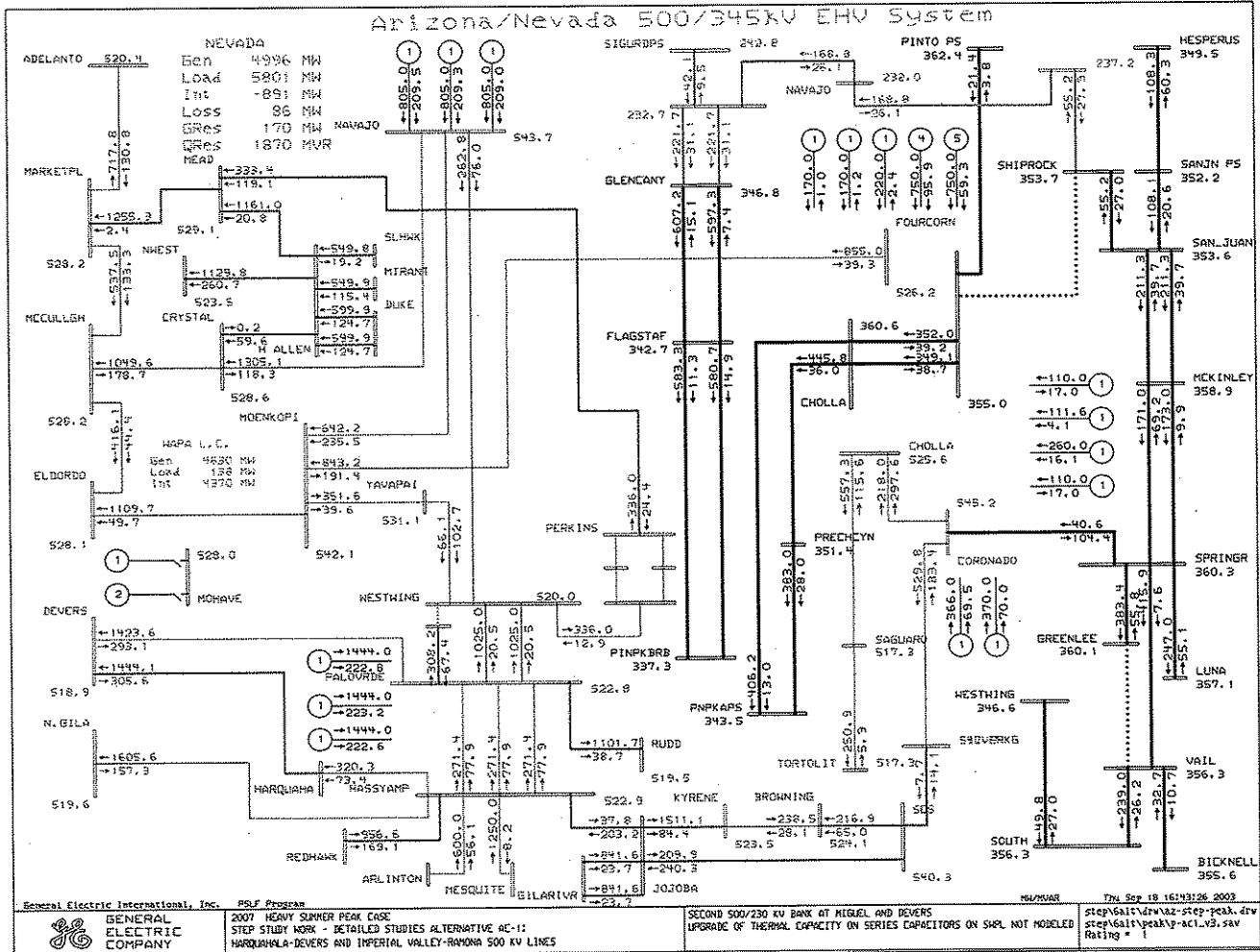
# **Powerflow Diagrams AC1**

**Peak**

**(All lines in service)**



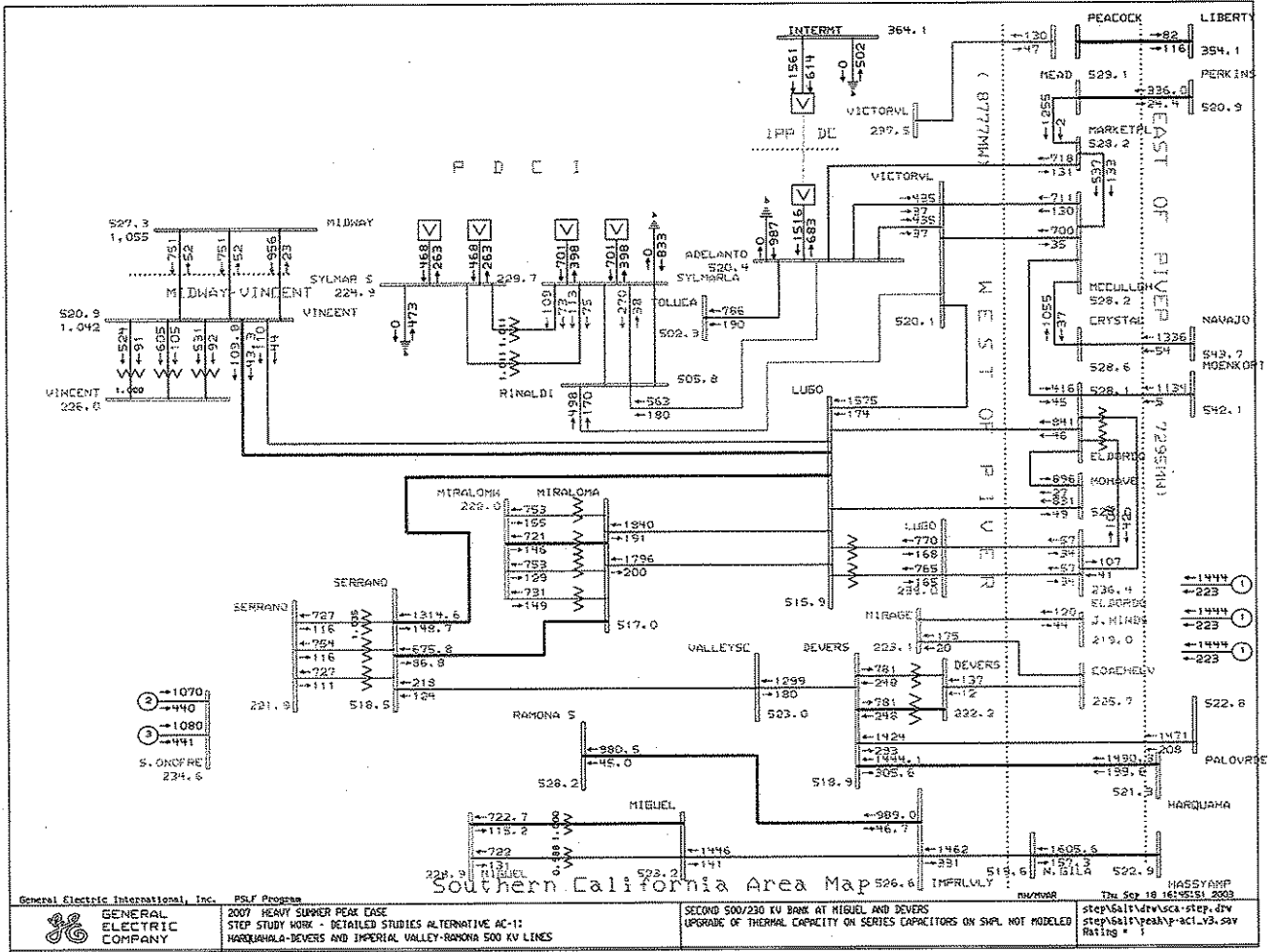
### Arizona/Nevada 500/345KV EHV System



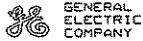
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 2007 HEAVY SUMMER PEAK CASE  
 STEP STUDY WORK - DETAILED STUDIES ALTERNATIVE AC-11  
 HARQUANLA-DEVERS AND IMPERIAL VALLEY-RAMONA 500 KV LINES

SECOND 500/230 KV BANK AT MIGUEL AND BEVERS  
 UPGRADE OF THERMAL CAPACITY ON SERIES CAPACITORS ON SWR, NOT MODELLED

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General Electric International, Inc. PSLF Program



2007 HEAVY SUMMER PEAK CASE  
 STEP STUDY WORK - DETAILED STUDIES ALTERNATIVE AC-11:  
 HARQUAHA-DEVERS AND IMPERIAL VALLEY-RAHONA 500 KV LINES

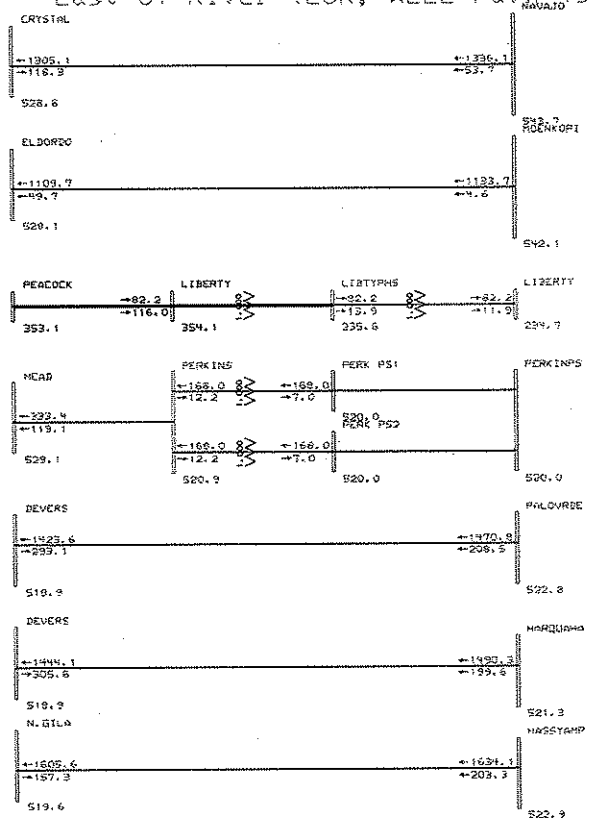
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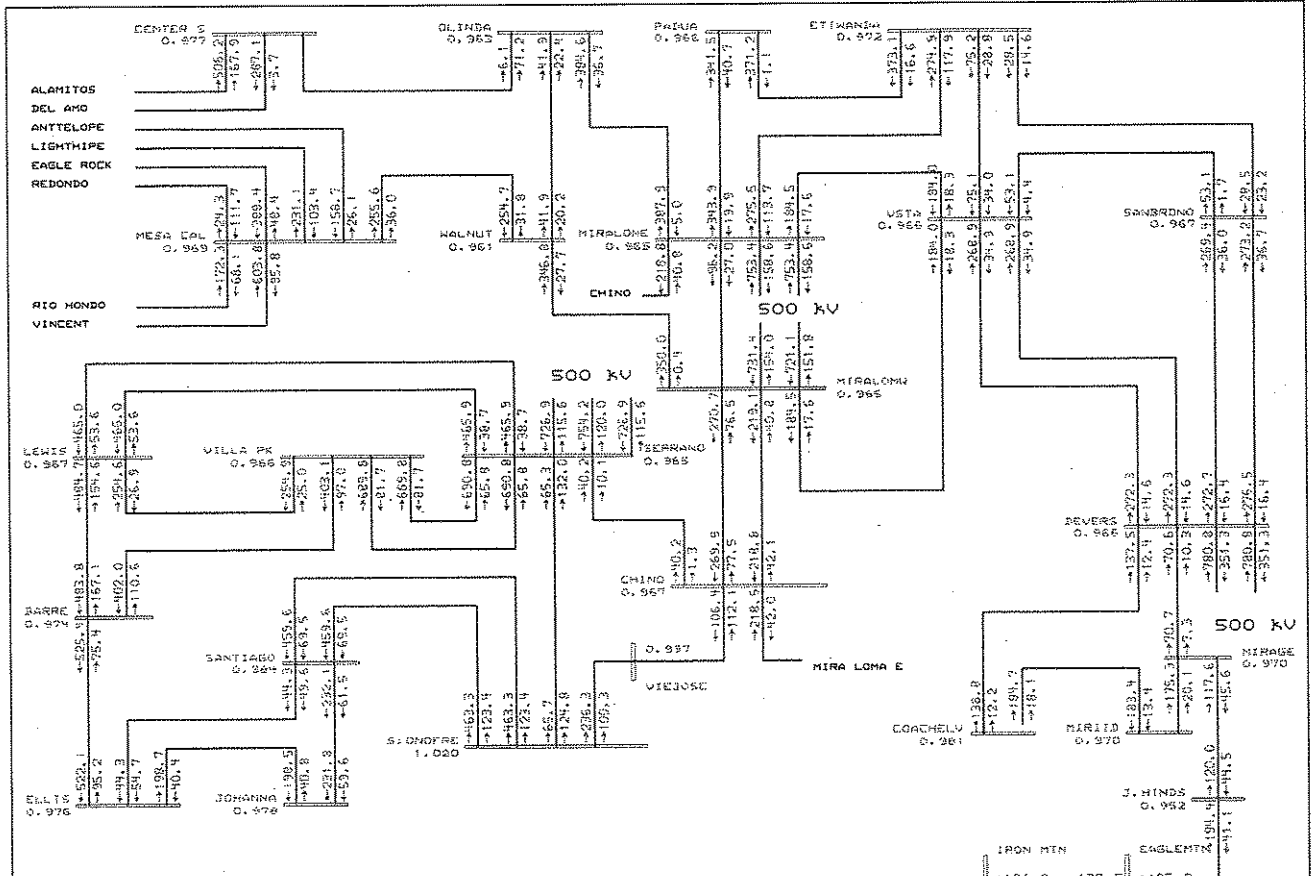
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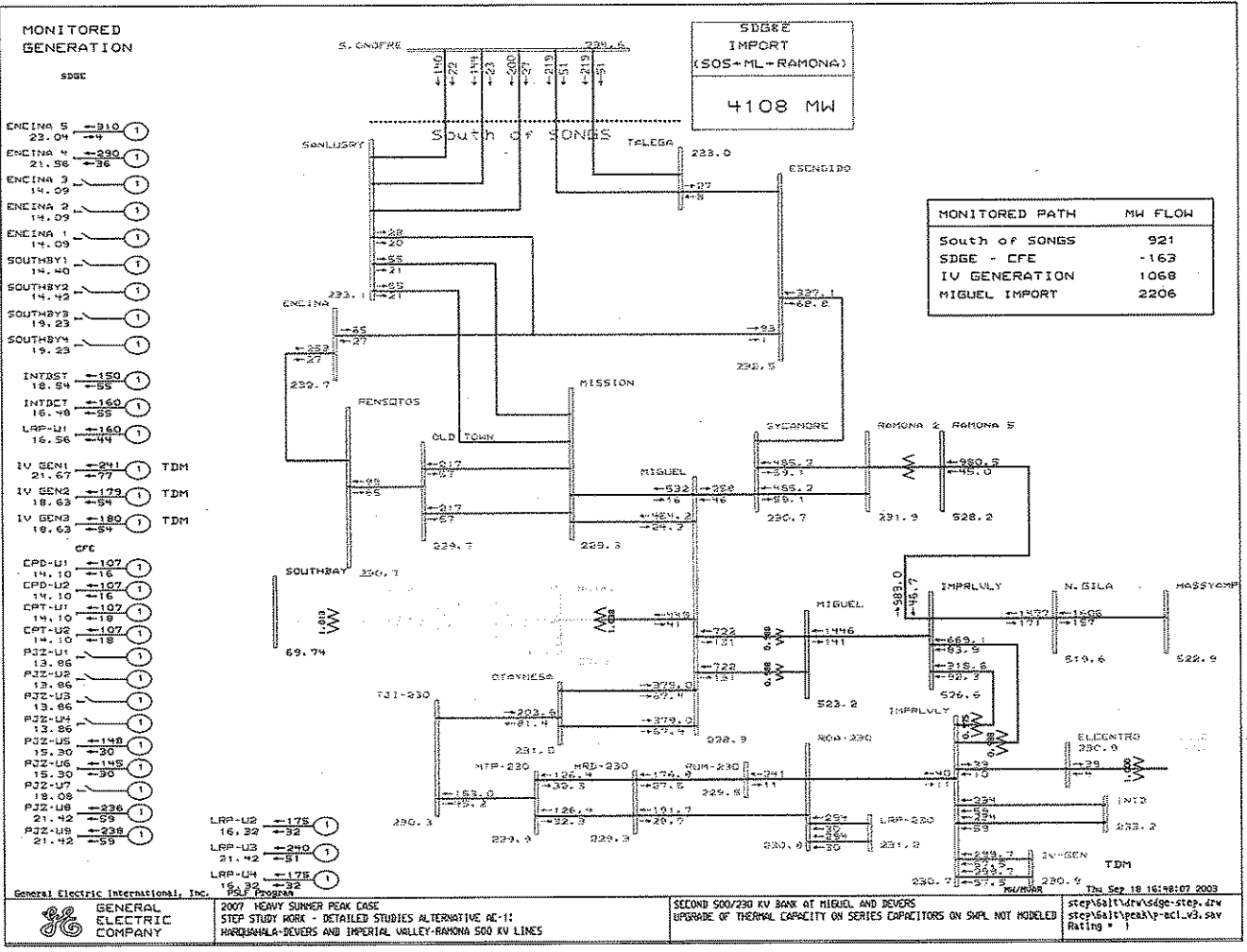
East of River (EOR, WECC Path 49)

Total EOR Flow:  
7295MW





230 kV Southern California (SCE/IID/MWD)



**MONITORED GENERATION**

- SDSRE**
- ENCINA 5 → -210 (1)
  - ENCINA 4 → -290 (1)
  - ENCINA 3 → -36 (1)
  - ENCINA 2 → -14.09 (1)
  - ENCINA 1 → -14.09 (1)
  - SOUTHBY1 → -14.40 (1)
  - SOUTHBY2 → -14.42 (1)
  - SOUTHBY3 → -19.23 (1)
  - SOUTHBY4 → -19.23 (1)
  - INTBST → -150 (1)
  - INTBST → -55 (1)
  - INTBST → -160 (1)
  - INTBST → -55 (1)
  - LRP-L1 → -160 (1)
  - LRP-L1 → -44 (1)
  - IV GEN1 → -241 (1) TDM
  - IV GEN2 → -173 (1) TDM
  - IV GEN3 → -180 (1) TDM
  - IV GEN3 → -54 (1) TDM
  - CFC**
  - CPD-U1 → -107 (1)
  - CPD-U2 → -16 (1)
  - CPD-U2 → -107 (1)
  - CPD-U2 → -16 (1)
  - CPT-U1 → -107 (1)
  - CPT-U1 → -18 (1)
  - CPT-U2 → -107 (1)
  - CPT-U2 → -18 (1)
  - PZJ-U1 → -13.86 (1)
  - PZJ-U2 → -13.86 (1)
  - PZJ-U3 → -13.86 (1)
  - PZJ-U4 → -13.86 (1)
  - PZJ-U5 → -148 (1)
  - PZJ-U5 → -30 (1)
  - PZJ-U6 → -145 (1)
  - PZJ-U6 → -30 (1)
  - PZJ-U7 → -18.08 (1)
  - PZJ-U8 → -236 (1)
  - PZJ-U8 → -59 (1)
  - PZJ-U8 → -238 (1)
  - PZJ-U8 → -59 (1)
  - LRP-L2 → -175 (1)
  - LRP-L2 → -32 (1)
  - LRP-L3 → -240 (1)
  - LRP-L3 → -51 (1)
  - LRP-L4 → -175 (1)
  - LRP-L4 → -32 (1)

MONITORED PATH	MW FLOW
South of SONGS	921
SDSRE - CFE	-163
IV GENERATION	1068
MIGUEL IMPORT	2206

SDSRE  
IMPORT  
(SOS+ML+RAMONA)  
**4108 MW**

General Electric International, Inc.  
**GENERAL ELECTRIC COMPANY**

2007 HEAVY SUMMER PEAK CASE  
STEP STUDY WORK - DETAILED STUDIES ALTERNATIVE AC-1:  
HARDWALLA-DEVERS AND IMPERIAL VALLEY-RAMONA 500 KV LINES

SECOND 500/230 KV BANK AT MIGUEL AND DEVERS  
UPGRADE OF THERMAL CAPACITY ON SERIES CAPACITORS ON SHPL NOT MODELED

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Thu Sep 18 16:48:07 2003  
301/MSR

# **Powerflow Diagrams AC1**

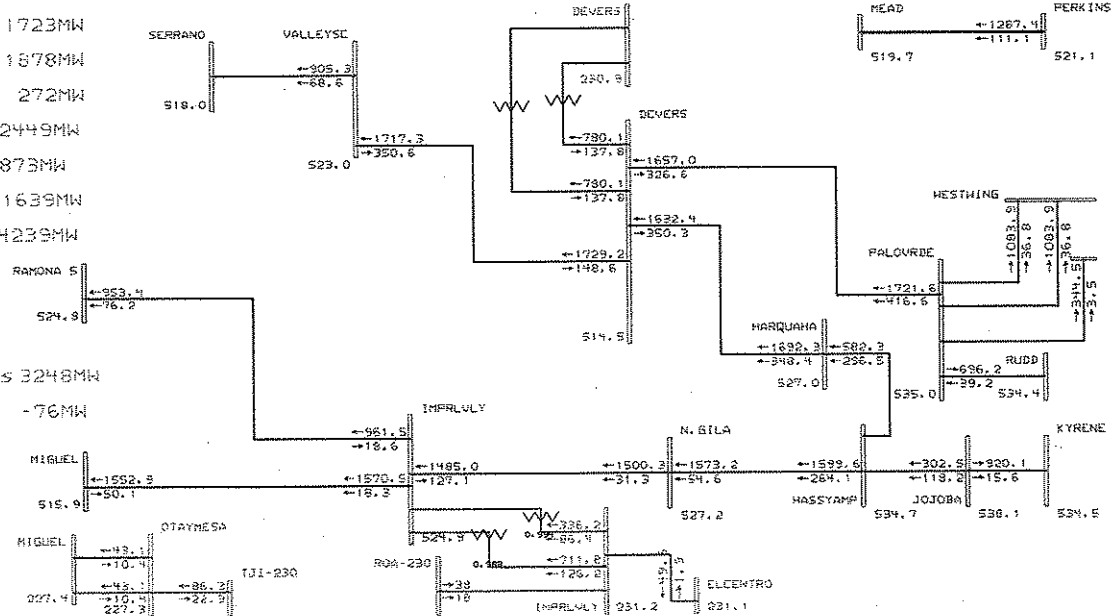
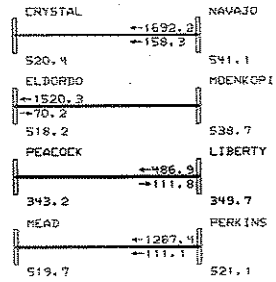
**Off – Peak**

**(All lines in service)**

### Southern California/Western Arizona Area Map

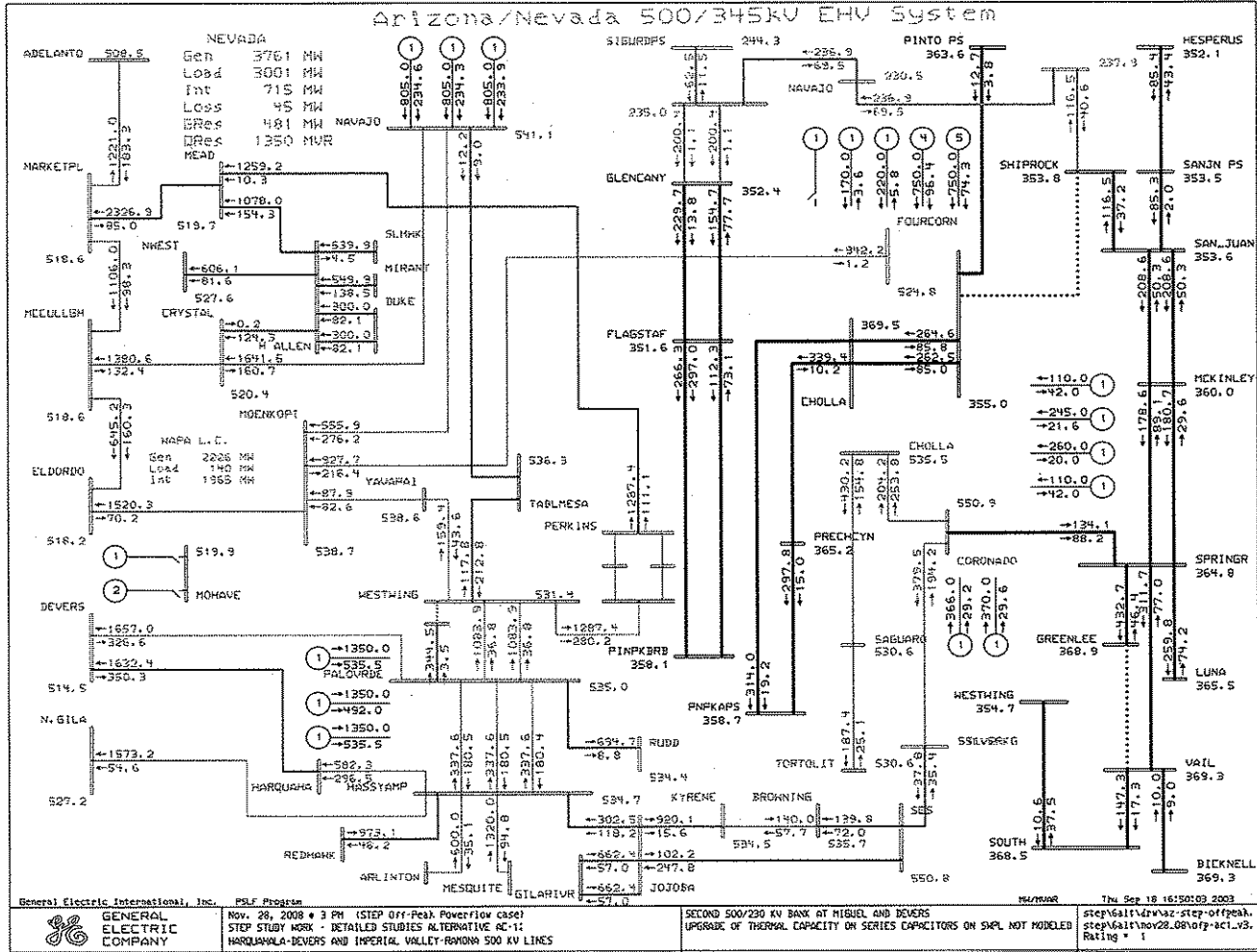
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 N. SONGS 1878MW  
 S. SONGS 272MW  
 S. of Lugo 2449MW  
 SD Imp. 2873MW  
 Mig. Imp. 1639MW  
 P V East 4239MW

SANDIEGO	SOCALIF	LADWP	ARIZONA
Gen 1381 MW	Gen 5735 MW	Gen 2174 MW	Gen 18633 MW
Load 3118 MW	Load 13651 MW	Load 4112 MW	Load 8968 MW
Int -2002 MW	Int -8268 MW	Int -2226 MW	Int 9364 MW
Loss 114 MW	Loss 452 MW	Loss 288 MW	Loss 300 MW



W. of Devers 3248MW  
 Navajo S. -76MW  
 (Path S1)

# Arizona/Nevada 500/345KV EHV System

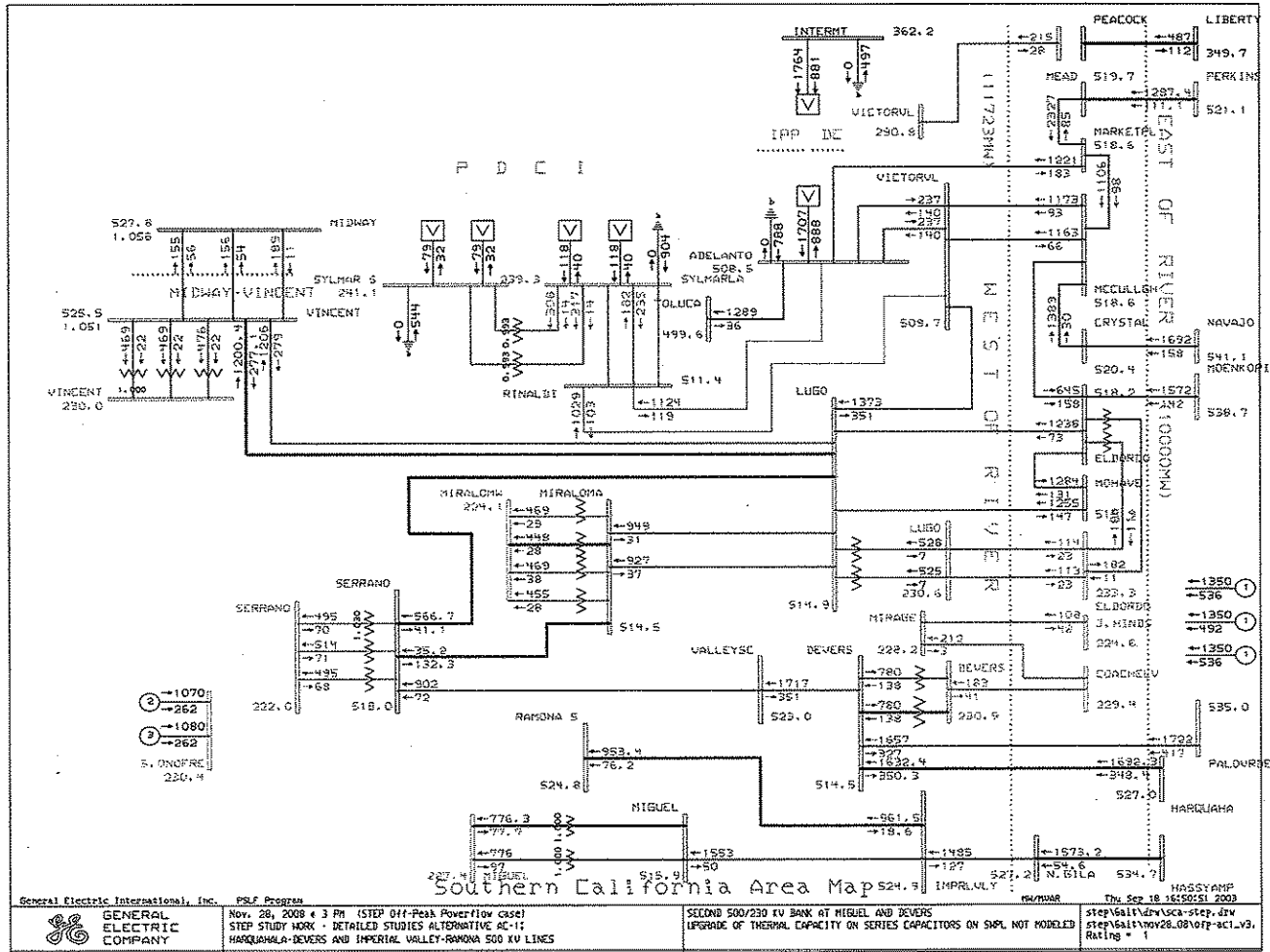


**GENERAL ELECTRIC COMPANY**

Nov. 28, 2008 @ 3 PM (STEP OFF-PEAK Powerflow case)  
 STEP STUDY WORK - DETAILED STUDIES ALTERNATIVE AC-11  
 HARQUANLA-DEVERS AND IMPERIAL VALLEY-BROWNA 500 KV LINES

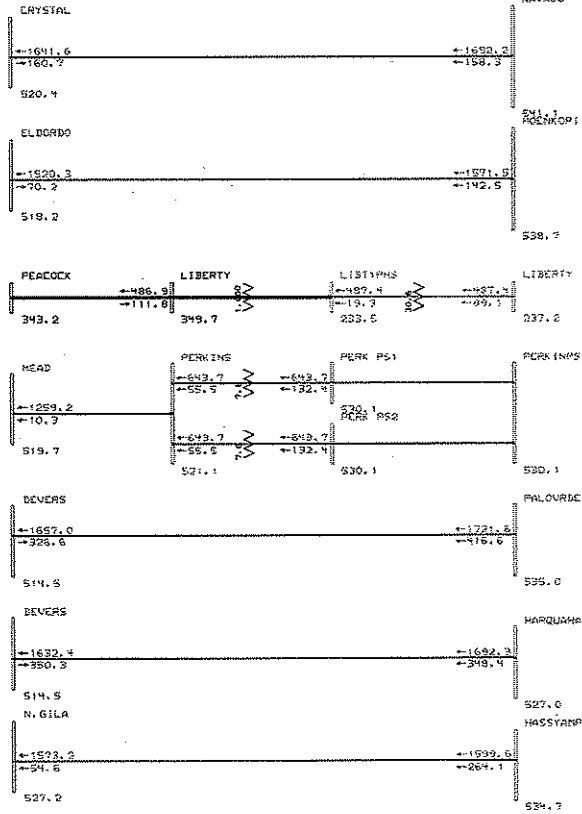
SECOND 500/230 KV BANK AT MISUEL AND DEVERS  
 UPGRADE OF THERMAL CAPACITY ON SERIES CAPACITORS ON SHPL NOT MODELLED

7th Sep 18 16:50:03 2003  
 step\all\up\wz-step-offpeak  
 step\all\up\wz\_080107-act.v3  
 Rating = 1

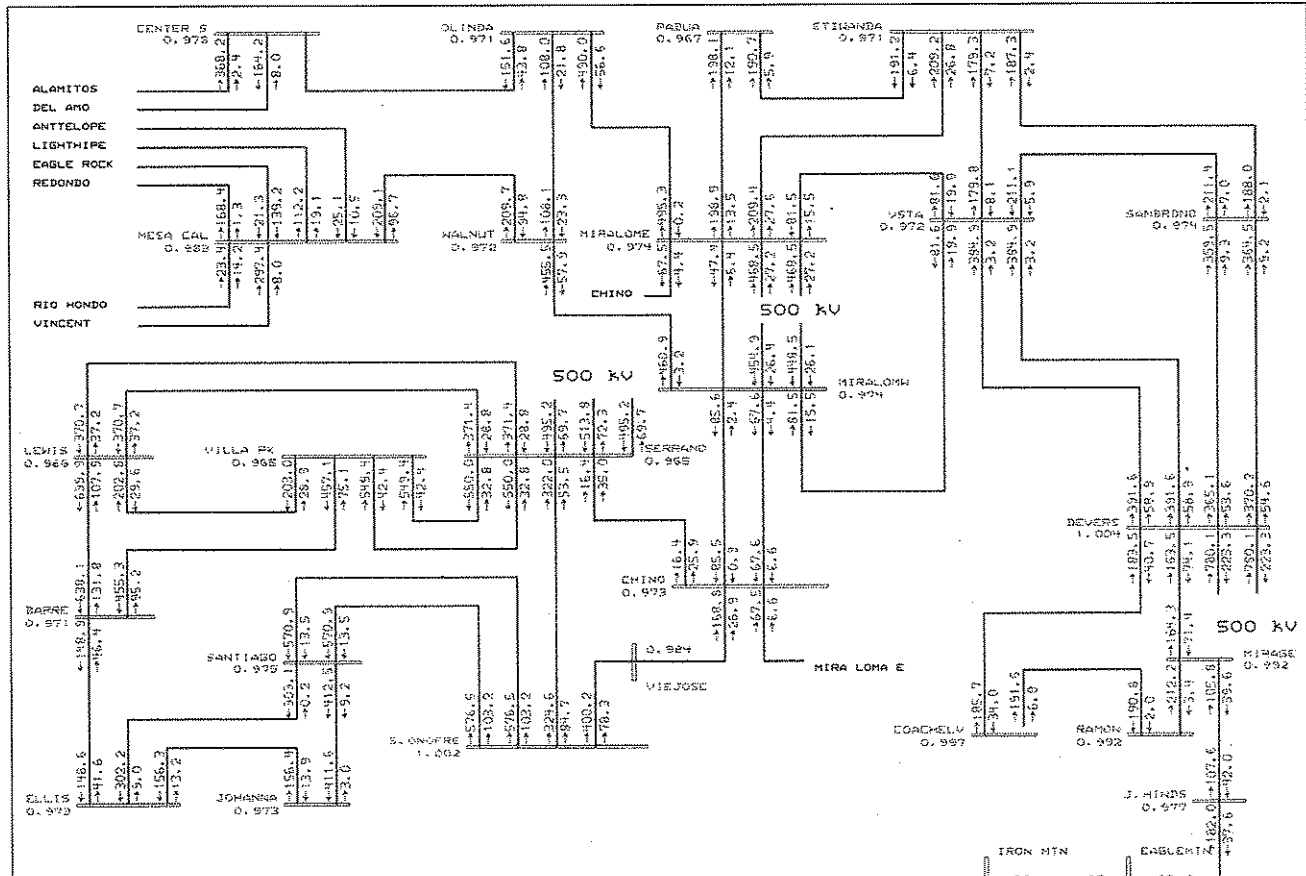


East of River (EOR, WECC Path 49)

Total EOR Flow:  
10000MW

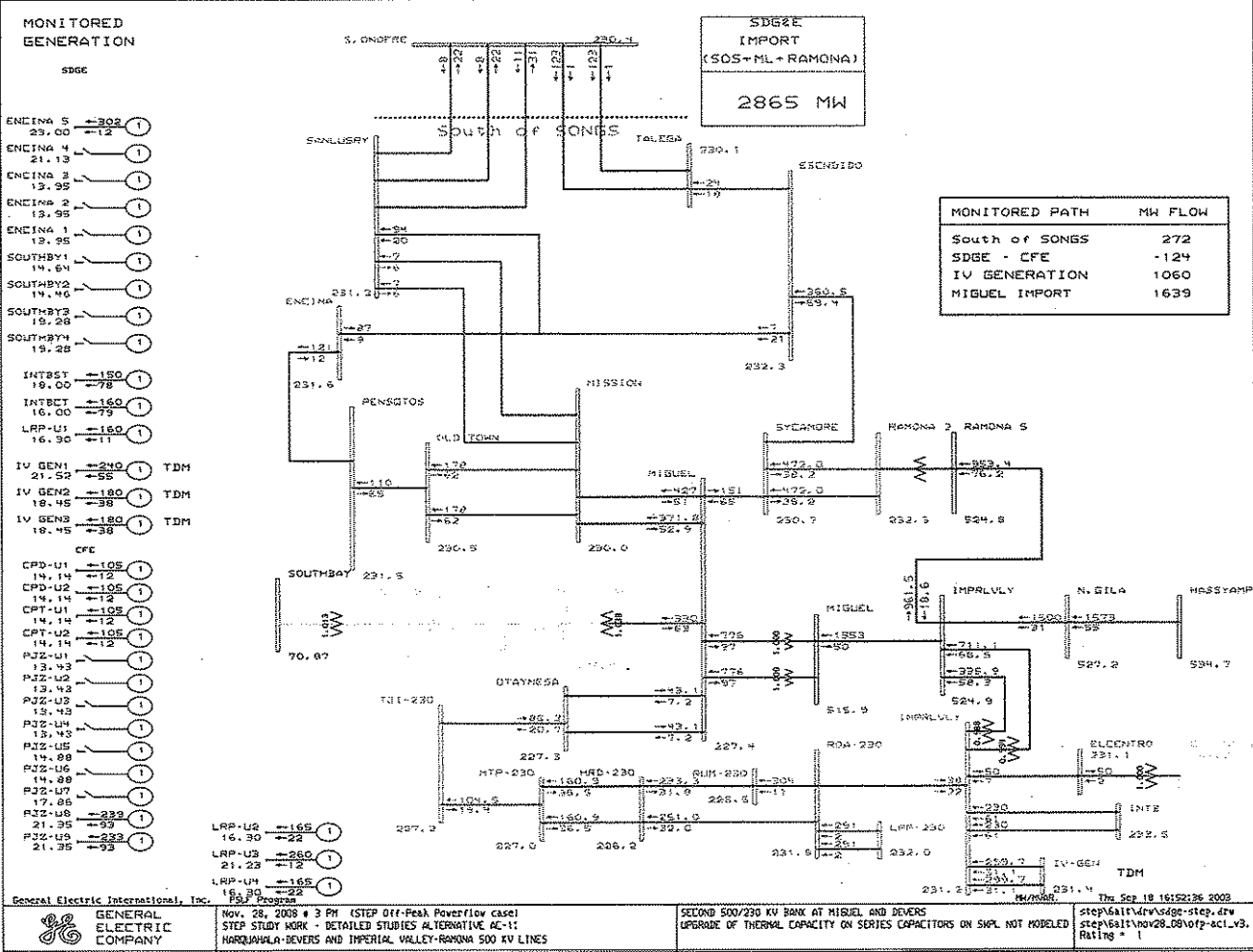






230 kV Southern California (SCE/IID/MWD)

<p>General Electric International, Inc. PSLE Program</p> <p><b>GENERAL ELECTRIC COMPANY</b></p>	<p>Nov. 28, 2008 # 3 PM (STEP Off-Peak Powerflow case)          STEP STUDY WORK - DETAILED STUDIES ALTERNATIVE AC-11          HARQUANLA-DEVERS AND IMPERIAL VALLEY-NARONA 500 KV LINES</p>	<p>SECOND 500/230 KV BANK AT NIGUEL AND DEVERS          UPGRADE OF THERMAL CAPACITY ON SERIES CAPACITORS ON SHPL NOT MODELED</p>	<p>TH M/W/R          The Sep 18 16:52:07 2008          step5a11nov28_08voff-act1.v3.          Rating = 1</p>
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## Exhibit 2

Each alternative route is described in detail below:

### Alternatives 1a and 1b - Pomerado Road to Miramar Area North

#### Option #1a – all underground

Exit Sycamore Substation overhead west on existing 230kv corridor to Pomerado Road just east of Legacy Road. Transition at Pomerado Road underground. Travel beneath Pomerado Road southwest to Interstate 15. The line could be attached to the side of the Pomerado/Miramar Road bridge over Interstate 15 (similar to the bridge crossing located within San Bruno County/State Park used for the 230 kV line in the Jefferson/Martin project). The route would then continue underground on Miramar Road (Pomerado Road transitions to Miramar Road just west of Interstate 15), north on Kearny Villa Road, west on Black Mountain Road, west on Activity Road to Camino Ruiz. Continue underground north on Camino Ruiz, west on Miralani Drive, west on Arjons Drive, south on Trade Place, west on Trade Street, south on Camino Santa Fe, west on Carroll Road (Carroll Road transitions into Carroll Canyon Road), west on Carroll Canyon Road to Scranton Road. At the intersection of Carroll Canyon Road and Scranton Road, the line would travel underneath a dirt utility access road to the existing overhead right of way containing multiple overhead transmission facilities on the east side of Interstate 805 south of Mira Mesa Blvd. The line would transition to overhead within SDG&E's right of way (ROW) and continue north overhead within the existing ROW and into Penasquitos substation.

#### **Option #1a Mileage Summary**

##### Overhead

Sycamore Substation to Pomerado & Legacy Roads	1.6 mi
Carroll Canyon & Scranton Roads to Penasquitos Substation	<u>2.2 mi</u>
Total Overhead	3.8 mi

##### Underground

Pomerado & Legacy Roads to Interstate 15	4.4 mi
Interstate 15 to Camino Ruiz & Activity Road	1.5 mi
Camino Ruiz & Activity Road to Carroll Canyon & Scranton Roads	4.8 mi
Utility Access Road at Carroll Canyon & Scranton Roads	<u>0.1 mi</u>
Total Underground	10.8 mi

As an alternative to traversing Interstate 15 on the side of the Miramar Road overpass, the line would transition to overhead to stretch across Interstate 15 and then return underground similar to the dam crossing within the Jefferson/Martin 230 kV project. Remaining route same as Option #1a above.

##### Overhead

Sycamore Substation to Pomerado & Legacy Roads	1.6 mi
Traverse Interstate 15 at Pomerado and Miramar Roads	0.1 mi
Carroll Canyon & Scranton Roads to Penasquitos Substation	<u>2.2 mi</u>
Total Overhead	3.9 mi

##### Underground

Pomerado & Legacy Roads to Interstate 15	4.3 mi
Interstate 15 to Camino Ruiz & Activity Road	1.5 mi
Camino Ruiz & Activity Road to Carroll Canyon & Scranton Roads	4.8 mi
Utility Access Road at Carroll Canyon & Scranton Roads	<u>0.1 mi</u>

## Exhibit 2

Total Underground 10.7 mi

### **Option #1b – combination underground/overhead**

Route from Sycamore Substation to Interstate 15 same as Option 1a above. After crossing Interstate 15, the route would then continue underground on Miramar Road (Pomerado Road transitions to Miramar Road just west of Interstate 15), north on Kearny Villa Road (which transitions into Black Mountain Road). Just south of the intersection of Carroll Centre and Black Mountain Roads, the line would enter the southeastern end of Carroll Canyon (aka Fenton Canyon) and transition to overhead lines within an existing ROW. Travel overhead west through Fenton Canyon. Exit Fenton Canyon west of Camino Santa Fe on south side of canyon. Transition to underground on Brown Deer Road just south of canyon edge. Continue underground South on Brown Deer Road, west on Carroll Canyon Road to the intersection of Carroll Canyon Road and Scranton Road, where the line would travel underneath a dirt utility access road to the existing overhead right of way containing multiple overhead transmission facilities on the east side of Interstate 805 south of Mira Mesa Blvd. The line would transition to overhead within SDG&E's ROW and continue north overhead within the existing ROW and into Penasquitos substation.

### **Option #1b Mileage Summary**

#### Overhead

Sycamore Substation to Pomerado & Legacy Roads	1.6 mi
Black Mountain Road to Brown Deer Road (through Fenton Canyon)	3.3 mi
Carroll Canyon & Scranton Roads to Penasquitos Substation	<u>2.2 mi</u>
Total Overhead	7.1 mi

#### Underground

Pomerado & Legacy Roads to Interstate 15	4.4 mi
Interstate 15 to Fenton Canyon entrance at Black Mountain Road	0.9 mi
Brown Deer Road to intersection of Carroll Canyon Road and Scranton Road	1.6 mi
Utility Access Road at Carroll Canyon & Scranton Roads	<u>0.1 mi</u>
Total Underground	7.0 mi

As an alternative to traversing Interstate 15 on the side of the Miramar Road overpass, the line would transition to overhead to stretch across Interstate 15 and then return underground. Remaining route same as Option #1b above.

#### Overhead

Sycamore Substation to Pomerado & Legacy Roads	1.6 mi
Traverse Interstate 15 at Pomerado and Miramar Roads	0.1 mi
Black Mountain Road to Brown Deer Road (through Fenton Canyon)	3.3 mi
Carroll Canyon & Scranton Roads to Penasquitos Substation	<u>2.2 mi</u>
Total Overhead	7.2 mi

#### Underground

Pomerado & Legacy Roads to Interstate 15	4.3 mi
Interstate 15 to Fenton Canyon entrance at Black Mountain Road	0.9 mi
Brown Deer Road to intersection of Carroll Canyon Road and Scranton Road	1.6 mi
Utility Access Road at Carroll Canyon & Scranton Roads	<u>0.1 mi</u>
Total Underground	6.9 mi

## Exhibit 2

### Option #1b-alt

Route from Sycamore Substation to Interstate 15 same as Option 1b above. After crossing Interstate 15, the route would then continue underground on Miramar Road (Pomerado Road transitions to Miramar Road just west of Interstate 15), north on Kearny Villa Road, west on Black Mountain Road, west on Activity Road to Camino Ruiz. Just north of intersection of Camino Ruiz and Activity Road, transition to overhead and join existing 69kv lines north to Fenton Canyon. Once in Fenton Canyon, travel overhead west through Fenton Canyon. Exit Fenton Canyon west of Camino Santa Fe on south side of canyon. Continue remaining route same as Option #1b above.

### **Option #1b-alt Mileage Summary**

#### Overhead

Sycamore Substation to Pomerado & Legacy Roads	1.6 mi
Traverse Interstate 15 at Pomerado and Miramar Roads	0.1 mi
Camino Ruiz & Activity Rd to Brown Deer Road (through Fenton Canyon)	2.7 mi
Carroll Canyon & Scranton Roads to Penasquitos Substation	<u>2.2 mi</u>
Total Overhead	6.6 mi

#### Underground

Pomerado & Legacy Roads to Interstate 15	4.3 mi
Interstate 15 to Camino Ruiz & Activity Rd	1.5 mi
Brown Deer Road to intersection of Carroll Canyon Road and Scranton Road	1.6 mi
Utility Access Road at Carroll Canyon & Scranton Roads	<u>0.1 mi</u>
Total Underground	7.5 mi

### **Option #1b-alt(2)**

Route from Sycamore Substation to intersection of Camino Ruiz and Activity Road same as Option 1b-alt above. Just north of intersection of Camino Ruiz and Activity Road, continue underground north on Camino Ruiz to Carroll Canyon Rd. Transition to overhead and join existing 69kv lines traveling west through Fenton Canyon. Remaining route same as Option #1b above.

### **Option #2d Mileage Summary**

#### Overhead

Sycamore Substation to Pomerado & Legacy Roads	1.6 mi
Traverse Interstate 15 at Pomerado and Miramar Roads	0.1 mi
Carroll Canyon Rd to Brown Deer Road (through Fenton Canyon)	2.5 mi
Carroll Canyon & Scranton Roads to Penasquitos Substation	<u>2.2 mi</u>
Total Overhead	6.4 mi

#### Underground

Pomerado & Legacy Roads to Interstate 15	4.3 mi
Interstate 15 to Camino Ruiz & Carroll Canyon Rd	1.7 mi
Brown Deer Road to intersection of Carroll Canyon Road and Scranton Road	1.6 mi
Utility Access Road at Carroll Canyon & Scranton Roads	<u>0.1 mi</u>
Total Underground	7.7 mi

## **Exhibit 2**

### **Alternatives 2a and 2b - MCAS Miramar**

These options propose to place the line underground within existing roads on the base. Since the base stretches from the Sycamore Canyon substation all the way to Interstate 805 where SDG&E has an existing ROW leading north into the Penasquitos substation, one of the options is to underground the transmission line all the way from Sycamore Canyon substation to a point where the base joins the existing ROW along 805. Other options include transitioning the underground portion from Sycamore Canyon (east Miramar area) to Miramar Road and continuing with alternatives 1a or 1b, above.

A paved road leads west out of the southern entrance to Sycamore Canyon substation. On some maps it is labeled as Spring Canyon. Spring Canyon intersects another paved road named Green Farms Road aka Creek Road. Creek road travels in a Southwesterly direction on east Miramar. As Green Farms Road gets closer to Interstate 15, there is a route that takes you over Interstate 15 on a bridge south of the Miramar Way overpass. Just west of this point the road meets up with Kearny Villa Road. The route would then run north until winding its way west again north of the runways and eventually all the way out to the eastern edge of Interstate 805 where it would join up with SDG&E's ROW. Other options shown on the map have the route exiting Miramar somewhere along the Northern edge of the base and joining with other proposed routes.

### **Alternative 3 - Mercy Road to Penasquitos Canyon Preserve**

The transmission line would transition from overhead to underground where the existing SDG&E ROW crosses Ivy Hill Drive near Scripps Poway Parkway. The line would then turn onto westbound Scripps Poway Parkway and run towards Interstate 15 for .8 of a mile. Scripps Poway Parkway changes its name to Mercy Road at Interstate 15. The route would continue underground, under the Interstate 15 overpass, westward on Mercy Road 1.3 miles until the intersection with Black Mountain Road.

At the intersection of Black Mountain Road and Mercy Road, the line follows Black Mountain Road northbound approximately 800 feet north until it intersects the south side of Canyonside Park where the entrance road is located. (Canyonside Park Drive). Just before the entrance, there is a bridge that crosses the stream that runs through Los Penasquitos Canyon Preserve. The line could likely be strapped to the bottom side of the bridge, similar to what SDG&E recently did as part of the Otay Mesa Power Purchase Agreement Transmission project at Pacific Coast Highway and Friars Road.

Upon entering Canyonside Drive, the route turns to the west again andAt this point, it crosses proceeds to follow Canyonside Park Drive into the preserve, until the existing paved road terminates. Canyonside Park Drive is approximately one half mile long from Black Mountain Road west, to the point at which it terminates. The road then turns to gravel for a short distance until reaching the Los Penasquitos Canyon Adobe Ranch House. The ranch house and other buildings are south of this point and well away from the line that would continue westerly within the preserve for approximately a few hundred feet until it meets up with an existing trail. The line would then follow the existing trail and a spur of this trail to the south, keeping the greatest distance from homes. The distance on the trail to where the line would join up with the preferred route is approximately a quarter mile.

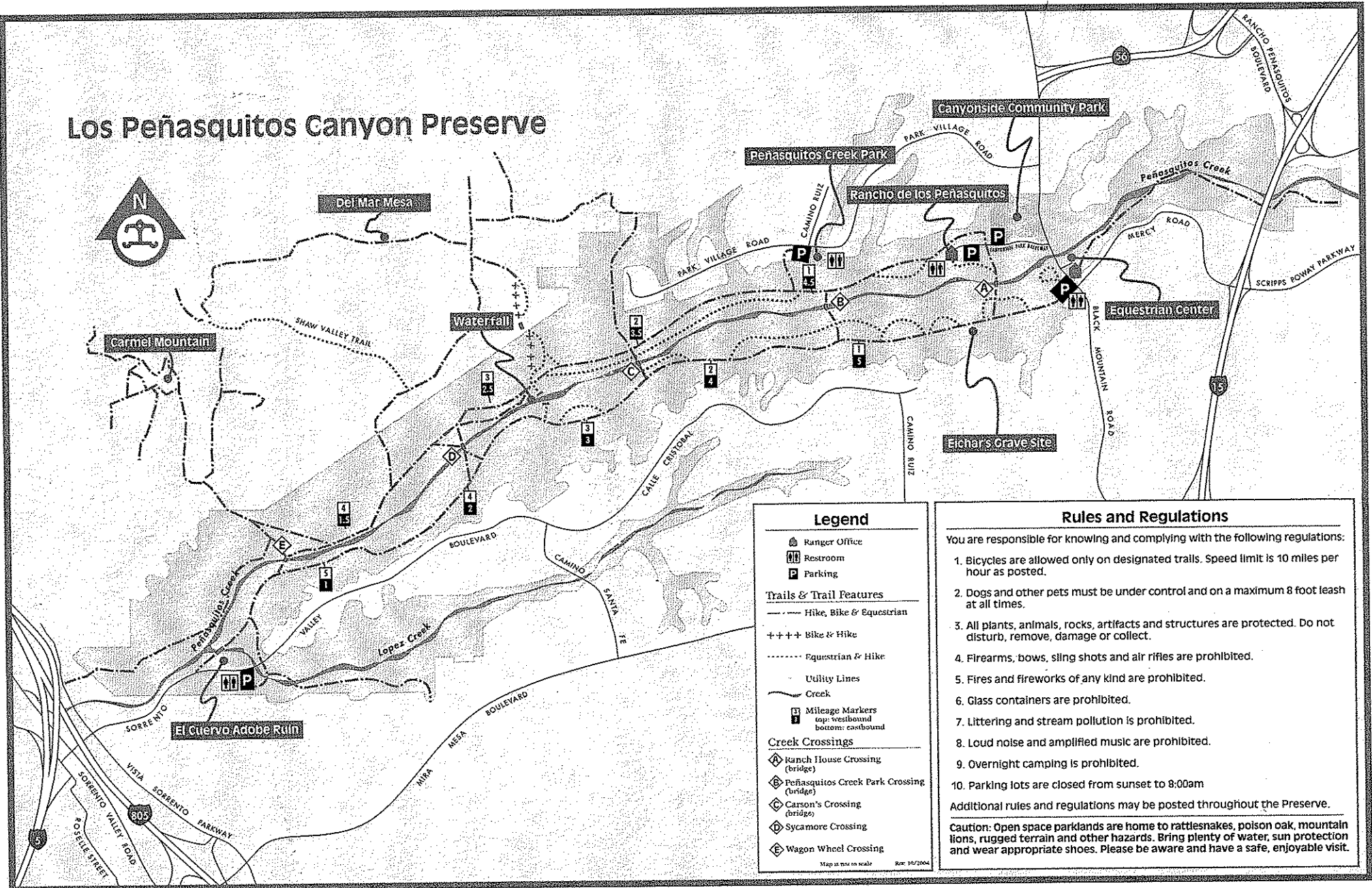
## **Exhibit 2**

### **Alternative 4 - Rancho Penasquitos Blvd. Bike Path Adjustment**

The adjustment moves the route to a bike path that runs along the south side of State Route 56 freeway (SR 56) until the elevation of the bike path meets up with the elevation of the ROW approximately a quarter mile west of Rancho Penasquitos Blvd. The transmission line could then easily move back into the ROW and continue westward as described in the preferred route.

The route would start where SDG&E proposes to place the transition tower near Chicarita. Instead of heading westerly across Rancho Penasquitos Blvd., the line would travel northerly for approximately 200 feet until the entrance of the bike path onto Rancho Penasquitos Blvd. The line would then run under the bike bath as described above.

# Los Peñasquitos Canyon Preserve



## Legend

- Ranger Office
  - Restroom
  - Parking
- Trails & Trail Features**
- Hike, Bike & Equestrian
  - Bike & Hike
  - Equestrian & Hike
  - Utility Lines
  - Creek
  - Mileage Markers  
top: westbound  
bottom: eastbound
- Creek Crossings**
- Ranch House Crossing (bridge)
  - Peñasquitos Creek Park Crossing (bridge)
  - Carson's Crossing (bridge)
  - Sycamore Crossing
  - Wagon Wheel Crossing

## Rules and Regulations

You are responsible for knowing and complying with the following regulations:

1. Bicycles are allowed only on designated trails. Speed limit is 10 miles per hour as posted.
2. Dogs and other pets must be under control and on a maximum 8 foot leash at all times.
3. All plants, animals, rocks, artifacts and structures are protected. Do not disturb, remove, damage or collect.
4. Firearms, bows, sling shots and air rifles are prohibited.
5. Fires and fireworks of any kind are prohibited.
6. Glass containers are prohibited.
7. Littering and stream pollution is prohibited.
8. Loud noise and amplified music are prohibited.
9. Overnight camping is prohibited.
10. Parking lots are closed from sunset to 8:00am

Additional rules and regulations may be posted throughout the Preserve.

**Caution:** Open space parklands are home to rattlesnakes, poison oak, mountain lions, rugged terrain and other hazards. Bring plenty of water, sun protection and wear appropriate shoes. Please be aware and have a safe, enjoyable visit.



## Exhibit 4



**Corner Pomerado and Legacy Roads. Overhead line would transition to underground at this point and head northwest on Pomerado Road.**



**Vacant pad just below Pomerado Road. Potential transition tower site.**

**Exhibit 4**



**Typical view of Pomerado Road (looking west)**



**Intersection of Pomerado Road and Scripps Ranch Blvd  
(looking east)**

**Exhibit 4**



**Pomerado Road and Miramar Road overpass at  
Interstate 15 (looking east).**



**Activity Road (looking east)**

**Exhibit 4**



**Carroll Canyon Road (looking east)**



**Corner of Carroll Canyon and Scranton Roads (just east of SDG&E ROW access road)**

**Exhibit 4**



**View of access road leading to SDG&E North-South  
ROW east of Interstate 805**



**SDG&E North-South ROW east of Interstate 805 looking  
south**

**Exhibit 4**



**SDG&E North-South ROW east of Interstate 805 looking north**



**Vacant position on lattice tower located in SDG&E North-South ROW east of Interstate 805**

## Exhibit 5



**View of existing 69 kv lines through Fenton Canyon at the intersection of Camino Ruiz and Carroll Canyon Rd. Lines heading south to Miramar Substation are located just below green arrow.**



**View of existing 69 kv lines through Fenton Canyon just north of Carroll Canyon Rd**

**Exhibit 5**



**View of existing 69 kv lines through Fenton Canyon looking west.**



**Closeup view of existing 69 kv lines through Fenton Canyon.**



**Exhibit 5**



**View of rock quarry operation in Fenton Canyon. Fenton substation is below green arrow.**



**Additional rock quarry operations in Fenton Canyon. Existing 69 kv lines are below green arrow.**

**Exhibit 5**



**Existing 69 kv lines in Fenton Canyon. View is from Camino Santa Fe looking east.**



**View of 69 kv lines leaving Fenton Canyon to the south. Lines traverse canyon and cross Brown Deer Road.**

**Exhibit 6**



**Corner of Ivy Hill Drive and Scripps Poway Parkway (SPP)  
Proposed 230 kv line would transition from overhead to  
underground at this point and head west on SPP to I15  
where SPP changes name to Mercy Road**



**Scripps Poway Parkway and Interstate 15 underpass (looking west)**

**Exhibit 6**



**Typical view of Mercy Road (looking east)**



**Black Mountain Road at Canyonside Park Drive Entrance**

**Exhibit 6**



**Canyonside Park Drive looking east towards entrance at  
Black Mountain Road**



**Access Road leading to Rancho Penasquitos Ranch House  
(west of Canyonside Park)**

**Exhibit 6**



**Area just north of Rancho Penasquitos Ranch House and end of gravel road (looking east)**



**Looking west in Los Penasquitos Canyon (just west of Ranch House access road)**

**Exhibit 6**



**Penasquitos Canyon Northside trail (looking west)**



**Penasquitos Canyon Northside trail (looking east)**

**Exhibit 6**



**Penasquitos Canyon Northside trail (looking west)**



**Penasquitos Canyon Northside trail (looking east)**



## **Exhibit 6**



**Penasquitos Canyon Northside Trail (looking east). Site where preferred underground route enters canyon.**



**Wetland area that preferred underground route will traverse**

**Exhibit 6**



**Wetland/creekbed area where preferred route will traverse**

San Diego Public Library  
Rancho Penasquitos Branch

# FINAL ENVIRONMENTAL IMPACT REPORT

**STATE ROUTE 56  
BETWEEN BLACK MOUNTAIN ROAD  
AND I-15 IN SAN DIEGO**

**For Reference**

NOT TO BE TAKEN FROM THIS ROOM

**CALIFORNIA DEPARTMENT  
OF TRANSPORTATION**



## Other Design Features

Detours - Minor detours would be required during construction. No streets will be closed permanently or during construction and the grading limits are expected to be within freeway right of way.

Material Site - Fill material will be acquired from within the reserved corridor.

Utility Involvement - An existing aqueduct with 69-inch and 96-inch lines will be encased in a concrete box with provision for an additional 108" pipe at cost to the County Water Authority (see Figure 8). This would not constrain alternatives for the new line. Because of the existing utility corridor it is not logical for the new line to be on new alignment. Construction of the additional pipe outside SR 56 right of way will require separate environmental review by others.

Construction Phasing - SR 56 will be constructed in stages. The initial stage would be four through lanes within grading and right of way for six ultimate through lanes. The second stage would construct six ultimate through lanes. A typical cross section is shown on Figure 9.

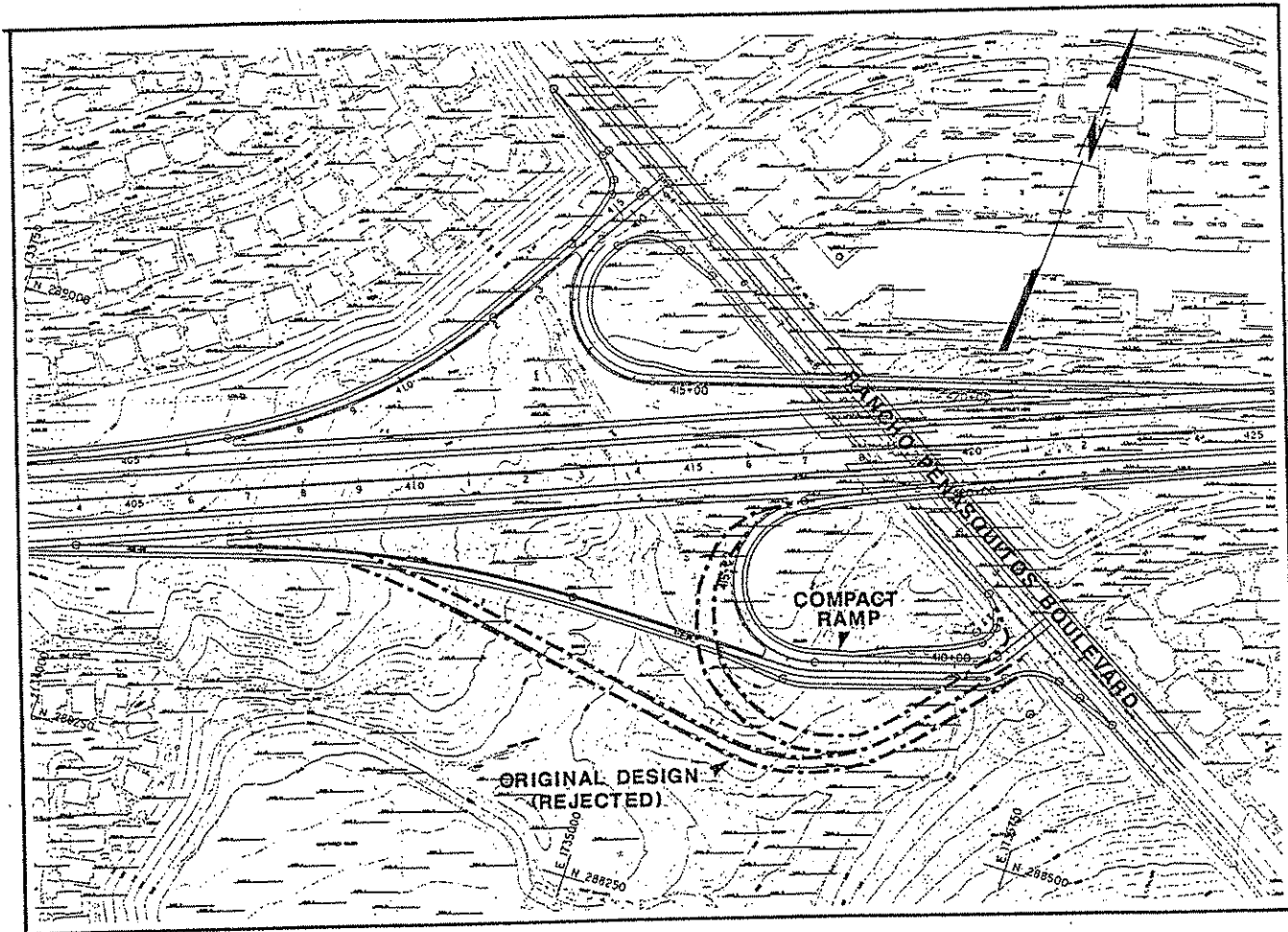
Median Width Variations - The median width of the proposed project varies, depending on the right of way reserved by the City of San Diego. The wider width allows flexibility to add possible future lanes. Consideration was given to maintaining the narrow width throughout if this would reduce significant impacts such as noise and visual. This reduction would not be achievable.

Ramp Metering - All entrance ramps will be constructed with provision for ramp metering, to be installed during a future construction stage.

## Design Features to Reduce Environmental Impacts

- 1) Sound barriers, earthen and masonry (or possibly transparent), will be constructed to mitigate traffic generated noise impacts upon the residential areas.
- 2) Construct a 14-foot wide two-way bicycle path (10 feet paved), along the south side of the freeway between Black Mountain Road and Rancho Penasquitos Boulevard. From Rancho Penasquitos Boulevard to the end of Azuaga Street restriping will accommodate two one-way bike lanes. Between Azuaga Street and I-15 a 14-foot wide two-way bicycle path (10 feet paved), along the south side of the freeway, will be constructed. The newly constructed sections will be generally located on the freeway slope, separated horizontally by at least 9 feet from the edge of shoulder, or within the San Diego Gas and Electric easement as noted on Figures 11 through 15. Pedestrians could also use the proposed bicycle path. Where ramps intersect city streets, wheelchair ramps will be constructed. This path will be maintained by others.
- 3) Construct a compact ramp design for the eastbound entrance ramp at Rancho Penasquitos Boulevard to reduce impact to riparian habitat. Figure 16 shows a comparison of the Build Alternative and the Original Ramp Design (Rejected). The compact ramp design will reduce riparian habitat impact from 2.2 acres to 1.2 acres.
- 4) Construct 1.5 acres of mitigation riparian woodland habitat.
- 5) Acquire at least 26 acres of Diegan Coastal Sage Scrub/Gnatcatcher habitat.

**FIGURE 16  
ORIGINAL RAMP DESIGN COMPARISON**



### **Right of Way**

Most right of way will be dedicated to the City of San Diego by local developers. In turn, the City will furnish all right of way required for the project to the State at no cost to the State (excluding Gnatcatcher mitigation property). Figures 17 through 22 show proposed right of way requirements on oblique aerial photographs.

Minor riparian mitigation will be required outside of State right of way. The work will consist of replanting and minor regrading of creek banks within the Camino Ruiz open space corridor. This area is owned by the City of San Diego and designated as a major pedestrian pathway in the Rancho Penasquitos Community Plan. Details will be worked out with the City of San Diego.

A right of way issue that is still unresolved and under study is: Placement of sound walls off State right of way. A temporary construction easement of nominal width will be necessary. This sound wall is subject to community acceptance.

**Expansive Soils.** The paleosol expected above the granitic rock will probably be extremely expansive. If it is exposed on the traveled way it will be over excavated and replaced with sandy material. If it is exposed on the slopes the clay could creep and slump with time. Here too, the expansive clay will be replaced to preserve the slopes longer. Expansive clay which is to be used as fill material will be well mixed with sandy material to prevent concentrating expansive material within the fill.

**Geologic Hazards.** During a severe shaking, the Rose Canyon Fault could cause some slopes to slump, but no other damage would be anticipated. Seismic hazards related to earthquakes can include ground rupture, slope failure, liquefaction, structural damage and differential settlement.

1. Ground rupture due to fault displacement is not expected because no faults are known to lie within the project limits.
2. Slope failures due to seismic shaking is a possibility here as on any slope. Besides the slopes with paleosol, no other weak slopes are apparent on the proposed project, but surface slumping could occur on any steep slope if it happens to be wet.
3. Liquefaction can be disregarded as a possible hazard on this project. There is no high ground water table in these hills.
4. Structural damage caused by ground shaking is not expected because damage to bridges is generally caused by ground accelerations that exceed 50% of gravity. Maximum accelerations expected at the project site are 25% of gravity. Caltrans Standard Specifications will be adhered to in constructing structurally sound, earthquake-resistant bridges, ramps, and roadway, for maximum safety to the traveling public.
5. Differential settlement in fill could occur if the ground below the fill is not prepared properly. For this reason, the canyons will be stripped of vegetation, compressive soil and alluvium prior to fill being placed.

## WATER QUALITY

The existing storm drainage system east of Rancho Penasquitos Boulevard is capable of handling runoff from a typical storm, but may not be capable of handling the expected runoff from a 100-year frequency discharge. The occurrence of a 100-year frequency discharge may cause the drainage system to fail. If the system fails, runoff will begin to pond in sumps and other low-lying areas, and will eventually begin to flow south, over land and across the shopping center pad. The proposed project will not directly contribute to flooding in this area but has potential to indirectly aggravate a flood resulting from the inadequate design of the existing drainage system. The proposed project will create fill slopes that eliminate the natural depressed water storage area available south of the shopping center pad. The project will include drainage features to avoid worsening existing conditions.

**Surface Water Impacts.** Surface water within the proposed project site is found at three separate sites within the right of way, and will be impacted as follows:

The first site is caused by natural drainage from Black Mountain exiting from the drainage culvert near Rancho Penasquitos Boulevard. The proposed project will extend this culvert where fill operations are proposed. Water will exit from the culvert on the south side of the roadway with the same orientation as currently exists. A second creek originates where a culvert exits from underneath Rancho Penasquitos Boulevard. These two creeks will merge and provide water for the riparian revegetation area found just to the west of Rancho Penasquitos Boulevard. Excess water will be drained by an existing storm drain inlet at the south side of the right of way.

A second site is found approximately 500 feet east of Salmon River Road. The proposed project will extend the northern storm drain outlet to the south side of the roadway. The water will then exit and flow into the small riparian area with the same orientation as now exists. Excess water will continue to drain into the storm drain inlet on the south side of the right-of-way.

The third site is located about 1600 feet west of Black Mountain Road. This site will not be affected by the proposed project, but will be affected by future extension of SR 56 into the Future Urbanization Area (FUA).

**Contamination.** City of San Diego waste treatment pumping facility #66T exists at 14034 Barrymore Street in Rancho Penasquitos. Due to distance and the topography between the pumping facility and the proposed project, there is very little chance that any overflow from this facility will impact the surface water of the proposed project right-of-way.

**Stream Modification.** The project encroaches upon the creeks in the area of Rancho Penasquitos Boulevard. This encroachment is discussed above and in the "Southern Willow Scrub Riparian Habitat" section. A Section 1601 notification will be required from the State Department of Fish and Game; a Section 404 permit will be required from the U.S. Corps of Engineers (expected to be of nationwide category).

**Impacts Upon Surface Water Caused By Construction.** Newly constructed cut and fill slope faces will cause a short-term increase in sediment. This will be mitigated by revegetation of cut/fill slopes, which will minimize erosion. After slopes have been revegetated, sedimentation will return to pre-project levels.

Standard specifications for water quality maintenance will be strictly adhered to in all situations where water is present, including flowing or ponded streams and riparian woodlands. Section 7-1.01G of Caltrans 1988 Standard Specifications requires the contractor to submit a water pollution control plan prior to the start of work. This plan will delineate measures to protect the quality of water during construction.

## AIR QUALITY

The proposed project is in an area which has transportation control measures in the State Implementation Plan (SIP), which was approved by the Environmental Protection Agency (EPA) on December 28, 1983. The EPA has subsequently issued a call for SIP revision as announced in the Federal Register on September 7, 1988 (53 FR 34500). The Federal Highway Administration (FHWA) has determined that both the Regional Transportation Plan and the Transportation Improvement Program (TIP) conform to the SIP. The FHWA has further determined that this project is included in the TIP for the San Diego region. Therefore, pursuant to 23 CFR 770, this project conforms to the SIP.

**Exhibit 8**



**Southeast Corner of Rancho Pensaquitos Blvd and Hwy 56.  
Proposed Route 4 would traverse CALTRANS bike path  
avoiding riparian area to the south of off ramp**



**CALTRANS bike path east of Hwy 56 (looking west)**



## **Exhibit 8**



**Riparian area west of Rancho Penasquitos Blvd and south of Hwy 56. Current preferred SDG&E route traverses through this area.**