2017 AWARD APPLICATION

1 Executive Summary

The $72 million La Pata Avenue Extension Project greatly improves regional mobility in South Orange County by extending La Pata Avenue approximately two miles through the Prima Deschecha Landfill from the Cities of San Juan Capistrano to San Clemente. The extension provides a new direct connection to retail centers, medical facilities, schools, recreational opportunities, emergency evacuation routes, residential communities, the landfill and more. The project accomplishes the following: (1) widens La Pata Avenue from three to five lanes from south of SR-74 in the County of Orange to the existing road terminus at the County's Prima Deshecha Landfill; (2) implements a gap closure by constructing four new lanes from the existing terminus to the intersection of Calle Saluda and Avenida La Pata in the City of San Clemente; and (3) extends Camino Del Rio as a four lane roadway from its existing terminus in the Forster Ranch community to the new Avenida La Pata. The project also incorporates multi-modal components by constructing new Class II Bikeways, pedestrian sidewalks and re-establishes highly trafficked hiking trail connections.

The project included millions of cubic yards of earthwork in hillside terrain. Adverse geological conditions included buttress excavations and landside stabilization; removal and relocation of municipal solid waste and constructing clean closure cover over waste remaining in place; two cast-in-place reinforced concrete bridge overcrossings; five 30 foot diameter corrugated structural steel plate undercrossings; preservation and removal of archaeological /paleontological finds encountered during grading; relocation/replacement electrical transmission and distribution utilities linking San Diego and Orange Counties; installation of reinforced concrete pipe storm drains and culverts; installation of six multipurpose water quality treatment/flood detention basins; one new traffic signal, two signal modifications and reconfiguration of an existing intersection; implementation of environmental mitigation measures; installation of new sidewalks and bikeways; construction phasing and temporary traffic handling.

This being the County's most ambitious and expensive capital improvement project to date, required strategic budgeting techniques and forethought. The County developed an innovative finance plan that allowed for the project's construction amidst falling gas tax revenue, while maintaining sufficient capital budget without delaying other programed capital improvements projects.

Early community and stakeholder outreach coupled with regular and timely project updates allowed the County to engage the surrounding community and manage expectations amidst the shear scope of construction activities.

Through the County's exemplary efforts, we reduced drive times (from 30 minutes to 5 minutes) and congestion; improved driver, bicycle and pedestrian safety; and ultimately reduced greenhouse gas emissions.

La Pata Avenue Extension Project

2 Project Description

The long awaited and highly anticipated La Pata Avenue Extension Project (Project) eliminates an existing gap in the County of Orange's arterial highway system and establishes a connection between Ortega Highway (State Route 74 (SR-74)) to the north and Avenida Vista Hermosa to the south. The Project provides a parallel and alternative route to Interstate 5 (I-5) in southern Orange County and provides arterial access to existing and proposed developments.

The Project is located in the City of San Clemente and unincorporated Orange County. The Project accomplishes the following: (1) widens La Pata Avenue from three to five lanes from approximately 2,700 feet south of SR-74 in the County of Orange to the existing road terminus at the County's Prima Deshecha Landfill; (2) implements a gap closure by constructing four 4 new lanes from the existing terminus to the intersection of Calle Saluda and Avenida La Pata in the City of San Clemente; and (3) extends Camino Del Rio as a four lane roadway from its existing terminus in the Forster Ranch community of San Clemente to the new Avenida La Pata. The Project also incorporates multi-modal components by including fully striped Class II Bikeway, pedestrian sidewalks and re-establishes highly trafficked hiking trail connections.

The Project is designed to complete the planned improvements as identified in the County of Orange Master Plan of Arterial Highways (MPAH). The improvements will reduce congestion and improve regional mobility in South Orange County by providing a north-south alternative to the I-5 between Ortega Highway to the north and Avenida Vista Hermosa to the south. The Project is designed to ease traffic congestion while ensuring minimal environmental impact on the area's high quality of life. Particular attention was placed on minimizing adverse visual, noise, air quality, light and glare impacts on the communities.

The original La Pata Avenue served as an access road to the Prima Deshecha Landfill property, where the roadway ended. The area north of the landfill, in the City of San Juan Capistrano, slowly developed and the road segment began to serve a residential community, a high school, and a green waste processor. To the south in the City of San Clemente, a residential and commercial developments also emerged which contained the south end of the roadway section name Avenida La Pata. At that time, the closest connection between the two cities was the Interstate 5 (I-5) freeway which is a few miles west and is often heavily congested.

La Pata Avenue has been shown on the MPAH in various configurations since 1963 and in the constructed alignment since 1981. Again, this long awaited and highly anticipated Project has been in both the County's and public's minds for well over 35 years. It links the last two cities in South Orange County over rugged, undeveloped backcountry terrain and truly fulfills its project slogan of "Connecting Communities."

2.1 Detailed Project Description

The Project's northern point begins just south of Ortega Highway at its intersection with Antonio Parkway and La Pata Avenue. From this point, La Pata Avenue currently continues

south as an existing three lane paved roadway through unincorporated territory, just east of the City of San Juan Capistrano. The Project will add two new lanes to this section of roadway for a total of five lanes (including a climbing lane for vehicles bound for the landfill site). This roughly 1.8-mile existing section of La Pata Avenue currently ends at the landfill site. From that point, a new four-lane La Pata Avenue would extend south just east of the existing Southern California Edison and San Diego Gas and Electric power-line corridor. The Project remains east of the power-line facilities as currently shown on the MPAH as it enters San Clemente's northern city limits. As the project nears the Talega residential development, the roadway curves west away from the Talega development as it crosses the power-line corridor. The project maintains a minimum 350 foot buffer from the nearest residential property to La Pata Avenue. Shortly after it crosses the power-line corridor, it turns south to connect with existing Avenida La Pata at Calle Saluda in San Clemente.

The project included approximately 15 million cubic yards of earthwork in hillside terrain. Adverse geological conditions included buttress excavations, alluvial removals and landside stabilization; removal and relocation of more than 850,000 cubic yards of municipal solid waste and constructing clean closure cover over waste remaining in place; two cast-in-place reinforced concrete bridge overcrossings; five 30 foot diameter corrugated structural steel plate undercrossings; preservation and removal of archaeological/paleontological finds encountered during grading; relocation/replacement of two steel lattice towers and wooden frame structures supporting electrical transmission conductors linking San Diego and Orange Counties; installation of more than 15,000 linear feet of reinforced concrete pipe storm drains and culverts (ranging in sizes up to 108-inches in diameter); installation of six multipurpose water quality treatment/flood detention/hydromodification basins; one new traffic signal, two signal modifications and reconfiguration of an existing intersection; implementation of environmental mitigation measures; installation of new sidewalks and bikeways; construction phasing and temporary traffic handling.

3 Improves the Preservation, Safety, Access and Overall Quality

Particular attention was placed on minimizing adverse visual, noise, air-quality, light and glare impact on surrounding communities. Since the project is in the State of California, there was no shortage of strict regulatory compliance and oversight requirements that were adhered to. The project was subject to the California Environmental Quality Act (CEQA), a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. This process yielded the issuance of the following permits, all with their own set, and sometimes competing provisions: Clean Water Act Section 401 Permit from the California Regional Water Quality Control Board (CRWQCB), Section 1602 Streambed Alteration Agreement from the California Department of Fish & Wildlife (CDFW), Section 404 Permit from the US Army Corps of Engineers (USACE), San Diego Regional Water Quality Board (SDRWQB) General Waste Discharge Requirements Order No. R9-2012-0001, South Coast Air Quality Management District (SCAQMD) Rule 1150 Excavation Plan, San Diego

Dewatering & De Minimus Discharges Permit, National Pollutant Discharge Elimination System (NPDES) Requirements (MS4), General and Industrial General Permits, and other local permits.

OC Public Works left no stone unturned. The following environmental factors were assessed: land use, traffic, air quality, noise, aesthetics, biological resources, geology & soils, hazards & hazardous materials, population & housing, hydrology & water quality, public services & utilities, recreation, agricultural resources, mineral resources and global climate change. In particular, the road height and alignment were carefully selected to provide the least impact to surrounding residents. Numerous public outreach meetings and studies (view shed, odor, noise, etc.) were conducted throughout different phases of the project that helped us fine-tune the design and mitigation measures. The final roadway elevation and alignment was strategically selected to eliminate visual and noise impacts to the greatest extent possible for the closest communities.

A Habitat Mitigation & Monitoring Plan was developed to ensure that endangered and sensitive plants and animals were identified, avoided and protected. Our Biological Monitors would delineate extensive buffer areas whenever any of the following were encountered: Thread-Leaved Brodiaea (plant), Coastal Sage Scrub (plant), Western Spadefoot Toad (amphibian), Coastal California Gnatcathcer (bird), and the Least Bell's Vireo (bird). The Project was environmentally regulated quite heavily which has been a challenge to plan for since groundbreaking.

An earthmoving project of this magnitude through virgin territory undoubtedly required continuous archeological and paleontological (A/P) monitoring and reporting. During all grading activities, full-time A/P monitors were onsite and redirecting, and sometimes stopping, work when positive finds were unearthed. Seven to ten millions of years ago, the entire Project site was approximately 3,000 feet underwater and full of aquatic life. Noteworthy project findings consisted of fossilized leatherback turtles, walruses, whales, seals, dolphins, fish, and droppings. It was a treasure trove of regionally significant specimens for our local A/P community, but sometimes the findings came at a time and cost expense to the County since work was halted until the findings could be safely collected and moved offsite. The findings will eventually be processed down, catalogued, added and curated into the local County of Orange collection.

In general, roadway safety was increased through the implementation of a Class II Bikeway, dedicated pedestrian sidewalks, 2 above grade separation bridge structures with dedicated on/off ramps, 2 below grade tunnel crossings, highway lighting, improved intersection traffic design and added traffic regulatory signage.

4 Innovative & Unique

This being the County's most ambitious and expensive capital improvement project to date, required strategic budgeting techniques and forethought. This coupled with the dynamic and decreasing State Gas Tax revenue, afforded the County an opportunity to develop an innovative finance plan that would not only allow for the Project to be constructed, but would also maintain sufficient capital budget to deliver all other planned capital improvements projects. Funding was secured from the following sources: Renewed Measure M (M2), State Proposition 1B Funds, La Pata Road Fee Program, OC Waste & Recycling, City of San Juan Capistrano, City of San Clemente, OC Public Works Road Fund (State Gas Tax), and Ladera Ranch & Rancho Mission Viejo Community Facilities Districts (CFDs).

OC Public Works developed and implemented a slew of financial strategies that closed the gap on what turned into a bigger funding deficit (due to Gas Tax revenue) than originally expected. Some of these innovative financial strategies included zero-based budgeting, fund reallocations, pavement management reductions, subsidy reductions, bond initiatives and smoothing legislation.

On top of dividing the project into 3 distinct phases, OC Public Works developed and implemented financial strategies that closed the gap on a bigger funding deficit than originally expected due to gas tax revenues. Some of these innovative financial strategies included zero-based budgeting, fund reallocations, pavement management reductions, subsidy reductions, bond initiatives and smoothing legislation. Although the project was fully funded, the funding obligations were not expected until a later date and dependent on other outside factors. These innovative funding measures provided for a much smoother and predictable cash-flow model that reduced our financial exposure with our capital improvement program.

Since the construction of this Project spanned over a few years and is heavily tied into raw materials/commodities, it was imperative that the County incorporate contract provisions that would help address this and alleviate drastic changes to the original bid prices. The volatile prices of these commodities and fuel made estimation of these costs more difficult to determine over an extended period of time. In a proactive approach, the County included an innovative specification for compensation adjustments for price fluctuations. The specification targeted material cost changes associated with asphalt concrete, structure concrete, fuel and certain steel items. The specification allows for adjustments based on actual average contract prices and price indices. This basically allowed for the contractor to recover extra expenses due to increasing associated costs or the County/Owner to benefit from savings due to decreasing associated costs.

Unique characteristics of the project included lowering a portion of the existing roadway while maintaining traffic operation; constructing the new roadway with a grade-separated bridge overcrossing in the front entrance of the County's Prima Deshecha Landfill; removing and

relocating more than one billion pounds of municipal solid waste from the front of the landfill, constructing a clean closure cover, and replacing a portion of the waste volume with soil to support the new roadway; phased grading to create sites for the relocated (replacement) steel utility poles while protecting the existing towers and wooden structures, then completing the grading, retaining wall, and roadway construction while protecting the new poles, after the existing towers and wooden structures were removed; grading to stabilize an existing landslide and provide a sufficient volume of excavated soil to complete the roadway embankments (i.e. balanced earthwork). Challenges and constraints included keeping the existing roadway open to traffic during construction; maintaining unhindered operations of the landfill, coordinating construction with San Diego Gas & Electric's transmission pole installation and conductor relocations so that only brief and planned outages occurred; adjustment of earthmoving operations due to utility delays, and failures of temporary removal slopes.

5 Grade Separated Structures

Bridge 4 @ San Clemente

Bridges 1 & 2 @ Prima Deshecha Lanfill

Bridge 1 @ Prima Deshecha Landfill

Four major bridges/tunnels were erected to be grade separation structures for the Project and landfill operations. They were environmental mitigations measures that were implemented to mitigate for traffic congestion, safety, and utility/trail connectivity in and around the area. The primary purpose of the grade-separated crossings is to provide a circulation plan that facilitates the safe, convenient, and efficient movement of various types of vehicles between the PDL zones without having to cross La Pata Avenue at grade and interrupt traffic flow. Bridges 2 & 3, which are 60-foot diameter corrugated structural steel plate (CSSP) access tunnels, also provide an ancillary benefit in the form of being a wildlife corridor connection between the east and west side of the roadway.

Bridge 1 over La Pata Avenue at the entrance of the PDL serves dual purposes. The bridge overcrossing will initially provide grade-separated vehicular access across La Pata Avenue for landfill operation personnel to efficiently circulate between Zones 1 and 4 as well as for the public to have access to the landfill service areas. Ultimately in the future when both landfill zones are closed, the bridge will serve as a trail crossing/connection for the Prima Deshecha

Riding & Hiking Trail as well as a possible Class I Bikeway crossing that is planned along the west side of La Pata in the north segment and the trail that is planned on the east side of La Pata around the perimeter of landfill Zone 4.

On- and off-ramps provide safe ingress and egress for waste hauling vehicles (both private and public) that will be accessing the Landfill site from the north and south once the project is complete. This also provides safe ingress into the site without causing stacking of waste hauling vehicles on La Pata Ave.

Bridges 2 & 3 are technically CSSP Tunnels. While the tunnel undercrossing provide a grade separated crossing under La Pata Avenue for Landfill grading and refuse truck crossings from Zone 1 to Zone 4, they also serve as a passage for wildlife in the area. The tunnels are expected to facilitate wildlife movement between the relatively small preserved open spaces west of La Pata Avenue and the large open space preserves to the east.

Bridge 4 over Avenida La Pata also serves two purposes. It is a grade separated crossing over Avenida La Pata that will re-establish utility access, cut-off by the new roadway, to transmission towers/corridors to both San Diego Gas and Electric (SDG&E) and Southern California Edison (SCE) as well as providing regional trail connectivity between the Forster Ranch Ridgeline and Prima Deshecha North Trails. By the structure being grade-separated, it will allow for safer and uninterrupted traffic flow along Avenida La Pata similar to what the other three bridges also accomplish.

6 Verifiable, Measurable, Replicable and Useful Benefits / Replicable Project Model

OC Public Works/OC Infrastructure Programs manages a $500 million capital improvement project portfolio composed of road and flood control programs in areas throughout Orange County. This includes the engineering, programming, design, policy development and recommendations, project development and management, and project delivery support services. In the last year, OC Infrastructure Programs issued 30 contracts in support of flood and road capital improvement projects valued at over $100 million. This included completing 238 out of 354 miles of master-planned riding and hiking trails.

Our yearly target is to delivery 90% of programmed capital improvement projects and the only way to do that is by having replicable project models. This project was delivered via a traditional Design-Bid-Build (DBB) delivery method which is a tried and true construction contract delivery method used extensively by public agencies such as ourselves. Having said that, we are also proud to offer replicable Alternative Project Delivery Methods such as Design-Bid (DB), Construction Manager at Risk (CMAR), Job Order Contract (JOC) and Program Manager at Risk (PMAR).

Yea another verifiable and measurable project benefit is tied into the average daily traffic volumes. This gap connection project alleviates traffic around a number of different arterials in the area, but mainly off of Ortega Highway 74 (perpendicular to La Pata Ave.) and the I-5 (parallel to the I-5). Our traffic studies projected a relief of average daily traffic (ADT) volumes of approximately 12,000 cars per day in the year 2016 (opening day) and approximately 23,000 cars per day in future year 2035. The ADT without project alternative projected a static existing ADT of only 8,000 cars per day. In general, we also increased the overall Level of Service (LOS) from D to A (AM peak LOS) and B (PM Peak LOS).

All of this and more, is why the County of Orange has one of the best countywide pavement conditions, according to the "2016 California Statewide Local Streets & Roads Needs Assessment Report." In fact, the County of Orange maintained its position with the best pavements at an average Pavement Conditions Index (PCI) of 79. According to the report, our PCI has remained in "Good" condition since the 2008 Report which is a testament to our quality assurance and quality control before, during and after construction.

7 Positive Effects on the Environment

Since the project is in the State of California, there was no shortage of strict regulatory compliance and oversight requirements that were adhered to. The Project was subject to the California Environmental Quality Act (CEQA), a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. CEQA is California's broadest environmental law which helps guide other regulatory agencies during issuance of permits and approval of projects. CEQA applies to all discretionary projects proposed to be conducted or approved by a California public agency, including private projects requiring discretionary government approval. This process yielded the issuance of the following permits, all with their own set, and sometimes competing provisions: Clean Water Act Section 401 Permit from the California Regional Water Quality Control Board (CRWQCB), Section 1602 Streambed Alteration Agreement from the California Department of Fish & Wildlife (CDFW), Section 404 Permit from the US Army Corps of Engineers (USACE), San Diego Regional Water Quality Board (SDRWQB) General Waste Discharge Requirements Order No. R9-2012-0001, South Coast Air Quality Management District (SCAQMD) Rule 1150 Excavation Plan, San Diego Dewatering & De Minimus Discharges Permit, National Pollutant Discharge Elimination System (NPDES) Requirements (MS4), General and Industrial General Permits, and other local permits.

Another challenging environmental issue that we continue to contend with is that of sensitive plants and animals that are endangered and thus have to be protected. Our Biological Monitors would delineate extensive buffer areas whenever any of the following were encountered: Thread-Leaved Brodiaea (plant), Coastal Sage Scrub (plant), Western Spadefoot Toad (amphibian), Coastal California Gnatcathcer (bird), and the Least Bell's Vireo (bird). The

Project was environmentally regulated quite heavily which has been a challenge to plan for since groundbreaking. Not to mention all the mandatory onsite and offsite habitat mitigation requirements that required the County to secure a few more millions of dollars to be compliant.

An earthmoving project of this magnitude through virgin territory undoubtedly required continuous archeological and paleontological (A/P) monitoring and reporting. During all grading activities, full-time A/P monitors were onsite and redirecting, and sometimes stopping, work when positive finds were unearthed. Seven to ten millions of years ago, the entire Project site was approximately 3,000 feet underwater and full of aquatic life. Noteworthy project findings consisted of fossilized leatherback turtles, walruses, whales, seals, dolphins, fish, and droppings. It was a treasure trove of regionally significant specimens for our local A/P community, but sometimes the findings came at a time and cost expense to the County since work was halted until the findings could be safely collected and moved offsite. The findings will eventually be processed down, catalogued, added and curated into the local County of Orange collection.

A comprehensive surface drainage and storm drain system was developed to collect and convey runoff from the project site into the existing and planned City and County storm drain systems. All drainage within the project limits are incidental and integral to the road improvements by providing roadway drainage, erosion control, and proper backfill drainage in the form of subdrains. All surface drainage systems, storm drain systems, and structural BMPs were designed to capture and treat roadway runoff from the new impervious surface created by the project. Although not primarily designed for flood control purposes, combination basins provide flow duration control functions for hydromodification and peak flow detention storage where needed. The six combination basins will provide load reduction benefits by detaining stormwater runoff to allow pollutants to settle. Offsite flows from the surrounding natural slopes will be conveyed through cross culverts under the new roadway. The construction of subdrains is required when free moisture is encountered during remedial grading, where seeps are overserved, or as a precautionary measure wherever the potential of future subsurface moisture may create possible problems with respect to slope stability or saturation of subgrade soils. Deep cover storm drains were used to carry (from east to west) storm water flow underneath the proposed embankment fills.

The primary objective of the project site design is to reduce the hydrologic and water quality impacts associated with land development. The benefits derived from this approach include: reduced size of downstream BMPs and conveyance systems; reduced pollutant loading; and reduced hydromodification impacts to receiving streams. All project drainage was sized to drain the new roadway and its appurtenances only. The project maximizes opportunities for BMPs.

8 Effective Collaboration & Partnerships

The project has a multitude of stakeholders and sponsors with varying degrees of involvement and influence. Proper stakeholder management has been paramount to the project's success all the way from planning thru construction. This extensive lists includes, but is not limited to: County of Orange, OC Waste & Recycling, Orange County Transportation Authority (OCTA), City of San Juan Capistrano, City of San Clemente, Rancho Mission Viejo, Talega Development, Fortistar Ranch Development, San Juan Hills High School, Whispering Hills Development, Rancho San Juan Development, Tierra Verde Industries, CR&R, Fortistar Methane Group, Orange County Health Care Agency, Environmental Health acting as the Local Enforcement Agency (LEA), South Coast Air Quality Management District (SCAQMD), Huitt-Zollars, GMU Geotechnical, SWT Engineering, GeoSyntec Consultants, Lantex Landscaping Architecture, LSA Associates, PRP Engineering, CNS Engineers, and Federal & State Regulatory Agencies.

Early community outreach coupled with regularly and timely Project updates have allowed the County to engage the surrounding community and manage expectations amidst the shear scope of construction activities and ever changing project landscape.

A Construction Management (CM) team led by Hill International (the Prime CM Consultant) was selected by the County of Orange to provide Staff Augmentation Services to support OC Public Works during construction. The design team consultants, also included in Hill's team, who had prominent roles during construction included Huitt-Zollars Inc. as the Project Civil Engineer, Geosyntec Consultants, and SWT Engineering. Ninyo & Moore provided geotechnical engineering, observation and testing during construction. OC Public Works led the CM effort and provided Project Managers, Resident Engineers, Construction Inspectors, and Construction Surveying that worked in conjunction with the Hill International team. The County and the contractor entered into a partnering relationship, which included frequent informal dialogues and regularly scheduled formal meetings. The approach taken for conflict resolution was to always attempt to resolve issues at the "lowest level" and elevate to senior management only when absolutely necessary. The County's Resident Engineers and the contractor's Project Manager generally resolved most issues at their level. Lines of communication between the contractor and the County went through the Resident Engineer and the contractor's Project Manager. For the CM Team, contractual issues went from the subconsultants to Hill International's Project Manager. To expedite technical issues, the engineering and geotechnical consultants communicated directly with the County and kept Hill "in the loop".

9 Innovative Technology Use

All Consultants were actively involved in quality management throughout the project. For example, Ninyo & Moore and Geosyntec were brought in to monitor and address waste excavation. Ninyo & Moore also provided quality control during earthwork grading through observation and testing. A great deal of forethought was involved throughout the project,

particularly when Hill International compiled the subconsultant team. The final stages of design were begun with the end-result in mind; it was evident that a significant amount of design support would be necessary during excavation and preparations were made accordingly.

During the design phase, the Project Civil Engineer prepared construction plans and specifications for specific phased construction of the following elements: grading and retaining wall construction for the relocation/replacement of one steel lattice tower and one wooden structure supporting the electrical transmission conductors; grading, waste removal, bridge and roadway construction, and electrical distribution system relocation at the main entrance of the Prima Deshecha Landfill; roadway construction, traffic handling, and electrical distribution system relocations for the roadway widening segment; and grading for the relocation/replacement of the entrance to the City of San Juan Capistrano's Riding Park. County design consultants collaborated during design to evaluate a range of waste removal/road construction strategies, and design grading to stabilize a major landslide (Landslide "C") while using that area as an area to balance cut and fill earthwork quantities for the overall project. The design engineer also prepared special provisions which outlined measurement of the earthwork balance area to fairly compensate the contractor for the actual quantities moved, and addressed the earthwork balancing in the possible scenario (which ultimately occurred) that the road widening work would not start until the road extension grading was completed.

During construction, unanticipated events and conditions were encountered which necessitated innovation and creativity by the CM team to solve problems, minimize cost impacts, and avoid schedule delays. These events and conditions were: delay to the electrical transmission relocation/replacements; failure of a temporary slope immediately adjacent to a steel lattice electrical tower; redesign of a permanent cut slope in the major landslide/earthwork balance area to reduce the possibility of slope failure; additional waste discovered where not expected; and accelerated completion for an early opening of the roadway extension segment, including a portion of the widening segment and revisions to the modification of a signalized intersection.

Something relatively new to the County, was the use of project branding. All project materials, fact sheets, maps, email blasts, and construction updates were standardized. A dedicated website and hotline were established just for the project, in order to provide updated access to information at all times. The public could call in and leave a message, and receive a response within 24 hours. This form of communication was widely accepted and highly appreciated throughout the project. Creating communication protocols and programs helped establish a high level of customer service throughout the project. As a result of the success of this project branding and communication, now there are efforts to implement similar measures for OCPW's robust Capital Improvement Program through our dedicated Public Information Office for OC Public Works. That branding is starting to take shape and is moving forward. This is huge! The

message and support is coming from the top – down on who OC Public Works is, what we do, and the services we provide. This is translated to customers and stakeholders.

10 Continuing & Sustainable Positive Outcomes

The following information reflects the multiple impacts the La Pata Extension Project has on the local community. The environment and quality of life are also positively impacted by the project; shorter commutes reduce gas emissions, increase recreational opportunities, and support a significant improvement for residents and visitors.

Awards and accolades for the La Pata Extension Project are numerous. Here are just a few:

- The ribbon cutting ceremony was a fantastic event for the community; the La Pata Avenue Extension was the guest of honor. See article: http://ocplanning.net/civicax/inc/blobfetch.aspx?BlobID=56606
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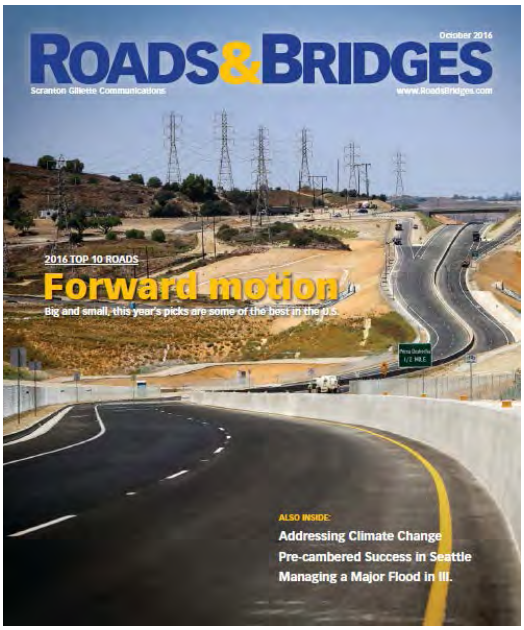
- http://ocplanning.net/planning/land_dev/projects/lapata. The OC Public Works web page featuring the La Pata Avenue/Camino Del Rio Extension. As a direct opportunity to keep the community informed, readers have the option to sign up for email updates, and/or read the updates posted on the website.

- http://www.ocregister.com/articles/san-725668-clemente-county.html Please note the August 13, 2016 main article and related photographs, timeline (Long and Winding Road) located on the left column, and the testimonials found under "What will La Pata mean to you?"

- http://editiondigital.net/publication/?i=345852#{"issue_id":345852,"page":0} The significance of La Pata Extension is further noted when the project is the featured cover image, for the October 2016 issue, of Roads and Bridges magazine. The selection of the top ten road projects is based upon project challenges, impact to region, and scope of work. We are extremely proud and honored to have been selected for such an award from Roads & Bridges magazine, a leading publication that provides engineers, contractors and government officials with the latest advancements in the road and bridge industry.



- http://www.roadsbridges.com/no-2-road-digging-your-way-out La Pata Extension is named the second most significant project in North America by Roads and Bridges Magazine, October 2016.

TOP 10 ROADS

#2 Digging your way out

Massive excavation keys California project

by Bill Wilson
Editorial Director

Resident resistance made it seem like the La Pata Avenue Gap Connector was never going to happen. When it was finally approved, there was another problem that could have filled a large school auditorium … make that thousands of them.

The La Pata Avenue Gap Connector project, snuggled in the hilly landscape of San Clemente, Calif., had been talked about since the early 1960s, but public concern held it back for decades. However, once everything got the green light, what lied beneath the surface had prime contractor Sukut Construction LLC wondering if it could be stopped. The roadway, located near a landfill, traverses poor soil conditions including old refuse, shallow, deep and ancient landslides, faults and adverse bedding conditions. The underlying soils also are highly expansive and high in sulfate content, which also had to be mitigated. Then you had the fossils of turtles and other animals that had been around since the beginning of time. In total, approximately 15 million cu yd of earthwork was moved.

"Just the logistics of this much movement of earthwork volume is staggering," Hugo Pineda, civil engineer for Orange County Public Works, told Roads & Bridges. "Unfortunately, the boring logs and investigations could only capture so much information. We literally had to keep peeling the onion to hopefully reveal favorable conditions."

To deal with the highly expansive soil and landslides, a series of deep earth buttresses/keyways coupled with substantial over-excavation efforts ensured proper engineered compacted fills. Over-excavation came into play in areas where the proposed road grade was near a cut/fill transition. The cut portions of the road and parkways were over-excavated to reduce differential settlement across the cut/fill transition. All fills were placed on top of competent soils after approval from the geotechnical engineer and geologist on-site.

Full-time monitors also were roaming the project redirecting and sometimes stopping work when positive finds were unearthed. Seven to 10 million years ago, the region was 3,000 ft underwater and full of aquatic life, so fossils were prevalent.

Old refuse dating back to the 1970s also had to be excavated, transported, placed and covered in accordance with strict rules and regulations.

Project completion finally eliminated a gap in the Orange County arterial highway system and established a connection between Ortega Highway (S.R. 74) to the north and Avenida Vista Hermosa to the south. The new corridor also provides arterial access to existing and proposed developments.

Four major bridges and tunnels also were constructed to serve as grade-separation structures. The primary purpose of the crossings is to provide a circulation plan that facilitates the safe, convenient and efficient movement of various types of vehicles without having to cross La Pata Avenue at grade and interrupt traffic flow. R&B

PROJECT: La Pata Avenue Gap Connector
LOCATION: San Clemente, Calif.
OWNER: County of Orange/OC Public Works
DESIGNERS: Huitt-Zollars Inc., GeoSyntec Consultants, CMJ Geotechnical Inc.
CONTRACTOR: Sukut Construction LLC
COST: $40 million
LENGTH: 2.3 miles
COMPLETION DATE: Aug. 13, 2016

18 | October 2016 • ROADS&BRIDGES

- http://www.ocregister.com/articles/county-637105-sample-landfill.html The October 2, 2014 article discussed the interesting fossils and refuse uncovered during construction.

- http://www.ocregister.com/articles/fossils-651119-turtles-leatherback.html The February 12, 2015 article details the fossil finds uncovered during construction and showcases the leatherback sea turtle fossils.

- http://southernca.apwa.net/EventDetails/10170/ La Pata Extension is named one of the 2016 APWA BEST Award Winners for Reginal Transportation by APWA Southern California Chapter, November 2016.

- La Pata Extension and Huitt-Zollars awarded the Design Quality Partner Award 2016 APWA BEST Award Winners for Reginal Transportation by APWA Southern California Chapter, December 2016.

11 Program/Project Advances to the League & CSAC's Priorities

OC Public Works continues to trail blaze innovative and new ideas into the public sector. We are committed to the continued protection and enrichment of the community through efficient delivery and maintenance of public work infrastructure, planning and development services. The La Pata Extension Project is just one of many project that showcases our ability of providing excellent, innovative and professional public works projects and services. OC Public Works'

Mission, Vision and Values coincide with the priorities of the League of Cities and the California State Association of Counties.

2016 has been a year of change, accolades and accomplishments for OC Public Works. The La Pata Avenue Extension Project is proof of the integrity, accountability, service and trust we provide with every capital improvement project. OC Public Works looks forward to what 2017 has in store for us. ***OC Public Works. One Department, Moving Forward!***

12 Miscellaneous Noteworthy Quantities

Construction Cost: $72,000,000
Earthwork: 15,000,000 cubic yards.
Waste Excavation: 850,000 cubic yards.
Asphalt: 118,000 tons.
Storm Drains: 16,000 linear feet.
Concrete V-Ditch: 76,000 linear feet.
Subdrains: 122,000 linear feet.

13 Affirmation

In submitting this application, I affirm that to the best of my knowledge, the information that is provided in this nomination is accurate and correct.

01/11/17

Hugo Pineda, PE, MSc, QSD/QSP
Civil Engineer/Project Manager
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P-714-647-3973 F-714-967-0885

Thank you for your time and consideration.

Project Map

LA PATA EXTENSION

Connecting Communities

COUNTY OF ORANGE CALIFORNIA

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