

**COMMENTS RECEIVED AT FEBRUARY 23, 2011 INFORMATIONAL PUBLIC
MEETING**

Burke

CityOceanside

Deny the Dump

Embry

Hanson

Hayer

Kerckhore

Lujb

Maria

Nicolaisen

NLCS

Ortega

PalaPauma

Pang (Note: Climate change report included as provided with missing and upside-down pages)

Pitts

Procopio

PropCBoardItem

Rice

Roman

Sawyer

SLRWC

Starr

Villa

Water Authority

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: Phillip & Carol Burke

*CITY OF RESIDENCE: Valley Center

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: Should not build a dump ^{near} a water aquifer and needlessly endanger a ~~vast~~ valuable water source; particularly when there are better sites.



CITY OF OCEANSIDE

MAYOR
JIM WOOD

February 21, 2011

Mr. Jim Henderson
County of San Diego
Solid Waste Local Enforcement Agency (LEA)
5500 Overland Drive, Suite 110
San Diego, California 92123.

SUBJECT: Gregory Canyon Landfill – Proposed Solid Waste Facility Permit

Dear Mr. Henderson:

I am writing on behalf of the City of Oceanside to request that you deny the proposed solid waste permit application for the Gregory Canyon Landfill. If approved, the landfill would have an inimical effect on the local water supplies within the City of Oceanside and would risk the economic vitality of one of the largest cities in the region.

As imported water supplies from the Delta and the Colorado River water become more and more constrained, local water supplies such as those in Oceanside, have become increasingly important. Over the last 150 years, the City of Oceanside has utilized the San Luis Rey River Aquifer (SLRRA) as an important component of its own water supply. The SLRRA supplies 15 percent of the water needs for Oceanside citizens and businesses and represents a significant capital investment by the City. In the last twenty years, the City has spent \$23 million in groundwater facilities and plans to invest an additional \$150 million in the next 20 years.

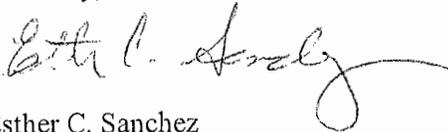
Oceanside has grave concerns about the landfill's potential to leak toxic pollutants into these critical groundwater supplies. Landfills should never be placed next to an active river or tributary to an aquifer under any circumstances. If the landfill permit is approved and the liner fails, the resulting contamination will affect the San Luis Rey River Aquifer and directly impact Oceanside's local water supplies. Losing one of the few the basins in San Diego County to contamination would hurt all of San Diego County.

Oceanside feels strongly that this site is unsuitable for a landfill. As you may recall, the county rejected the location because it failed seven out of eight siting criteria. We believe that it will be impossible to engineer the site to make it safe for a landfill and would

create a colossal risk to Oceanside's natural resources. Oceanside residents and businesses should not have to bear the burden of remediating leakage from a landfill cited near a significant water supply.

The City of Oceanside requests that you deny the permit application; thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Esther C. Sanchez", with a large, stylized flourish extending from the end of the name.

Esther C. Sanchez
Deputy Mayor

Cc: Mayor and City Councilmembers



Save Our Sacred Mountain
 Save our Precious Water
**DENY THE GREGORY CANYON
 DUMP**

Dear Mr. Henderson and County of San Diego Solid Waste Local Enforcement Agency (LEA),

You and the LEA hold the fate of the San Luis Rey River, sacred Gregory Mountain, and the health and safety of our region's drinking water in your hands. The LEA has the opportunity to do the right thing and deny the Solid Waste Facility Permit to build a dump in Gregory Canyon.

THE BOTTOM LINE IS THAT GARBAGE AND WATER JUST DON'T MIX.

The proposed landfill would threaten vital drinking water sources for the region. The area houses several important drinking water sources that serve thousands of residents and businesses throughout the county. There are grave concerns about the landfill's potential to leak toxic pollutants into these critical groundwater supplies.

By approving this landfill, the County would be violating its duty to protect its precious natural resources, including water. This site is unsuitable for a landfill - the County itself rejected the location because it failed seven out of eight siting criteria. It is impossible to engineer the site to make it safe for a landfill.

San Diego County does not need this landfill. Waste diversion and recycling rates in the county are at an all-time high, and disposal rates have decreased dramatically in recent years. The County has no need for any new landfills at this time, much less one that would destroy critical water resources.

Gregory Mountain, known to local Native Americans as Chokla, and Medicine Rock are both tribal sacred sites. Building a landfill at Gregory Canyon would irretrievably damage and desecrate these places.

Construction of the landfill means the loss of a tributary to the San Luis Rey River, threats of landslides, leachate, spills from trucks, and contaminated storm runoff. The Gregory Canyon Landfill is located on a fractured bedrock aquifer and threatens existing and future water supplies. It also poses harm to wildlife species that depend on the river for survival.

WHY THIS MATTERS TO ME:

Trash & Water don't mix

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Rob Bauer
 ADDRESS 945 McDonald Rd City Fallbrook State/Zip CA 92028
 PHONE () _____ EMAIL _____

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov
 OR bring to the public meeting at the Fallbrook Library on February 23, 2011
 For more information: visit www.savegregorycanyon.org or contact Shasta Gaughen @ 760-891-3515.



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WHY THIS MATTERS TO ME: *A dump at Gregory Canyon; will pollute an important watershed and a river that goes into The Ocean.*

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME ALFONSO RAMOS
 ADDRESS 1617 SCOOTER LN City FALLBROOK State/Zip CA. 92028
 PHONE () _____ EMAIL ramoalfonso@gmail.com

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WHY THIS MATTERS TO ME:

I own 12 acres adjacent to the dump site, comprising an expensive house and a producing avocado grove. My business contributes to the positive San Diego tax base. My property value and that of many, many neighbors ~~would~~ would be negatively affected.

NAME Olive Rice

ADDRESS 10590 Cousins Way City Valley Center State/Zip Ca 92082

PHONE (760) 938-1111 EMAIL please [redacted] [redacted] [redacted]

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Also, a dump attracts crows, seagulls - both bearing mites. The operation generates dust, adversely affecting agriculture.



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WHY THIS MATTERS TO ME:

All of the above arguments affect, or could affect me, if this dump fouls our wonderful river. Do not allow this atrocity to become reality.

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Sydney Crist
ADDRESS 12132 Incredible Lane City Valley Center State/Zip Ca. 92 082
PHONE () _____ EMAIL _____

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEP_comments@solidcounty.ca.gov
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WHY THIS MATTERS TO ME: *THE POTENTIAL DAMAGE TO THE SAN LUIS REY AQUIFER IS TOO GREAT A RISK.*

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME OGDEN WATSON

ADDRESS 32841 NORTSHIRE CIRCLE City TEMECULA, CA State/Zip 92592

PHONE () _____ EMAIL 099ie WATSON @ HOTMAIL.COM

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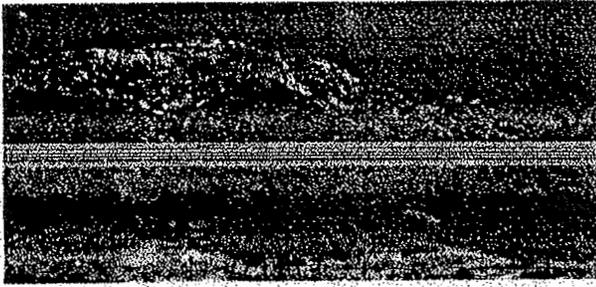
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WHY THIS MATTERS TO ME: *This river is one of the county's last important aquifers - let us not ruin this resource. The future of this region's water must not be sacrificed unnecessarily. Let us protect this valuable and basic water source.*

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Faye Jonason
 ADDRESS 1290 Palo Mesa Hb.D. City Fallbrook State/Zip CA 92028
 PHONE () EMAIL

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov
 OR bring to the public meeting at the Fallbrook Library on February 23, 2011
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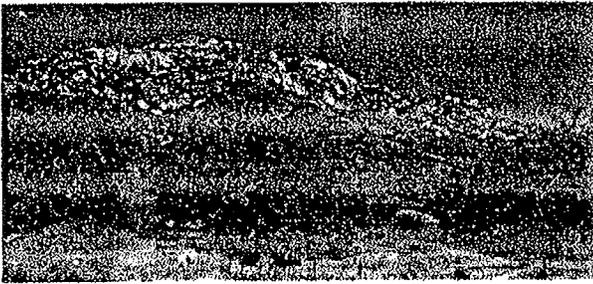
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WHY THIS MATTERS TO ME: *The fact alone that this landfill could compromise our water supply is reason enough to oppose it. As a San Diego county resident, my vote is to deny!*

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Arlene Yates Bourbonnais
 ADDRESS 1634 Riverview Dr. City Fallbrook State/Zip CA
 PHONE () _____ EMAIL arlene@santamargarita.inn.com

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WHY THIS MATTERS TO ME: The site is sacred to us it is part of our people, our ways and traditions and knowledge. To destroy it would be to us like knocking down Mount Rushmore or the statue of Liberty. It's also bad for all the surrounding cities in the fact it will contaminate the water and take a toll on the animals who live there in piece it about time we stop destroying what is not ours, also at the last meeting it was mentioned that all the other dumps and facilities OPPOSE the land fill

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Cameron Hayes
 ADDRESS 46111 Via La Colorado City, Temecula State/Zip/C 92592
 PHONE () _____ EMAIL Summerhayes@gmail.com

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WHY THIS MATTERS TO ME: Any project that puts our water resources at risk is completely unacceptable. There is no benefit to building a landfill in this area when there is a risk of leaks that would contaminate our already diminishing water supply. Most importantly, the health risks would be too great due to the poor air quality and contamination that this landfill would cause.

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Mindy Yates

ADDRESS P.O. Box 357 / 446161 via La Colorado City Pala / Temecula State/Zip CA

PHONE () _____ EMAIL m.yates411@yahoo.com

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WHY THIS MATTERS TO ME:

It affects my community and I do not want the damage to our local environment.

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Brandon Strausbaugh
 ADDRESS PO BOX 1530 City _____ State/Zip 92082
 PHONE (____) _____ EMAIL brandon@pvins.com

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WHY THIS MATTERS TO ME:

all of the above plus not near the river

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Fran DeWilde (Voting name Frances F. DeWilde)
 ADDRESS P.O. Box 1195 City V.C. State/Zip 92082
 PHONE () _____ EMAIL franz@vcweb.org

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov

OR bring to the public meeting at the Fallbrook Library on February 23, 2011

For more information: visit www.savegregorycanyon.org or contact Shasta Gaughen @ 760-891-3515.



Save Our Sacred Mountain
 Save our Precious Water
**DENY THE GREGORY CANYON
 DUMP**

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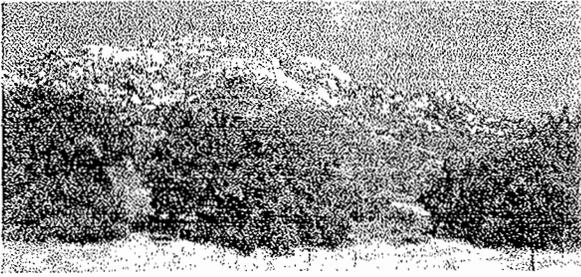
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WHY THIS MATTERS TO ME:

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Eric Jockinsen
 ADDRESS PO box 1328 city Valley Center State/zip Ca 92082
 PHONE () EMAIL _____

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WHY THIS MATTERS TO ME:

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NAME Debra Jockinsen

ADDRESS 27380 Valley Center Rd City Valley Center State/zip CA 92082

PHONE () _____ EMAIL Jockinsen@vcweb.org

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NAME Sue Richmond
 ADDRESS 29314 MacTan Rd City Valley Center State/Zip CA 92082
 PHONE (_____) _____ EMAIL rocknr5@att.net

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WHY THIS MATTERS TO ME:

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NAME SCOTT HAMMER 

ADDRESS P.O. Box 3107 City VALLEY CENTER State/Zip CA 92082

PHONE () _____ EMAIL SCOTT@HAMMERSMITHCAPITAL.COM

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WHY THIS MATTERS TO ME:

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NAME Rob Gerschufsky
 ADDRESS 16066 wizard way City Valley center State/Zip 92082
 PHONE (_____) _____ EMAIL rgskst@yahoo.com

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WHY THIS MATTERS TO ME:

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NAME John F. DeWilde Jr.
ADDRESS P.O. Box 1195 City Valley Center State/Zip Ca, 92082
PHONE () EMAIL

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WHY THIS MATTERS TO ME:

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NAME Delores Chavez - Harmes
 ADDRESS PO Box 3107 City Valley Ctr State/Zip CA 92082
 PHONE () _____ EMAIL dee@cfarc.com

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WHY THIS MATTERS TO ME:

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Claudia Johnson
 ADDRESS 18218 Paradise Mn Rd city V.C State/Zip CA 92082
 PHONE () _____ EMAIL claudiaj1998@gmail.com

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WHY THIS MATTERS TO ME: *I want my drinking water to be safe to drink*

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME MICHAEL T. ROBLEO

ADDRESS 27143 SILVER BERRY WAY City VALLEY CENTER State/Zip CA 92082

PHONE () _____ EMAIL MIKE@RRCOMPUTERCONSULTING.NET

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WHY THIS MATTERS TO ME:

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Luís Caldera
 ADDRESS 2373 Carroll Lane City Escondido State/Zip 92027
 PHONE () _____ EMAIL lcaldera@ucsd.edu

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WHY THIS MATTERS TO ME:

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NAME Evonnee Archuleta
 ADDRESS 14331 Fruitvale Rd. City Valley Center State/Zip CA / 92082
 PHONE () EMAIL americlean@email.com

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NAME Erron Archuleta
 ADDRESS 14334 Fruitvale Rd. City Valley Center State/Zip CA / 92082
 PHONE () _____ EMAIL americlean@email.com

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WHY THIS MATTERS TO ME:

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NAME Roseanna Upans
 ADDRESS 11248 Oshin Ln City Valley Center State/Zip CA 92082
 PHONE () _____ EMAIL _____

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You and the LEA hold the fate of the San Luis Rey River, sacred Gregory Mountain, and the health and safety of our region's drinking water in your hands. The LEA has the opportunity to do the right thing and deny the Solid Waste Facility Permit to build a dump in Gregory Canyon.

THE BOTTOM LINE IS THAT GARBAGE AND WATER JUST DON'T MIX.

The proposed landfill would threaten vital drinking water sources for the region. The area houses several important drinking water sources that serve thousands of residents and businesses throughout the county. There are grave concerns about the landfill's potential to leak toxic pollutants into these critical groundwater supplies.

By approving this landfill, the County would be violating its duty to protect its precious natural resources, including water. This site is unsuitable for a landfill – the County itself rejected the location because it failed seven out of eight siting criteria. It is impossible to engineer the site to make it safe for a landfill.

San Diego County does not need this landfill. Waste diversion and recycling rates in the county are at an all-time high, and disposal rates have decreased dramatically in recent years. The County has no need for any new landfills at this time, much less one that would destroy critical water resources.

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WHY THIS MATTERS TO ME:

*FARMERS - NEED USEABLE
 WELL WATER*

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME ERICK UJAL

ADDRESS 10013 TRIPLE S TRAIL VALLEY CENTER CA 92026
City State/Zip

PHONE () EMAIL INFO @ PALKPACIFICINDUSTRIAL.NET

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov

OR bring to the public meeting at the Fallbrook Library on February 23, 2011

For more information: visit www.savegregorycanyon.org or contact Shasta Gaughen @ 760-891-3515.



Save Our Sacred Mountain
 Save our Precious Water
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WHY THIS MATTERS TO ME:

Because I do not want this to leak into our groundwater.

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Denise Williams
 ADDRESS P.O. Box 2 city Valley Center State/Zip CA 92082
 PHONE () EMAIL Denise@cosmic.solar.com

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov
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WHY THIS MATTERS TO ME:

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME _____

ADDRESS _____

PHONE () _____

EMAIL _____

Shasta Gaughen
 29555 *Sierra* City *Valley Center* State/Zip *#11CA*
 92082

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DFHComments@sdcounty.ca.gov

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WHY THIS MATTERS TO ME:

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Dele Meyer
 ADDRESS 29235 Valleycenter Rd City Valley Center State/Zip CA 92282
 PHONE () _____ EMAIL _____

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DFHComments@sdcounty.ca.gov
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WHY THIS MATTERS TO ME:

I am worried about contaminants leaching into our ground water and making our environment toxic to our health

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Judith Shadzi
 ADDRESS 12717 Miral de Vane City VC State/Zip CA 92082
 PHONE () _____ EMAIL judshadzi@gmail.com

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov
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WHY THIS MATTERS TO ME:

Contaminants from the landfill will leach into the ground water and will endanger all living things.

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Bahram Shadz;
ADDRESS 12717 Mirar De Valle city Valley Center State/Zip 92082
PHONE () _____ EMAIL bahram@aol.com

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DEHComments@sdcounty.ca.gov

OR bring to the public meeting at the Fallbrook Library on February 23, 2011

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WHY THIS MATTERS TO ME:

PLEASE, deny the Solid Waste Facility Permit for the Gregory Canyon dump.

NAME Verle Yoder
 ADDRESS 15856 Fruitvale City Valley Center State/Zip CA 92082
 PHONE () _____ EMAIL Verle@yoder.net

Mail to the LEA at 5500 Overland Drive, Suite 110, San Diego, CA 92123 OR E-mail to DFHComments@sdcounty.ca.gov
 OR bring to the public meeting at the Fallbrook Library on February 23, 2011
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Gentlemen, at what point do we say "Enough is enough"? For 25 years this unneeded and dangerous project has been put forward and for 25 years it has been rejected! Since the beginning it has been rejected by every review board that has come in contact with it. The only argument the proponents can come up with is the passage of a proposition that they say shows that the general public is behind it. But that cited proposition only authorized the review of the project, not the implementation of it!

In your report on the permit process, you repeatedly cite Gary Erbeck as certifying data & procedures as being correct and adequate and later it was determined that his judgement was flawed! At what point are you going to realize that Gary Erbeck is not qualified to make these judgments and remove him from the process?

In the permit application the portion concerning water is particularly disturbing! I have a 5 acre avocado grove and I have had my water supply reduced by 30%. As a result, I have had to eliminate 1/3 of my trees in order to make my other trees viable. Now the water district is raising my rates because they aren't selling enough water to make expenses! And now you want to authorize an additional stress on the water supply that we "MAY" have. What kind of "CATCH 22" is this? If you are saying that this dump is more important than agriculture, then all I can say is, "The next time you are hungry, eat some garbage!"

I urge you to reject this application!

J. P. EMBRY
POBox 2233
Valley Center, CA 92082
760-742-1521

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP

February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak (submitted speaker slip
separately)

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: Mary Hanson

*CITY OF RESIDENCE: La Jolla

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: _____

see attached statement, previously sent to Mr. Henderson

LETTER RECEIVED

2.18.11

LEAGUE OF WOMEN VOTERS

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP

February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

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*NAME: Cameron Hayer

*CITY OF RESIDENCE: Temecula Ca

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: my comment is more like a question.
putting this landfill is a harmful and dangerous idea and proposal.
do you all want to be responsible for the future of
our children and the health problems that can lead to
death when ~~the~~ the landfill if passes leaks and
contaminates the water if well (so would you
buy a house near a landfill and raise your children?)
please do the right thing. we are all judged
in the end for our actions and decisions.
Thank you

COUNTY OF SAN DIEGO
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February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

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*NAME: EV & KERRY HOWE

*CITY OF RESIDENCE: Encinitas

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: I worked on the campaign to
oppose the landfill about nine years
ago. The builders of the dump mailed
out a flyer (to local residents) that if
the landfill wasn't approved (by voters)
we would have to accept trash from
Los Angeles. That is absolute lie, for
how can we accept trash from LA if
the landfill isn't even built?

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
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SOLID WASTE FACILITY PERMIT
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February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

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*NAME: John Ljubenkov

*CITY OF RESIDENCE: Pauma Valley

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: Our Public officials should protect the public from dangerous schemes like this dump. The fact that this dump is still being considered is, to me, evidence of collusion by public officials with corporations getting all the profits. The Dump will pollute the groundwater, destroy a Native American Sacred site, clog Highway 76, and make life Hell for the residents of the San Luis Rey River Valley. The approval of the permit is unconscionable and can the County tell me why a reasonable person should consent to it?

John Ljubenkov

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP

February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

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*NAME: Maia

*CITY OF RESIDENCE: Fallbrook

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: I just moved from Los Angeles because of all the beauty that this region has to offer. To hear of this tragedy is close to my home is so sad. There are so many other places that wouldn't effect one of the Last Native American groups and endangered animals, not to mention what will happen to our water. This is wrong and from the look of this crowd we won't let this pass.

Thank you,

The Newby on the Block



February 23, 2011

County of San Diego
Solid Waste Local Enforcement Agency
5500 Overland Drive, Ste. 110
San Diego, CA 92123

Dear Mr. Henderson:

This is in reference to the proposed Gregory Canyon Landfill. I am in opposition to the proposed landfill for many reasons which I will outline for you. The Landfill would threaten vital drinking water resources for the region. The area houses several important drinking water sources that serve thousands of residents and businesses throughout the county. There are grave concerns about the landfill's potential to leak toxic pollutants into these critical groundwater supplies.

By approving this landfill, the County would be violating its duty to protect the precious natural resources, including water. This site is unsuitable for a landfill – the County itself rejected the location because it failed seven out of eight siting criteria. It is impossible to engineer the site to make it safe for a landfill and its detrimental to even try!!

San Diego County does not need this landfill. It is reported that waste diversion and recycling rates in the county are at an all-time high, and disposal rates have decreased dramatically in recent years. The County has no need for any new landfills at this time, much less on that would destroy critical water resources.

Gregory Mountain, known to local Native Americans as Chokla, and Medicine Rock are both tribal sacred sites. Building a landfill at Gregory Canyon would irretrievably damage and desecrate these places. In accordance with CEQA it is a requirement that you provide consultation and mitigation action with the local tribes in regards to the contemplated impacts to the existing Cultural Resources. It is my understanding that this process has not been completed.

In the interest of all San Diego County Residents, Businesses and local Native American Tribes this project should not move forward and any associated permits should be denied. I implore you to deny the Solid Waste Facility Permit for the Gregory Canyon dump.

Respectfully,

Kim Yearyean, Local Resident
And Consultant to Native American Tribes

Pala-Pauma Sponsor Group
P.O. 1273
Pauma Valley, CA 92061

County of San Diego
Solid Waste Enforcement Agency (SDSWLEFA)
1600 Pacific Coast Highway
San Diego, CA 92101

Re: Letter of Opposition to issuing a Permit for Gregory Canyon Landfill Dump

Dear Honorable Agency Directors,

The Pala-Pauma Sponsor Group respectfully requests that the County of San Diego Solid Waste Local Enforcement Agency (SDSWLEFA) does not grant a permit for the development commonly known as the Gregory Canyon Landfill (Dump). The Pala-Pauma Sponsor Group (PPSG) believes that to do so would compromise the environment of the Pala Pauma region and continuously endanger the health of its residents. Over the years, as a local citizens' review and advisory group appointed by the San Diego County Board of Supervisors working with San Diego County Department of Planning and Land Use, we have consistently opposed this development since inception because of its poor planning, site, and design.

The increase of Dump traffic on SR-76, a roadway where the County has proposed accepting a failing standard of service, would create an additional several hundred slow moving, large and heavy truck trips per day. This is on a roadway with single lanes in each direction is narrow, lines of sight are severely restricted, curve radii are exceptionally small, and advisory speed limits are as low as 15 mph. Further, PPSG is advised that the County contemplates SR-76 becoming a County Scenic Highway. The addition of the Dump traffic would not be in compliance with the spirit of that designation and would only add to the fatalities which already occur on this dangerous road and the inevitable trash that such vehicles deposit on the roadway would have a negative impact on our region.

The Dump is totally out of character with the PPSG Community Plan and would cause the diversion of large quantities of recycled water which could be beneficially used for other non-potable purposes, by supplementing water for agriculture which has suffered disastrously in the area because of the pricing-effect of court and climate limited supplies. In addition, technology affecting trash disposal and energy conversion is advancing beyond the need for this large area solid waste site. This old, antiquated method of trash deposal is not needed and quite frankly the idea has outlived its usefulness over the past seventeen years as this proposed project has worked its way through the courts and as the area has experienced additional and planned commercial and residential growth.

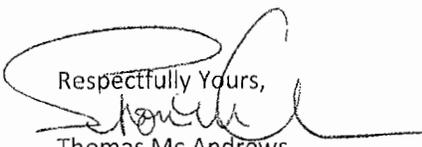
The promoters of the Dump plan to ignore and override the legitimate interests of local Native Americans in their land heritage; build on a site that has been rejected by the County as unsafe for disposal purposes; and endangers the ground water supply of the San Luis Rey River aquifer upon which so many communities, farmers, tribes, and individuals depend - as was stated by County Supervisor Pam Slater-Price at the last Army Corps of Engineering public hearing.

We ask that SDSWLEFA not be a partner in allowing the financial interests of a few to override the societal, safety, and health imperatives of so many.

In closing, those who do support this proposed Dump should have their names publically recorded and be held financially responsible when the Dump fails ... and causes irreparable harm ... to our priceless community, land, air, water, and quality of life. The proposed benefits of this Dump are not in balance with the enormous community risk it poses.

Please reject this permit request.

Respectfully Yours,



Thomas Mc Andrews

Chairperson

Pala-Pauma Sponsor Group

Cc: Supervisor Horn
Supervisor Slater-Price
Fallbrook Planning Group
Valley Center Planning Group
S.D. Department of Planning & Land Use

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
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February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

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*NAME: Jamie Pang
*CITY OF RESIDENCE: San Diego, CA
*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: My written statement: I live in Tierrasanta & I have been a resident living in San Diego County for about 7 yrs. As a CA Native & San Diego Resident, I oppose the solid waste facility permit at Gregory Canyon because it would be built on the banks of the San Luis Rey River, which would threaten a major freshwater drinking water source. There is no guarantee that the dump's liner won't break, & allow toxic chemicals to run right into the river & poison it & the aquifer beneath it. The river & aquifer supply H₂O not only to the Palu tribe (over 600 people) but also to the city of Oceanside. In addition, building the garbage dump would destroy hundreds of acres of vital wildlife habitat.

The County needs to ~~submit~~ ^{live up} to its duty to protect all of our natural resources, including water. According to the 2050 climate change projections by the San Diego Foundation, the Water Authority predicts an increase in water demand of about 37%. If this is the case, then placing a garbage dump on the banks of a river that supplies freshwater makes no sense. (SD Report Attached)



The County does not need this landfill either. Waste diversion & recycling rates in the County are at an all-time high & disposal rates have gone down dramatically in recent years. It is for the plethora of the above stated reasons that I am against this landfill.

Regards.

A handwritten signature in cursive script, appearing to be "J. W. [unclear]", with a long horizontal stroke extending to the right.

The San Diego Foundation Regional Focus 2050 Study

Climate Change Related Impacts in the San Diego Region by 2050

Summary Prepared for the 2008 Climate Change Impacts
Assessment, Second Biennial Science Report to the California
Climate Action Team

Prepared by:

Steven Messner, Sandra C Miranda, Karen Green,
Charles Phillips, Dr. Joseph Dudley – SAIC
Dr. Dan Cayan – Scripps Institution of Oceanography
Dr. Emily Young – The San Diego Foundation



Understanding
the San Diego Region

The San Diego Foundation

We must understand. Then we can act.

Acknowledgements

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The Focus 2050 Study for the San Diego region is modeled, in part, on the Focus 2050 study undertaken by King County, Washington and is tailored for incorporation into the California Climate Change Center's Second Biannual Assessment of the implications of climate change for the State of California.

About The San Diego Foundation

With a dynamic mix of leadership, grantmaking, and civic engagement, The San Diego Foundation makes the San Diego region a better place to live. Founded in 1975, The Foundation addresses evolving issues facing our region by convening community leaders, providing research and expertise on topics important to our citizens, and partnering with nonprofit organizations to meet urgent and changing needs. By working with individuals, families and organizations to carry out their giving plans, The San Diego Foundation utilizes charitable dollars toward the ultimate goal of improving the quality of life in the greater San Diego region, now and for generations to come.

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Preface

The California Energy Commission's Public Interest Energy Research (PIER) Program supports public interest energy research and development that will help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace.

The PIER Program conducts public interest research, development, and demonstration (RD&D) projects to benefit California's electricity and natural gas ratepayers. The PIER Program strives to conduct the most promising public interest energy research by partnering with RD&D entities, including individuals, businesses, utilities, and public or private research institutions.

PIER funding efforts focus on the following RD&D program areas:

- Buildings End-Use Energy Efficiency
- Energy-Related Environmental Research
- Energy Systems Integration
- Environmentally Preferred Advanced Generation
- Industrial/Agricultural/Water End-Use Energy Efficiency
- Renewable Energy Technologies
- Transportation

In 2003, the California Energy Commission's PIER Program established the **California Climate Change Center** to document climate change research relevant to the states. This center is a virtual organization with core research activities at Scripps Institution of Oceanography and the University of California, Berkeley, complemented by efforts at other research institutions. Priority research areas defined in PIER's five-year Climate Change Research Plan are: monitoring, analysis, and modeling of climate; analysis of options to reduce greenhouse gas emissions; assessment of physical impacts and of adaptation strategies; and analysis of the economic consequences of both climate change impacts and the efforts designed to reduce emissions.

The California Climate Change Center Report Series details ongoing center-sponsored research. As interim project results, the information contained in these reports may change; authors should be contacted for the most recent project results. By providing ready access to this timely research, the center seeks to inform the public and expand dissemination of climate change information, thereby leveraging collaborative efforts and increasing the benefits of this research to California's citizens, environment, and economy.

For more information on the PIER Program, please visit the Energy Commission's website www.energy.ca.gov/pier/ or contract the Energy Commission at (916) 654-5164.

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Abstract

This report explores what the San Diego region will be like in the year 2050 if current trends continue. Focusing on interrelated issues of climate change, sea-level rise, population growth, land use, water, energy, public health, wildfires, biodiversity, and habitat, the report looks at the potential impacts of a changing climate by 2050, both quantitatively and qualitatively.

The forecasted impacts discussed in this study are based on projections of climate change generated by scientists at Scripps Institution of Oceanography, using three climate models and two emissions scenarios drawn from those used by the Intergovernmental Panel on Climate Change. The impacts are discussed in the context of significant regional growth expected during the period as well as an aging population base.

Key issues explored in the report include potential inundation of six selected low-lying coastal areas due to sea level rise, potential shortfalls in water deliveries, peak energy demand increases due to higher temperatures, increasing risk of devastating wildfires, migrations of species in response to higher temperatures in an increasingly fragmented natural habitat, and public health issues associated with extreme temperature events.

Keywords: Climate change impacts, San Diego region, sea level rise, public health and climate, water and energy scarcity, biodiversity loss

1.0 Introduction

The San Diego region is renowned worldwide for its unique combination of mild climate, low rainfall, breathtaking shorelines, mountains, and deserts—all in close proximity. Not surprisingly then, the region has been one of the fastest-growing areas in the country. This unique set of climate and population characteristics also creates a unique fragility. The complex and fragile interrelationship of urban and natural systems here has been dramatically highlighted by devastating wildfires, as well as by more gradual changes in the region's natural ecosystems.

These complex and fragile relationships which characterize San Diego County (the term San Diego County is used interchangeably with San Diego region herein) are explored further here in the context of climate change. Higher temperatures, changing precipitation patterns, and a rising sea level will create new issues that will require considerable planning and coordination activities, as well as exacerbate existing stresses due to regional growth.

This study considers the regional impacts due to climate change that can be expected by 2050 if current trends continue. The range of impacts presented in this study are based on projections of climate change using three climate models and two emissions scenarios drawn from those used by the Intergovernmental Panel on Climate Change (IPCC). A number of analytical models were developed and used for this study to provide quantitative estimates of the impacts where possible. For example, wave and sea level modeling was used to develop a range of impacts on six low-lying coastal areas in the region. Also, temperature data from the IPCC scenarios were applied to regional ecosystems models to provide information on the migration patterns of species trying to adapt to higher temperatures. These temperature data were also used to extrapolate forecasts of peak electricity demand in the region, which will be exacerbated by higher temperatures as well as the faster inland population growth where the country is hottest.

For some impacts, the study has relied on a literature review and summary of the latest research in the topic of interest. For example, the increased likelihood of regional wildfires as well as the relationship of heat stress illnesses and fatalities due to rising temperatures has been based on these expert reviews. Similarly, the long term supply issues associated with external water deliveries from the Sacramento River Delta and the Colorado River have been based on the conclusions from outside research. These water supply conclusions have been combined with an analytical extrapolation of regional water demand to develop an overall supply and demand analysis for this study.

The population of San Diego County in January 2007 was 3,098,269 people living in 1,131,749 housing units.¹ The San Diego Association of Governments (SANDAG) Regional Growth Forecast (RGF) projects that between 2004 and 2030, the region will add about one million more people. By the early 2020s, the region's annual growth rate

¹ 21 SANDAG, Current Estimates 2007.

is projected to fall below 1% and be slightly above that expected for the United States overall until 2030. The region's population is projected to reach 4.5 million in 2050 (California DOF 2007), an increase of 524,000 persons beyond the 2030 projections.² On average the region's population increases by 0.7% per year after 2030, which matches the projected increase in the U.S. population between 2030 and 2050. This growing population will not only affect the way in which San Diego adapts to climate change, but exacerbate the effects of climate change as well.

As the region's population grows, it will also become older. Approximately one quarter of the region's current population is baby-boomers, the large cohort born between 1946 and 1964. Their presence helps increase the median age in the region from 33.7 years in 2004 to 39 years in 2030, an increase of 16%. Dynamic changes in the region's age structure will continue to occur from 2030 and 2050, albeit at a slower pace than seen in the 2030 forecast. Between 2030 and 2050, the number of people age 65 and older is estimated to increase by 35%, compared to an increase of 14% for the overall population. Age groups under 18, and between 18 and 64, will grow more slowly—at around 10% each. By 2050, almost one quarter of the region's residents (over 1,000,000) will be age 65 and older, with over half being older than age 41. The aging population of San Diego will be more vulnerable to the public health impacts of climate change, including increased heat waves and air pollution.

The goal of the Focus 2050 Study is to provide a scientific basis for local governments and public agencies to develop climate-preparedness plans, which include strategies for mitigating the damage from, and adapting to, climate change. A key message of this study is that there is not any single "silver bullet" to solve these projected impacts, rather that there is a serious need for coordinated actions among local, regional and state authorities to begin or advance planning activities in all of these areas. Additionally, the project's contributors expect the report will help to identify opportunities to capture economic benefits (public and private) from early action. The study is also intended to create a greater awareness of the likely local impacts of climate change compounded by population growth on sea-level rise, land use, water, energy, public health, wildfires, biodiversity, and habitat; and to provide information that can form the basis of informed decision-making by key policymakers in government, business, and community organizations.

² To judge the reasonableness of the DOF 2050 forecast, an independent forecast was prepared based on the average of different extrapolation trends, including an ARIMA (0,2,2) model with no constant. This forecast showed a population of 4.7 million for the region in 2050, 4.4% higher than the DOF forecast. This suggests that the DOF forecast may be conservative, but this difference is well within the expected error of a forecast this far into the future.

2.0 Project Approach

2.1 Climate Change in the San Diego Area

The studies presented in this report are based on analysis using three climate models,³ and two scenarios of energy use and greenhouse-gas (GHG) emissions.⁴ The models and scenarios were among those used in the most recent international climate assessment (by the IPCC), and they are included in the set of models Scripts Institution of Oceanography prepared for PIER for the 2008 California Climate Change Scenarios Assessment. These models were selected because they produced a reasonable representation of seasonal precipitation, the variability of annual precipitation and El Niño/Southern Oscillation, when run for historic periods and compared to known conditions. The A2 emissions scenario represents a differentiated world in which economic growth is uneven and the income gap remains large between now-industrialized and developing parts of the world. People, ideas and capital are less mobile so that technology diffuses more slowly. The B1 emissions scenario presents a future with a high level of environmental and social consciousness combined with a globally coherent approach to more sustainable development. Because there is considerable uncertainty about future greenhouse-gas emissions scenarios, specific probabilities to any of these simulations were not assigned. However, the analysis provides strong and clear indications that the climate that we must plan for will not be the climate to which we have been accustomed.

2.2 Sea Level Scenarios and Coastal Impacts in 2050

To better understand the combined effects and possible impacts of sea level rise and wave activity on San Diego's coastline by 2050, models have been employed that take into account both of these key issues. Local sea level rise is projected using a semi-empirical approach based on global mean temperatures with additional consideration of the moderating influence of dams and reservoirs, which are common within San Diego County. The influence of future wave activity is estimated by applying the sea level rise projections to existing wave models for the region that account for physical variations in local coastline conditions (e.g., island sheltering, wave refraction and shoaling). Predicted impacts are mapped for six low-lying coastal areas to highlight the severity and frequency of shoreline inundation in areas of San Diego County prone to flooding. Coastal features vary among the selected (South Imperial Beach, Coronado Beach and Shores, Mission Beach, South La Jolla Shores, North Del Mar, and OceanSide Harbor); therefore, the predictions also illustrate how impacts may vary along the San Diego coastline in areas with cliffs, estuaries, sea walls, rock jetties, and other man-made

³ The three models are: the National Center for Atmospheric Research's Parallel Climate Model (PCM), the National Oceanic and Atmospheric Administration's Geophysical Fluids Dynamics Laboratory (GFDL) version 2.1, and the French Centre National de Recherches Météorologiques (CNRM).

⁴ The IPCC's Special Report on Emissions Scenarios (SRES) A2 and B1 scenarios.



structures. The analytical approach used to predict climate change impacts associated with sea level rise and wave activity are further described below.

2.2.1. Modeling Sea Level Rise in the San Diego Region

A well-known approach for forecasting sea level rise is the Rahmstorf 2007 semi-empirical method. This method links sea level rise to observed global mean temperatures. The method also assumes that sea level rise along the Southern California coast will be the same as global estimates. The sea level projections developed here also include a lower range of estimates which account for the worldwide growth of dams and reservoirs, which have changed, and will continue to change surface runoff into the oceans (Chao et al. 2008). The effect of these future dams and reservoirs will be a slowing in predicted sea level rise and therefore is a useful lower boundary case when looking at sea level forecasts.

2.2.2. Combining Effects of Sea Level Rise and Wave Activity

The results from the sea level rise projections were then applied to existing wave models used in the San Diego region to develop a better understanding of future wave activity on lower-lying areas. The wave model forecasts, derived from a global climate model simulation, were transformed to 10 meters depth using the Coastal Data Information Program (CDIP) spectral refraction model developed by the Scripps Institution of Oceanography (SIO). The CDIP model was revised to look at offshore wave conditions for a coastline that is slowly progressing landward along with sea level rise. The CDIP model accounts for coastline variations that affect wave height and energy including island sheltering, wave refraction, and shoaling of waves in the southern California Bight. The increased elevation of the shoreline water level owing to wave run-up (called super-elevation) is estimated from the wave conditions using an empirical engineering formula.⁵ Wave-induced super-elevation is then combined with tides, weather effects (e.g., storms), El Niño effects, and longer-term sea level changes (Cayan et al. 2007) to develop a time series profile of shoreline water levels at each site. To run the model, a run-up coefficient of 0.4 was determined by CDIP to represent the relatively mild-sloped cross-shore beach profiles that are seen in the low-lying areas being studied in the San Diego area. Finally, digital elevation data from October 21, 2006, LIDAR (Light Detection and Ranging remote sensing system) coastline surveys were combined with an analysis of the shoreline water level time series to create the maps of potential inundation.

2.3. Climate Impacts on Water in 2050

An overall objective of this part of the study was to extrapolate existing water demand and supply forecasts for 2030 out to 2050 to highlight the pressures of population growth and climate change on the regional water situation. The data used to project water demand and supply from 2005 to 2030 were primarily from the San Diego County Water Authority (Water Authority) 2005 Urban Water Management Plan, along with

⁵ Run-up elevation = 0.4 * Wave Height @ 10 m depth.

additional information provided by the San Diego County Water Resources Department Staff.

Population growth is factored into these forecasts; however, it is important to note that the Water Authority projections assume a 12% per capita demand reduction by 2030 to reflect planned conservation and efficiency measures. The Water Authority's past conservation efforts have focused on indoor water savings. Their future conservation efforts will focus more on landscape irrigation and commercial, institutional, and industrial savings as well as new residential construction standards. Residential surveys conducted in the region by the Water Authority indicate that, depending upon the season, between 40% to 60% of residential water is used for landscaping. Most of the future growth in water demand is expected to be for municipal and industrial (M&I) uses, whereas agricultural water uses are projected to decline due to increase in conservation and efficiency. By 2030, 94% of the demand is expected to be for M&I, with agricultural demand shrinking from 13% of total demand in 2005 to 6% in 2030.

Official San Diego County projections of water demand and supply between 2030 and 2050 are not available due to the lack of demographic and economic projections from local jurisdictions after 2030. The supply projections for water imported from the Metropolitan Water District (MWD) and other new sources from 2030 to 2050 were obtained by estimating how much the projected demand exceeded projected supply from other sources. The demand was projected based on assessments of agency-by-agency trends around 2030. Straight-line extensions were then scaled down to reflect the expectation that the population growth rate in San Diego will decline by 25% (from the pre-2030 rate) after 2030. There are two supply scenarios for 2050; the first was projected assuming "normal climate" conditions (climate change effects were not taken into account), and the second scenario makes the severe assumption that climate change could result in 20% reductions in the availability of imported water and local surface and ground water. The 20% reduction in water availability is based on the results of studies that predict Colorado River flows will decrease in response to climate changes by 18% to 20%. It should be noted that estimates of the reductions in Colorado River flows by the year 2050 have ranged from 6% to as much as a 45% (Christiansen et al. 2004; Millly et al. 2005; Christiansen and Lettenmaier 2007; Hoerling and Fischel 2007).

The relationship between droughts, soil moisture content, and water use in the San Diego region is also very important to understand how potentially more frequent and intense droughts might affect overall water demand. Based on evaluations of historical records, the Water Authority concluded for planning purposes that 1989 was a representative drought year. For this study, future soil moisture conditions for western San Diego County were simulated using the Variable Infiltration Capacity (VIC) water-balance model, with temperature and precipitation data supplied by the Geophysical Fluid Dynamics Laboratory's CM2.1 climate-model simulations of climate under A2 and

⁶ Christiansen et al. 2004, -18%; Millly et al. 2005, -20%; Christiansen and Lettenmaier 2007, -6%; Hoerling and Fischel 2007, -45%.

B1 greenhouse-gas emissions scenarios. The future soil moisture conditions were then compared to the 1989 drought conditions as an index of climate effects on water supplies. The VIC simulation used the GFDL climate model data assuming future A2 and B1 scenarios. In order to calibrate the model the VIC simulation was run and compared against the recent historical period (1950–1999).

2.4. Wildfires in 2050

The frequency of fire incidents and their devastating impacts on the residents of San Diego has increased in direct proportion to human population growth since the vast majority of ignitions are caused by human activities. It is likely that the changes in climate that San Diego is experiencing due to the warming of the region will increase the frequency and intensity of fires even more, making the region more vulnerable to devastating fires like the ones seen in 2003 and 2007. New research has been performed that models the magnitude of wildfire burns in the decade around 2050 as compared to present burn trends (Spracklen et. al. 2008). This research looked at the six ecosystems of the western United States that are most prone to wildfires: Pacific North West, California Coastal Shrub, Desert South West, Nevada Mountains/Semi-desert, Rocky Mountains Forest, and Eastern Rocky Mountains/Great Plains. The California Coastal Shrub ecosystem results are considered further in this study, as this is an important vegetation type relating to wildfires in the San Diego region.⁷

In addition, this study considers the possibility that fire suppression activities have contributed to the recent burn trends in the San Diego region by disrupting natural fuel structures.

2.5. Ecosystems in 2050

Future trends of San Diego ecosystems in response to climate change are evaluated based on relevant literature associated with the growing body of research in paleoclimatology, related studies of paleorecords and assessments of ecosystem changes in correspondence to major climate regimes, and use of new tools such as models to refine local predictions. Several different models were applied and/or modified for this evaluation. Shrubland models and distribution models were used to predict how climate change can affect terrestrial ecosystems and what changes in distribution of species are likely to occur with climate change.

2.5.1. Shrubland Models

The Center for Conservation Biology (CCB) at the University of California, Riverside has developed models predicting potential habitat for a variety of plant and animal species in different ecosystems in Southern California (Preston 2007) with a particular focus on shrubland communities that support a diversity of sensitive plant and animal species in the region (Preston, in press). To understand how changing climate conditions might

⁷ The 2003 and 2007 wildfire events in San Diego were shaped by extended drought that reduced fuel moisture of chaparral and trees, the Santa Ana winds and high temperatures, and the ignition in chaparral that burned “uphill” into the forests.

affect these natural communities in the San Diego region, the CCB conducted climate sensitivity analyses for coastal sage scrub and chaparral vegetation as well as for plant and animal species found in these shrublands (Preston, in press). To assess the sensitivity of the species and the vegetation types to climate change, the models used different temperature and precipitation values⁸ and compared them with current climate conditions. The CCB also developed models predicting suitable habitat for the federally endangered Quino Checkerspot butterfly and threatened California Gnatcatcher (*Poliophtila californica*). The intent was to investigate whether associations between species, such as an animal species' dependence on a particular type of vegetation or specific plant species for food or shelter, might affect their potential distribution in a changing climate. The models developed included associations between animal and plant species under the 2050 climate scenarios.

2.6. Public Health in 2050

Future trends for public health challenges in San Diego caused by climate change are based on the project team's reviews of studies from a growing body of research on the potential public impacts of climate change. Given the importance of air pollution issues in the region today, and projected increased importance of air quality issues in the future due to the aging population, the study team conducted a literature review and summary of public health issues associated with climate change including heat stress illness, respiratory illness due to higher ground level ozone concentrations resulting from higher temperatures, respiratory effects from wildfires, as well as infectious disease implications. The study team also performed quantitative modeling analysis of aerosol fine particulate matter emissions and ambient concentrations trends in the San Diego air basins to evaluate the possible impacts of changes in this key air quality parameter on public health.

Past research has identified links between fine particulate matter (PM_{2.5}) and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing, and premature death. Public health risks from PM_{2.5} are highest among young children and the elderly. Concentrations of air pollutants are affected not only by the direct emissions from different air polluting sources, but also by ambient temperature, humidity, wind speed, mixing height, and precipitation (Bernard et al. 2001; CARB 2005). In general, San Diego County meets the EPA's Annual National Ambient Air Quality Standards (NAAQS) for PM_{2.5} but exceeds the 24-hr NAAQS for PM_{2.5} a few times during the cooler months of the year.

The mathematical model developed here is a first attempt to evaluate the influence of climate change on air pollutant levels in San Diego County. The model projects changes in emissions through population expansion, the application of emission control

⁸ The temperature and precipitation values come from the range of forecasts from the three climate models and two growth scenarios (SRES A2 and B1) considered in this study. Temperature values: +0.6°C (1°F), +1.7°C (3°F), and +2.8°C (5°F). Precipitation values: 50%, 90%, 100%, 110%, and 150%.

programs, and interaction between future temperature and future emissions through 2020, and extrapolates these trends through 2050. The analysis considered the three climate models⁹ and two emissions scenarios¹⁰ used for the overall study climate projections. An air quality box model approach was used to project fine particle (PM_{2.5}) concentrations for San Diego County. Due to time constraints, a box model was used to provide a reasonable approximation of the air quality impacts. Key parameters were incorporated into the model, including current and projected air pollution emissions patterns within the county, current and projected local meteorology, and atmospheric chemical transformation and removal processes (wet and dry deposition) for air pollutants. The model was refined beyond a simple box model so that the results would provide a better estimate. San Diego County was simulated as a 3-D box, with the area divided into five sub-regions and the vertical layer was divided into five levels. This allowed the use of more representative meteorology in each sub-region. Concentrations of chemical species were then assumed to be well-mixed within each sub-region and vertical layer, essentially using 25 separate “boxes” to simulate the county. The concentrations could change based on several processes: (1) chemical reactions were allowed to occur within each box, and were based on reaction rates in the literature, (2) dry deposition rates were calculated using applicable equations based particle size and the respective settling velocities and (3) wet deposition rates were calculated separately for gases and aerosols; for gases, Henry’s law coefficient was used to determine the fraction of a trace gas that is in the liquid rain water, for aerosols, removal was calculated using a first-order loss process described in the literature. The PM contribution from outside San Diego was considered in the projections by using the California Air Resources Board (CARB) emissions data for 2006 and San Diego Air Pollution Control District (APCD)’s Del Mar, Camp Pendleton, and Otay Mesa monitoring stations data for 2006 since these monitors lie towards the boundary of the model. The model’s performance was tested using the 2006 base year by comparing the modeled results with the ambient concentrations for the same year (2006) for all PM_{2.5} monitoring sites in San Diego County (Kearny Mesa, Escondido, El Cajon, Chula Vista, and downtown San Diego). Overall, the model can predict the seasonal increasing and decreasing trends reasonably well.

One major challenge to this work was the development of realistic projections for emission inventories to year 2050. For the A2 scenario, it was assumed no change in emissions from the base year 2006. For the B1 scenario, CARB emissions projection for years 2010, 2015, and 2020 were used and emissions were assumed to be constant at the 2020 level for subsequent years until 2050. Similar emissions projections for reactive organic carbon (ROG), nitrogen oxides (NO_x), and sulfur oxides (SO_x), were used in the

⁹ Meteorological scenarios from the GFDL CM2.1, CNRM CM3, and NCAR CCSM3 were applied downscaling for San Diego County by 12 km x 12 km.

¹⁰ SRESA2: Climate change simulation carbon dioxide (CO₂) 850 parts per million (ppm) max; self-reliance; population increases; economic growth slow. SRESB1: climate change simulation CO₂ 550 ppm max; global solutions; population peaks and steadies; service and information economy.

Temperature data from the three climate models were analyzed to generate maps for peak temperature and cooling degree day (CDD) trends (see Figures 8-1 and 8-2). The maps divide the San Diego region into four climate zones, using data from four

2.7.1. Peak Temperature and Cooling Degree Day Trends

Electricity consumption in San Diego County has increased steadily over the past 17 years with the exception of 2000-2001 due to the energy crisis. Voluntary efforts to reduce consumption have helped San Diego avoid extensive outages since 2001, but more recently consumption trends have resumed and even exceeded pre-crisis levels. The peak demand in 2006 was the highest on record in the San Diego Gas and Electric (SDG&E) territory, driven largely by cooling loads as a result of high summertime temperatures. The main thrust of this section is a quantitative analysis of future peak temperature data and electricity demand as well as a quantitative analysis of future Cooling Degree Day (CDD) trends versus annual electricity consumption. The section also summarizes an analysis of future high temperature days against two high temperature thresholds that SDG&E uses for critical peak pricing determinations to curtail demand. Lastly, this section qualitatively covers other issues relating to higher temperatures and the ability to generate and transmit electricity efficiently.

2.7. Electricity: Powering Growth in a Demanding Future

Consequently, it is felt that the results provide a reasonable analytical approach for this project, given the constraints. Future climate analyses could benefit from the use of the latest photochemical dispersion models that provide for an integrated assessment of gaseous and particulate air pollution. Recommended models include the Community Multiscale Air Quality (CMAQ) model or the Comprehensive Air quality Model with extensions (CAMx).

model to drive the chemical reactions. To model the effects from particulate matter (PM_{2.5}) on human mortality in the region, data for mortality rates of diseases associated with fine particulate aerosols were collected from the California Department of Health Statistics Website.¹¹ These data were then analyzed using the projected PM_{2.5} concentrations from our model to obtain projected mortality rates, using parameters of Pope et al. (2002). According to Pope et al. (2002) each 10 microgram per cubic meter (µg/m³) (over 16 year span) elevation in long-term average PM_{2.5} ambient concentrations was associated with approximately a 4%, 6%, and 8% increased risk of all-cause, cardiopulmonary, and lung cancer mortality, respectively. This data were used to generate the mortality values in Table 1 (Section 3.6). In this mortality model, it was assumed that the population size, demographic characteristics, and long-term ecological effects were constant throughout the period under study. This model's predictions should be viewed as conservative estimates, given predicted future increase in both the absolute size of the population in the San Diego region and the relative proportion of this population that is at high risk from life-threatening respiratory illness from air pollution and heat stress.

commonly used temperature station locations (Lindbergh Field, Miramar, El Cajon, and Borrego Springs). For San Diego energy forecasting, the California Energy Commission (Energy Commission) uses temperature data from Lindbergh Field, Miramar, and El Cajon to simulate future demand. Cooling degree days are the amount of time during the year above a reference temperature of 65°F (18°C)—and so are much more indicative of annual temperature trends rather than daily peak trends. The Energy Commission has used another approach for annual consumption adjusted for temperature that correlates hourly temperature and hourly demand data over an entire year. This approach could not be used for this project as the necessary data were not readily available from SDG&E.

2.7.2. Peak Demand Trends for Electricity

Peak summertime temperatures have a well-established relationship to peak electrical demand that utilities use for the purpose of load planning. The study team reviewed actual and predicted peak temperatures and electricity demand data from 1980 through 2050 for the three climate models and two growth scenarios. The analysis was performed using the moderate peak temperature model (GFDL – A2 scenario) to correlate historical electricity demand with regional population and the four climate zone¹² temperature trends and compared with an Energy Commission’s 10-year peak demand forecast through 2018; these Energy Commission data are actually an average of readings from Miramar, El Cajon, and Lindbergh Field. This comparison showed very good agreement and gives confidence in using the same technique to project demand through 2050.

2.7.3. Annual Consumption Trends for Electricity

To look at annual energy consumption in 2050, a different technique was used than for peak demand. Annual electricity consumption forecasts can be quite complex, with many variables (among them economic growth, population, temperature, and efficiency). In order to simplify the analysis, the only variables taken into account were annual temperature and population. The authors converted the annual temperature data into CDDs by averaging the daily data for maximum and minimum temperature included in the climate models to determine the daily average temperature. The daily CDD values were calculated on a Base 65 basis. The daily CDDs were then summed for each year to get the annual values that were used for the analysis. These values were verified through a regression analysis that this correlation of population, CDDs, and energy consumption tracks closely to the Energy Commission’s current 10-year forecast. This gives confidence in the projections to 2050.

¹² California has 16 climate zones as defined by the California Energy Commission. These zones represent regions with similar weather characteristics and are used in Title 24 energy analysis and compliance. A map of the climate zones is presented in Appendix M. http://www.energy.ca.gov/maps/building_climate_zones.html



2.7.4. Extreme Temperature Events and Impact on System Reliability

To look more closely at future extreme-heat events, the authors considered future peak temperatures at Miramar. Miramar was selected because the Marine Corps Air Station is currently used as the station that determines SDG&E's Critical Peak Pricing (CPP) tariff. Two thresholds were evaluated for Miramar: 84°F (29°C), which is currently used by SDG&E to trigger a Critical Peak Pricing event (when the cost of electricity to commercial customers increases significantly to incentivize reduced consumption); and 93.8°F (34.3°C), which represents the one-in-10 event for maximum temperatures over the last ten years.

3.0 Project Outcomes

3.1 Climate Change in the San Diego Area

3.1.1. Climate Change

Scientists have developed predictive models that not only show global trends but also can be "downscaled" to provide more detailed projections of changes over time on the scale of cities and regions as has been done here for San Diego (see Figure 1). The magnitude, and sometimes the pattern, of climate impacts for the twenty-first century vary according to the model and to the amount of greenhouse gas emissions. However, the simulations do converge in many aspects of the climate on a global scale and for the San Diego region. All six of the simulations warm over the next five decades. There is considerable uncertainty regarding future GHG emissions, so it is not possible to assign odds to either of the two emissions scenarios.¹³

3.1.2. Warming

From observations and from model historical simulations, it appears that the temperatures began to warm more substantially in the 1970s; this is likely a response to effects of GHG accumulation, which began to increase significantly during this time period (Bonfil et al. 2007; Barnett and Pierce, in press). All of the climate model simulations exhibit warming across San Diego County—ranging from about 1.5°F to 4.5°F (0.8°C to 2.5°C, see Figure 2), with some differences in the timing and geographic distribution of the changes. The warming becomes progressively greater through the decades of the twenty-first century. There is greater warming in summer than in winter, with surface air temperatures in summers warming from 0.7°F to more than 2°F (0.4°F to 1.1°C) over that found in winter. There is a distinct Pacific Ocean influence wherein warming is more moderate in the zone within approximately 50 km from the coast, but rises considerably, as much as 2°F (1.1°C) higher, in the interior landward areas of San Diego County as compared to the warming that occurs right along the coast. Because the greatest population growth in San Diego is projected to occur in the interior areas, there

¹³ Each model differs, to some extent, in its representation of various physical processes. The climate projections should be viewed as a set of possible outcomes, with each having an unspecified degree of uncertainty.

are important implications for meeting the energy, water, health, and ecosystem needs in the region.

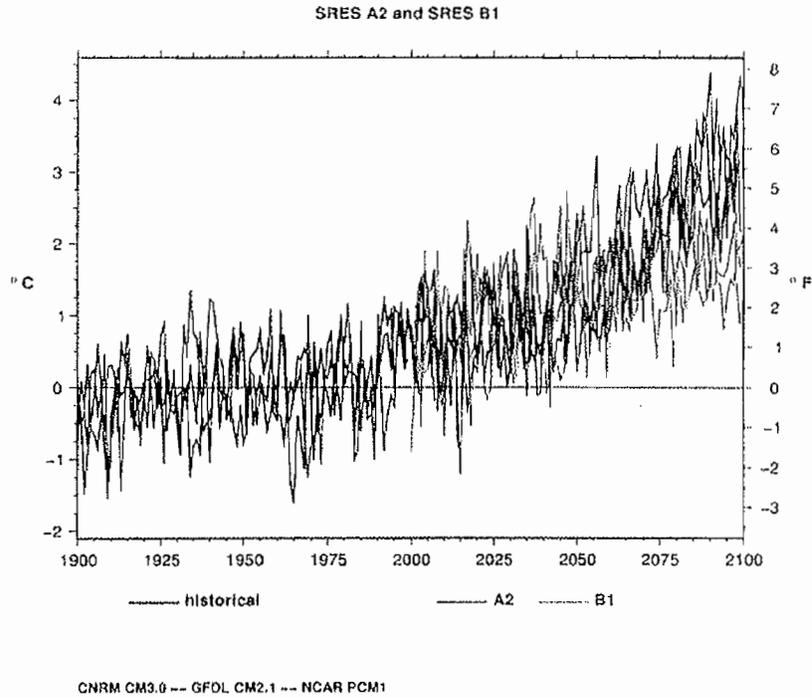


Figure 1. Change in annual mean temperature, San Diego region from the three GCMs, for the historical period (blue) and for the A2 (red) and B1 (brown) emission scenarios

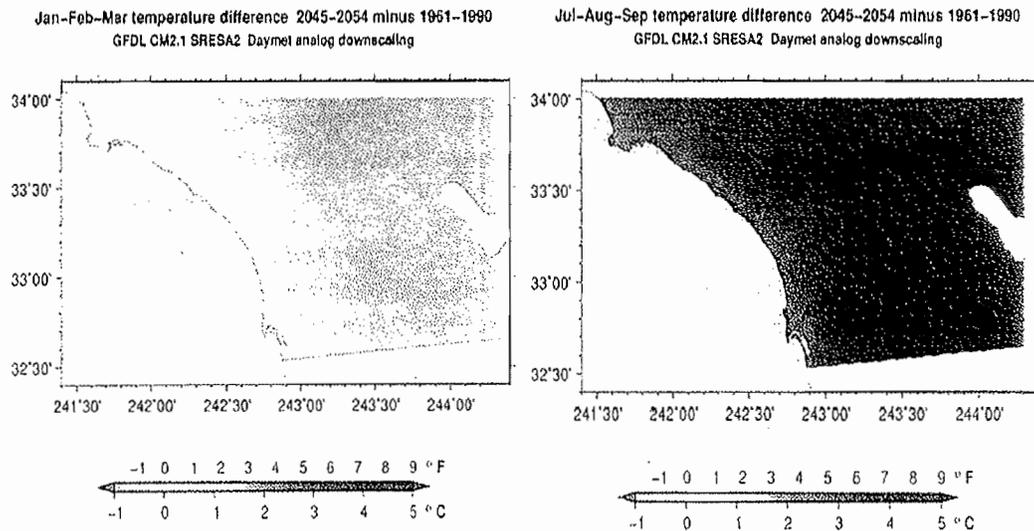


Figure 2. Winter and summer temperature differences

3.1.3. Heat Waves

Extreme warm temperatures in the San Diego region mostly occur in July and August, but as climate warming takes hold, the occurrences of these events will likely begin in June and could continue to take place into September. All simulations indicate that hot daytime and nighttime temperatures (heat waves) increase in frequency, magnitude and duration. For instance, in one inland portion of San Diego County there will be more than a threefold increase in hot days.

3.1.4. Precipitation

The simulations indicate that San Diego will retain its strong Mediterranean climate with relatively wetter winters and dry summers. Projections of future precipitation have mixed results; three of the simulations become drier (12%–35% drier than historical annual average) and three are wetter (12%–17% wetter than historical annual average) overall. This reflects the reality that precipitation cannot yet be modeled with the same degree of consistency as other climate change parameters. The models vary in their projections of storminess¹⁴ but none show a significant change from past patterns.

One important aspect of all of the climate model projected simulations is that the high degree of variability of annual precipitation that the region has historically experienced will prevail during the next five decades. This suggests that the region will remain highly vulnerable to drought.

3.1.5. El Niño/Southern Oscillation

Historically, the El Niño/Southern Oscillation (ENSO) has been an important influence on weather conditions in Southern California. Each of the climate models contains ENSO within its historical simulations. Although there is no evidence for an increase in the frequency of ENSO, each of the simulations exhibits continued ENSO activity within the twenty-first century. There is already a modest tendency for the San Diego region to experience higher than normal precipitation during El Niño winters and lower than normal precipitation during La Niña winters. This pattern is expected to continue under climate change conditions in the future. Regarding ENSO intensity, the IPCC scenarios show little change over the century, but this conclusion has come under recent criticism from leading scientists in the field who conclude that there is a "significant probability of a future increase in ENSO amplitude" in this century (Lenton et al. 2008). Changes in ENSO intensity will result in stormier years and drier years, which have implications for public health planning that is considered later in this study, as well as coastal impacts.

¹⁴ Indicated by the number of days per year when sea level pressure equals or falls below 1005 mb.

3.2. Sea Level Scenarios and Coastal Impacts in 2050

3.2.1. Modeling Sea Level Rise in San Diego Region

Results of three simulation scenarios indicate sea level increases of 12–18 inches by 2050. Projected sea level rises based on application of the Rahmstorf 2007 method with and without adjustment for the effects of dams are compared with observed values between 1900 and 2000 in Figure 3. As sea level rises, there will be an increased incidence of extreme high sea level events, which occur during high tides, often when accompanied by winter storms and sometimes exacerbated by El Niño occurrences (Cayan et al. 2007). As the decades proceed, the simulations show an increasing tendency for heightened sea level events to persist for more hours, which will likely cause greater coastal erosion and related damage.

3.2.2. Combining Effects of Sea Level Rise and Wave Activity

Figures 4 through 9 show the projected impacts in 2050 in the six already flood-prone areas analyzed with the revised CDIP wave model, with a brief explanation of the specific impacts at each site. The colored zones represent new flooding areas. The Figures depict predicted wave event frequencies using the following definitions:

- **Very Likely:** predicted high tide range in 2050.
- **Moderately Common:** estimated sea level + tide + wave run-up elevation¹⁵ recurrence, on average, every 5 years in the 50-year simulation. Expected to occur every few years when El Niño conditions are not present.
- **Moderately Rare:** estimated sea level + tide + wave run-up elevation recurrence, on average, every 10 years in the 50-year simulation; but expected in most years when El Niño conditions are present.
- **Somewhat Rare:** estimated sea level + tide + wave run-up elevation recurrence on average every 25 years, based on the 50-year simulation.
- **Very rare:** highest combination of sea level + tides + wave run-up elevation in the 50-year simulation.

These maps are considered conservative since they only include the impact of waves on the portions of the shoreline exposed to the open ocean. Therefore, the back-bay areas only show inundation due to sea level plus tides and do not show any wave activity. In addition, the maps do not account for potential changes in shoreline elevation that could occur with future wave erosion. This could have a cumulative effect and cause increased inundation as wave erosion removes portions of the current shoreline. Additionally, there are many other sensitive areas along San Diego's almost 70 miles of coastline that have not yet been surveyed. Their inclusion, especially of those economically and strategically significant sites, is needed in future research.

¹⁵ Wave run-up is the maximum vertical extent of wave uprush on a beach or structure above the still water level (SWL).

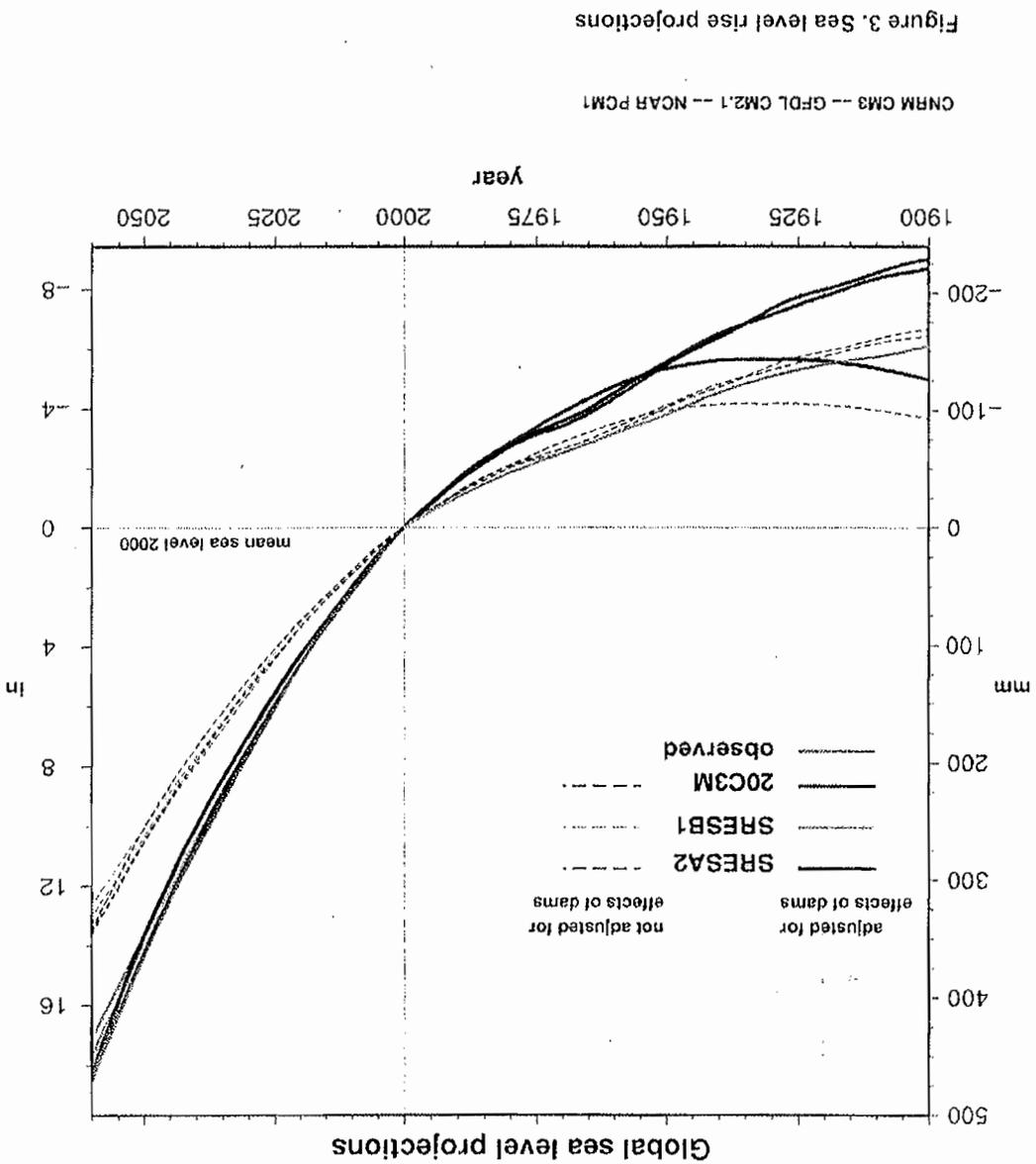
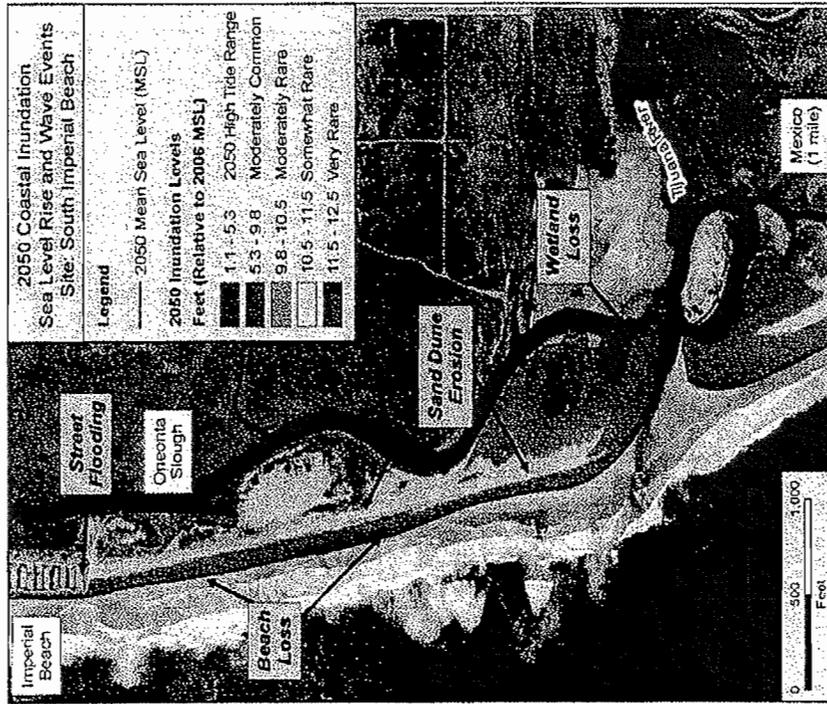


Figure 3. Sea level rise projections

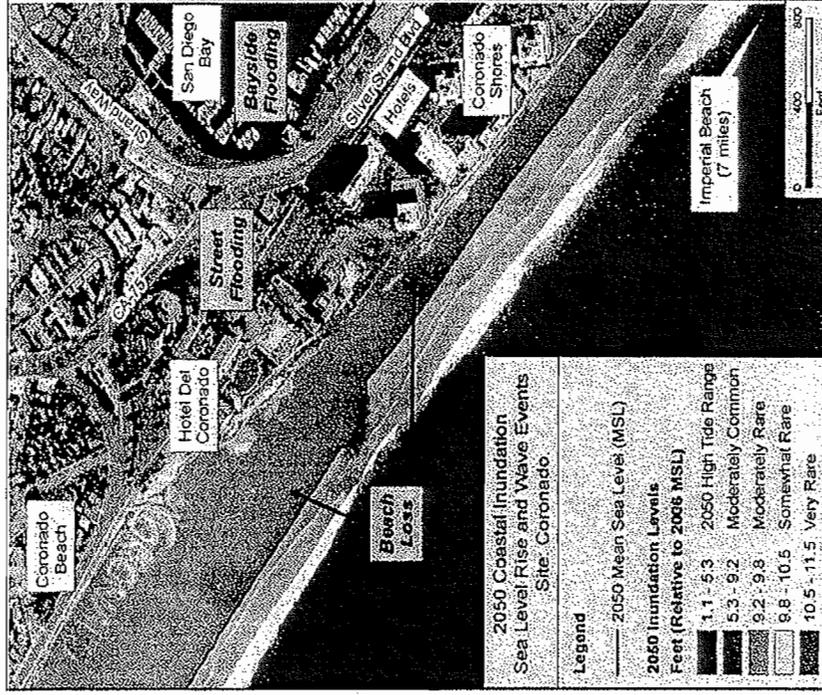
GNRM CM3 -- GFDL CM2.1 -- NCAR PCM1

Figure 4. South Imperial Beach



Tidal fluctuations alone (purple) appear to inundate sandy beach and the Tijuana River mouth. Adding run-up from moderately common wave events (blue) floods majority of sandy beach. Very rare wave events (red) flood sandy beach, areas of sensitive sand dune habitat and surface streets in south Imperial Beach. The dune line shown north of the river mouth would likely be eroded by even a moderately rare inundation event.

Figure 5. Coronado Beach and Shores



Tidal fluctuations alone (purple) appear to inundate sandy beach and jetty. Adding run-up from moderately common wave events (blue) floods the majority of sandy beach and portion of parking lot at the Hotel Del Coronado. Very rare wave events (red) flood sandy beach, some surface streets and heavily used boardwalk in front of hotels. "Coronado" is spelled out in the artificial dunes by the beach (maintained by a local resident) and demonstrates the fidelity of the LIDAR measurements.

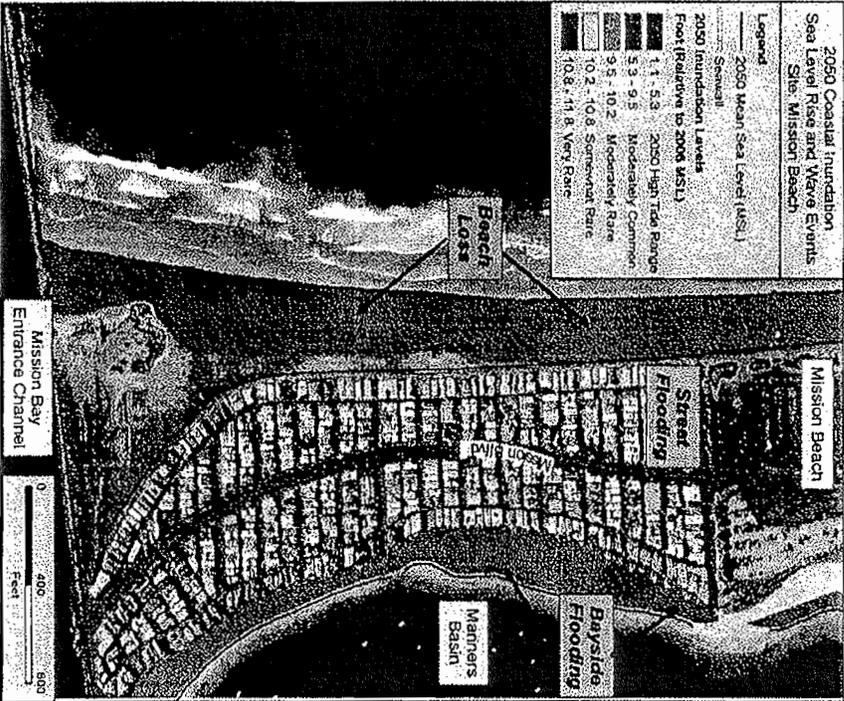


Figure 6. Mission Beach

Tidal fluctuations alone (purple) appear to inundate portions of sandy beach and streets from bayside flooding. Adding run-up from moderately common wave events (blue) floods majority of sandy beach, streets and parts of Mission Beach Park. Moderately rare wave events (green) appear to breach seawall and inundate streets and sidewalks. Very rare wave events (red) flood sandy beach, surface streets and heavily used boardwalk in Mission Beach

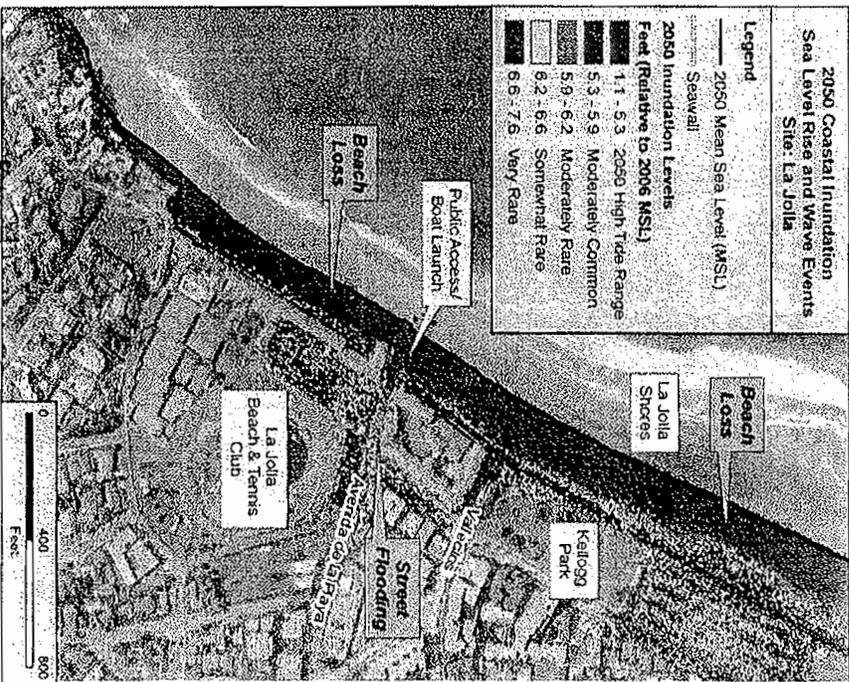
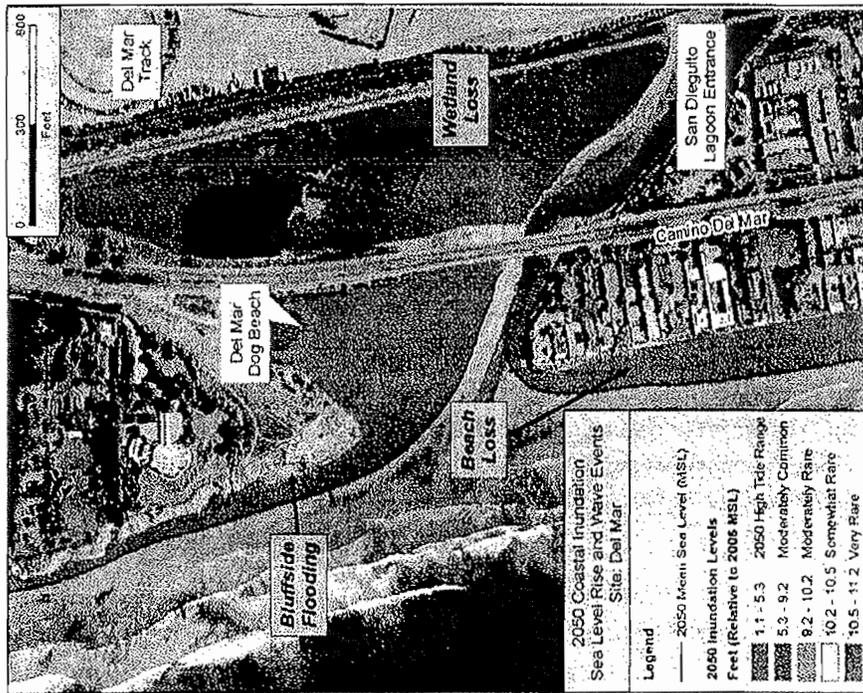


Figure 7. La Jolla Shores

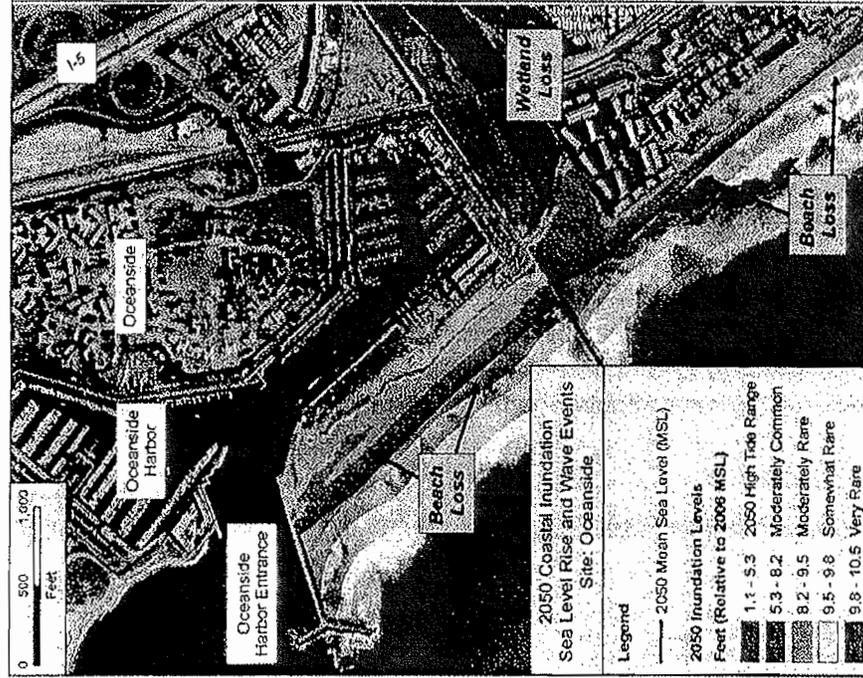
Tidal fluctuations alone (purple) appear to inundate majority of sandy beach and Boat Launch. Adding run-up from moderately common wave events (blue) floods majority of sandy beach and end of street at Avenida de La Playa. Very rare wave events (red) flood sandy beach, breaches seawall, floods some surface streets, parts of the heavily used Kellogg Park and La Jolla Beach and Tennis Club.

Figure 8. Del Mar Beach



Tidal fluctuations alone (purple) appear to inundate much of sandy beach and entrance to San Dieguito Lagoon. Adding run-up from moderately common wave events (blue) floods majority of sandy beach (Dog Beach) and causes bluff-side flooding. Very rare wave events (red) flood sandy beach, cause bluff-side flooding and may impact coastal homes. The more frequent exposure of the base of the bluffs to waves on high tides increases the likelihood of bluff failures.

Figure 9. Oceanside Beach

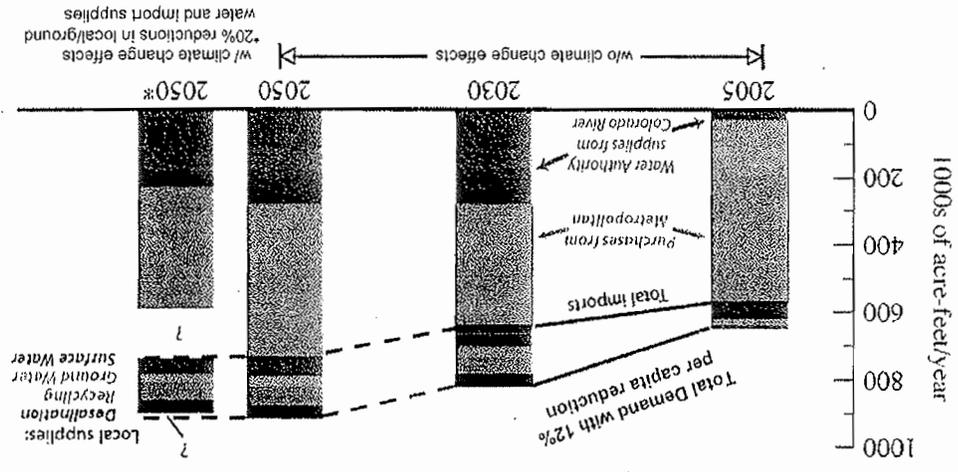


Tidal fluctuations alone (purple) appear to inundate portions of sandy beach and wetland. Adding run-up from moderately common wave events (blue) floods south jetty and portions of beach. Moderately rare wave events (green) flood majority of north beach.

The Water Authority predicts an increase in water demand of around 24%, from 668,000 acre-foot/yr (the 2001-2005 average) to about 830,000 acre-foot/yr in 2030: 70% of this demand is expected to come from imported sources. The estimated demand in 2050 is 915,000 acre-foot/yr. If this 2050 water demand and use is realized, it will represent an increase of 37% over the 2001 to 2005 period. Under current demand and planned local supply projections, about 80% or 730,000 acre-foot/yr of the water supply would be imported. Production from ground-water supplies is anticipated to increase by 75% to about 31,000 acre-foot/yr by 2015. After that, local surface and groundwater supplies will have reached their foreseeable limit and additional less-traditional sources will be needed to meet most new demands beyond those that will be supplied by imported water.

Figure 10 illustrates that increased demand from 2005 to 2030 is expected to be accommodated by increased supplies from the Colorado River, as well as from desalination and recycling.

Figure 10. Projected water demand and supply in 2005, 2030, and 2050, under "normal year" and climate change conditions



The projected water demands and supplies in 2005, 2030, and 2050 are illustrated in Figure 10. The height of the bars represents the water demand, and the expected sources of water are illustrated by the different colors of the bar segments. The two bars labeled "2050" show the expected water sources for San Diego in the year 2050 under the normal climate and climate change scenarios.

3.3.1. Water Demand and Supply

The results of the projected future water demands and supplies and modeled effects of drought and water use on soil moisture conditions are discussed below.

3.3. Climate Impacts on Water in 2050

From 2030 to 2050, increased demand is also expected to be accommodated by increased purchases from MWD. By 2050, San Diego will need commitments for imported water equivalent to 17% of California's current 4.4 million acre-feet/yr allocation of Colorado River water. However, climate change is expected to result in significant declines in Colorado River flows and thus in availability of these waters for import to San Diego. Recent projections have ranged from about a 6% decline to as much as a 45% decline in Colorado River flows (Christiansen et al. 2004; Milly et al. 2005; Christiansen and Lettenmaier 2007; Hoerling and Eischeid 2007).¹⁶ In absolute terms, a 6% cut to California's allocation would amount to 264,000 acre-feet/yr less water availability; a 45% cut would amount to around 2 million acre-feet/yr less water. Overall, the sources of most of San Diego's imported water are likely to be challenged due to climate change effects. Blank areas with question marks in the far right bar in Figure 10 (climate change scenario) indicate shortfalls in water supplies by 2050 due to the 20% reductions in the volumes of available imported water and local surface and ground water. These shortfalls in water supplies represent a significant concern to the San Diego region.

In recent years, the states that draw water from the Colorado River have negotiated a shortage-sharing agreement that specifies how supply shortfalls from the river of as much as 8% might be shared by water users. A new study (Barnett and Pierce, in press) estimated that, without this agreement, the major reservoirs of the Colorado River could be emptied within a few decades by a combination of increasing demand and climate change. In addition, recent calculations (D. Pierce, unpublished calculations, 2008) indicate that overall demand for Colorado River water will have to be reduced by 20% to achieve a 90% chance of maintaining water in its reservoirs by 2050.

Future water supplies to Southern California also are expected to be affected by the CALFED program, which is trying to balance water supplies with environmental goals for the Sacramento-San Joaquin River Delta, as well as the amounts and availability of freshwater associated with the Sierra snowpack. In particular, the goals of the CALFED program are: (1) improve the reliability of the water supplies in California; (2) improve water quality in the Bay-Delta system; (3) restore ecosystems in the Bay-Delta estuary; and (4) stabilize the Sacramento-San Joaquin Delta levee system (Dettinger et al. 2003).

The Delta's deteriorating levee system may be subject to more frequent and severe winter rain storms as a result of climate change. A failure of the levee systems and/or greater salt water intrusion into the Delta, due to rising sea level, could result in significant reductions in water supplies or water quality. The watershed that drains to the Delta includes the western Sierra Nevada mountain range. In response to future climate change, the Sierra snowpack (and spring snowmelt) is projected to decline by at least 25% by the year 2050 (California Department of Water Resources 2007), thereby reducing freshwater flows to the Delta and the volume of water available for export. Consequently, adapting California's water management systems to future climate change represents will be a significant challenge in the twenty-first century.

¹⁶ Christiansen et al. 2004, -18%; Milly et al. 2005, -20%; Christiansen and Lettenmaier 2007, -6%; Hoerling and Eischeid 2007, -45%.

3.3.2. Effects of Climate Change and Regional Soil Moisture Content on Increased Water Use

The effects of climate change on San Diego's water demand are likely to reflect both warming and drying trends. Climate-change projections for the Southwestern United States indicate that by 2050, runoff and ground water could decline by an average of about 7 inches/yr over the entire Southwest (Seager et al. 2007; Milliman et al. 2005). As noted earlier, elevated greenhouse gas levels are expected to produce temperature increases of 1.5°F to 4.5°F (0.8°C to 2.5°C) over Southern California by the mid-twenty-first century. More frequent and drier (20% drier) drought years are also projected for San Diego by the early twenty-first century, assuming increased ENSO intensity.

As illustrated in Figure 11, future soil moisture conditions are expected to drop below the 1989 drought threshold with an increasing frequency and greater severity. The model results shows droughts becoming 50% more common during the 2000–2049 period than during the 1950–1999 period. Figure 11 shows historical observations from 1950 to 1999 as well as future projections from the climate model. Three of the historical observations were dry or drier than the 1989 threshold. However, the model calibration over the historical period shows five years being dry or drier than 1989. The VIC model projects that in 2030, a drought comparable to 1989 would increase water demand by 6.5%, in large part due to decreased soil moisture content.¹⁷ In 2050, the demand would increase from 915,000 acre-feet/yr in a normal year to 980,000 acre-feet/yr in drought years, and drought years might occur as much as twice as often (Figure 11). Drought years in the future might also yield larger demand than the 7% increase associated with 1989 because they are projected to be considerably drier than 1989.

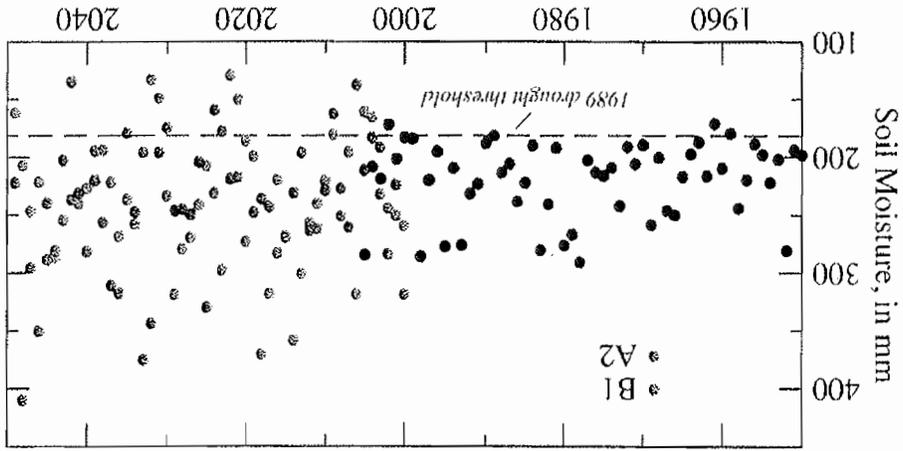


Figure 11. Simulated Annual-Mean Soil Moisture, Western San Diego County

¹⁷ A lower soil moisture content increases agricultural and landscaping water demands.

Consequently, there is much reason for concern that even with creative and innovative arrangements among competing water interests, along with concerted conservation measures and enhancement of identified supply sources, the combined effects of regional growth, water use practices, and climate change will expose the region to greater risk of water shortfalls even before 2050.

3.4. Wildfires in 2050

3.4.1. Relationship between Climate Change and Wildfires

Extended drought conditions forecasted by climate models in the coming decades are expected to increase the likelihood of large wildfires. A past study of the western United States has shown (Westerling et al. 2006) that large wildfire frequency and longer wildfire durations increased in the mid-1980s when there was a marked increase in spring temperatures, a decrease in summer precipitation, drier vegetation and longer fire seasons. A more recent study (Spracklen et al. 2008) explores these relationships to 2050 using temperature and precipitation data from a global climate model (GISS). This study suggests that 42% more California Coastal Shrub acreage will burn in the decade around 2050 as compared to present trends and that overall, 54% more acreage in the western United States will burn compared to present.

Wildfires in the San Diego region occur throughout the year, but most strongly during late summer and early fall. Over the twentieth century, the area burned by wildfires has undergone substantial fluctuations, but in the last 10 years the extent of these wildfires was unprecedented, greatly exceeding that during any past decade (Figure 12). In 2003 and 2007, wildfires burned nearly 740,000 acres. The question of whether we are now in a higher state of vulnerability to such fires due to climate change merits further research to better inform disaster preparedness efforts.

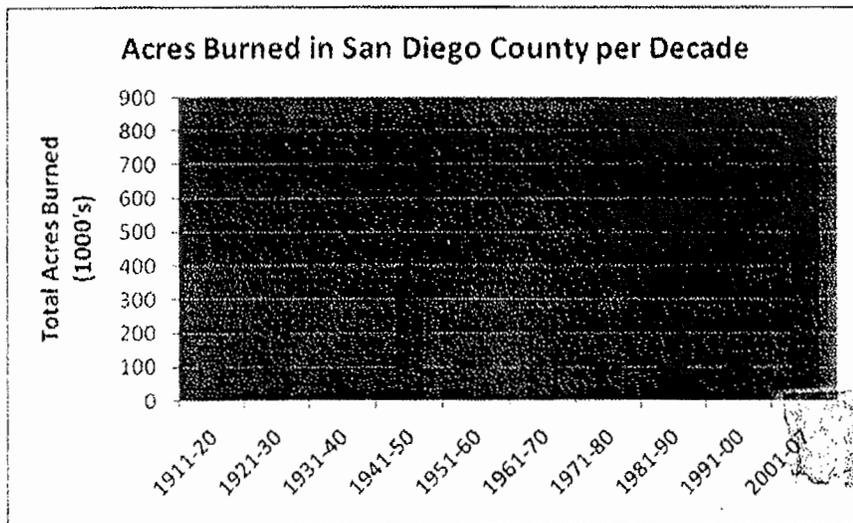


Figure 12. Acres burned in San Diego county per decade

Climate change models yield somewhat different predictions about the frequency, timing and severity of future Santa Ana wind conditions, leading to uncertainty regarding how Santa Ana winds will affect San Diego regional fire regimes in the future. A recent study on anthropogenic reduction of Santa Ana winds (Hughes et al.) indicates that these events are expected to decrease by the mid-twenty-first century in both frequency and intensity due to higher temperatures in the desert during wintertime creating less pressure gradient between the mountains and the ocean.

An earlier analysis (Miller and Schlegel 2006) for the period 2005-2034 suggested that Santa Ana conditions (dry hot winds blowing down the mountains from the deserts in the east) may significantly increase earlier in the fire season (especially September), while they may decrease somewhat later in the season (in particular, December). This predicted shift to earlier Santa Ana occurrences would increase the frequency of Santa Ana fires, as severe fire weather would coincide more closely with the period of most frequent fire ignitions.

Some recent research indicates that fire suppression activities have had a negative effect on fires in California. A study by Minnich and Franco-Vizcaino compared chaparral and forest fire regimes in Southern California (SCA) undergoing suppression activities with that of Baja California (BCA) where fires run free (Minnich et al. 2009). This study concluded that while suppression activities in SCA have reduced the number of fires, it has increased the size of old-growth patch elements and therefore increased the spatial extent of fires that do occur. Another study by Goforth and Minnich (in press) concludes that historical records of pre-suppression wildfires in Southern California chaparral are not reliable to evaluate the effects of fire suppression activities.

There are different opinions among scientists regarding the effects of fire suppression activities in the recent regional fires. A recent study specific to the San Diego area showed that over the last 130 years there has been no significant change in the incidence of large fires greater than 10,000 hectares. This is consistent with the conclusion that local fire suppression activities are not the cause of these fire events (Kealey and Zedler, In press). The research also showed that eight megafires (≥50,000 hectares) are recorded for the region and half have occurred in the last five years. These burned through a variety of age classes of vegetation, which raises doubts that accumulation of old age classes explains these events. The research concludes that drought is a plausible explanation for the recent fires as it increases dead fuels that promote the incidence of firebrands and spot fires.

3.5. Ecosystems in 2050

3.5.1. Threats to Biodiversity and Ecological Processes

Located at the heart of a global biodiversity hotspot, the biological richness of San Diego is difficult to overstate. A 1997 study presented in *Science* magazine listed it as one of two counties in the nation as having the greatest convergence of endangered and threatened species (along with Santa Cruz) with fish, mammals, and plant hot spots all coinciding. Past and present land use changes have brought significant, often cascading impacts to biodiversity across San Diego

County. The starkness of the fragmentation¹⁸ pattern in San Diego reveals how the size, shape, and isolation of habitat fragments affect their ability to support native species. When habitat is fragmented by human land uses, it can trigger ecological cascades that result in the loss of species. Such "ecosystem decay" leading to loss of biodiversity can take decades to play out following the fragmentation.

A changing climate will add to the stress on ecological systems in ways that may create feedback cycles with significant consequences. For example, as the amount of rainfall occurring within (and between) years changes, the effects of fragmentation on native species may be even more intense. Also, the current fire regime is changing rapidly and many species will not be able to adapt fast enough, which can lead to the extinction of native plants and animals. There is evidence pointing to nitrogen deposition as being one of the factors contributing to the recent changes of fire regimes in Southern California. Although more research is needed in this area, nitrogen deposition may contribute to greater fuel loads by facilitating the proliferation of invasive grasses and thus altering the fire cycle in the region (Allen et al. 2003).

With climate change, the "climatic envelopes"¹⁹ that species need will move due to increasing temperatures and more frequent fires. For many species, a changing climate is not the problem per se. The problem is the rapid rate of climate change: the envelope will shift faster than species are able to follow. For other species, the envelope may shift to areas already converted to human land use. To put the rate of temperature change for species survival into context, a 1°F–5°F (0.56°C–2.8°C) increase by 2050 predicted by the three climate change models is 10–50 times faster than the temperature changes (2°F, or 1.1°C per 1000 years) that occur when ice ages recede.

3.5.2. Specific Impacts of Climate Change

Forests

California climate projections indicate forest ecosystems will be substantially affected by temperature rise and indirect climate change effects (Cayan et al. 2008a). Extended drought can stress individual trees, increase their susceptibility to insect attack and result in widespread forest decline. For example, it is thought that lowered water tables from drought and excessive groundwater pumping is causing coast Live Oaks in the Descanso area to die out as experts cannot isolate a disease or insect causing their ruin.

The projected warmer winter temperatures may indirectly increase insect survival and populations, including pest species such as bark beetles that girdle and kill the trees. Forest-dependent fish and wildlife species may be lost as a result of reduced forest habitat and other

¹⁸ *Fragmentation* is the emergence of discontinuities in an organism's preferred environment (habitat). Habitat fragmentation can be caused by geological processes that alter the layout of the physical environment or by human activity such as land conversion, which can alter the environment on a much faster time scale.

¹⁹ Locations where the temperature, moisture and other environmental conditions are suitable for persistence of species.

²⁰ *Intertidal* refers to the area along an ocean coastline that is exposed to air during low tide and submerged at high tide; organisms in the intertidal zone are adapted to harsh conditions.

²¹ *Subtidal* refers to the area along an ocean coastline below the intertidal zone; the subtidal zone is always covered by water.

²² *Lipwelling* is an oceanographic phenomenon that involves wind-driven motion of dense, cooler, and usually nutrient-rich water towards the ocean surface, replacing the warmer, usually nutrient-depleted

The predicted increase in global temperatures over the next century will cause an increase in the temperature of the sea and will also have other effects on coastal oceanography, such as changes in the intensity of winds along the coast that can lead to major changes in upwelling²²

be different from today.

The year 2050, the diversity of the marine species along the San Diego coast will almost certainly associated with discharges and harvesting also affect populations on local to regional scales. By climate regime shifts (Chelton et al. 1982; MacCall et al. 2005). Human-induced impacts marine algae, invertebrates and fish. Marine ecosystem productivity is strongly influenced by

Coastal Ocean

The intertidal²⁰ and subtidal²¹ habitats along the coast of San Diego contain a large diversity of conditions.

songbird were reduced by 68%–100% relative to the climate-only models under altered climate most plant species were included in the animal models, potential habitat for the butterfly and variables and did not consider species associations. It was found that when vegetation, shrub or with plant species, were compared with predictions from models that included only climate habitat for the Quino Checkerspot butterfly and California Gnatcatcher, when in association that they depend on each other increases the overall effects. The CCB models predicting suitable Plant and animal species will each differ in their sensitivity to a changing climate, but the fact substantially reduce the range and extent of future shrublands.

Diego County. Projected increases in non-native grasses and fire frequency also may elevation shifts in response to climate change are expected to be substantially constrained in San the elevated temperatures with current or reduced levels of precipitation. As noted above, similar manner as coastal sage scrub, although higher percentages of suitable habitat remain at reductions at higher temperatures and extremes in precipitation. Chaparral responded in a predicted to decrease between 10% and 100% under altered climate conditions, with the greatest there is greater precipitation. The suitable environmental conditions for coastal sage scrub were precipitation, each vegetation type moves to higher elevations where conditions are cooler and The results of the CCB modeling showed that in response to rising temperatures and reduced

Southern California Shrublands

indirect effect of climate change, such as drought, increased non-native grasslands, and wildfire. Latitudinal and/or elevation range shifts in the distribution of plant and animal populations in response to climate change could be severely constrained in the county as a result of population growth and development, habitat degradation by non-native grasses, unsuitable soils or other physical limitations (Parmesan 2006).

patterns (Rykaczewski 2008), which, in turn, influence nutrient supply and coastal ecosystem dynamics. However, the relationship between climate change and wind-driven upwelling is complex (Harley et al. 2006) and specific predictions of how upwelling patterns in San Diego and in adjacent regions will change are not yet available. Predicted sea level rise also is likely to have an impact on the marine communities in San Diego County. Effects of sea level rise mainly apply to intertidal species (Harley et al. 2006). As sea level rises, the boundary between land and sea moves landwards and whether intertidal habitat is lost would depend on the coastal topography. When intertidal habitats are bordered by high cliffs or anthropogenic structures such as seawalls and breakwaters, existing intertidal habitats (beaches, rocky shores) are prevented from migrating landwards, which results in a net loss (drowning) of these habitats (Galbraith et al. 2002).

Loss of rocky beach habitat is of particular concern because the two main intertidal marine reserves in San Diego, Cabrillo National Monument and Scripps Coastal Reserve, are bordered by steep cliffs and will almost certainly lose much of their intertidal habitats. Predicting which species will persist or not and how changes in species composition and abundance may affect local productivity and fisheries remains a complex challenge.

Monitoring programs have been funded by a variety of entities with different study objectives; consequently, considerable knowledge gaps remain regarding the status of marine resources within the Southern California Bight. State agencies such as the California Ocean Protection Council and the State Coastal Conservancy are aware of the needs for additional information and have recently stated: "The relationship between ocean observation technologies and on-the-ground management needs is not well understood by state and federal environmental and resource agency managers, members of the California State Legislature or members of Congress" (California Ocean Protection Council 2008).

3.6. Public Health in 2050

3.6.1. Climate Change Direct Effects on Public Health

Extreme Heat Events

Heat waves have claimed more lives over the past 15 years than all other declared disaster events combined in California, and heat waves are expected to increase in frequency, magnitude and duration in San Diego over the next 50 years. As shown on Figure 12, the number of days over 97.3°F (36.3°C) in the Miramar area is projected to increase six-fold, accompanied by a projected four-fold increase in the number of days over 93.8°F (34.3°C) for the years 2041–2050. Days over 84°F (28.9°C) are projected to increase from the recorded current average of 78 days to 129 days during the period 2041–2050 and these hot days are expected to occur from April to December. Public health risks around extreme heat are not equal; certain individuals, populations and communities are at greater risk than others. A recent analysis of temperatures during summers with no heat waves (1999–2003) found a 3% increase in deaths in

surface water.

any given day for a 10°F (5.6°C) increase in temperature (including humidity) (Basu et al., unpublished).

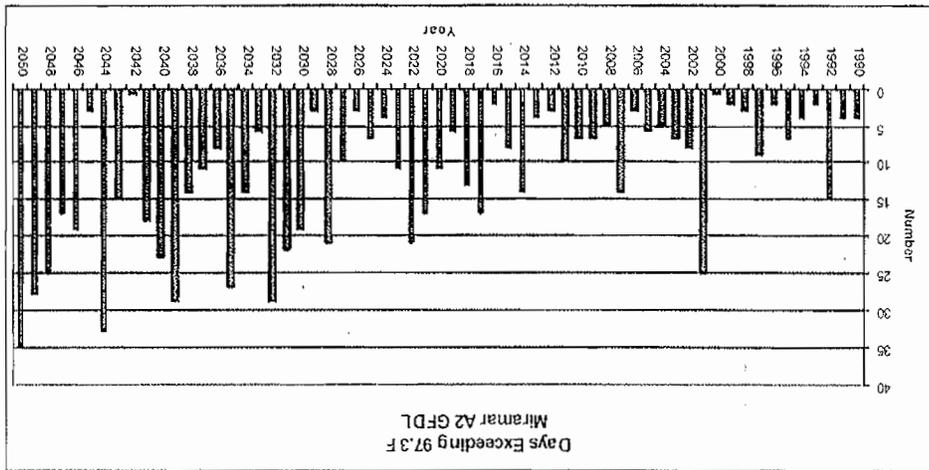


Figure 13. Days exceeding 97.3°F (36.3°C), Miramar A2 GFDL

Factors that should be considered when identifying community-level risk include the incidence of relatively high percentages of: children under 5 years of age and elderly people 65 and over; chronically ill persons (especially those suffering cardiovascular or respiratory conditions); and socially isolated individuals. In 2050, there will be one million seniors 65 years and older in San Diego, roughly equal to nearly one-quarter of the region's total population. The aging population of San Diego will likely face more mortality events associated with an increase in temperature due to climate change. Following the events of 2006 when there was a prolonged period of extreme heat across the state of California, San Diego County developed an Excess Heat Preparedness and Response Plan.²³

3.6.2. Climate Change Indirect Effects on Air Pollution Ozone Air Pollution

²³ The State Department of Health Services adopted the following definitions of Excessive Heat: Heat Alert is triggered by one or more of the following: excessively hot weather accompanied by night temperatures of 75°F (24°C) or more for three days or less; National Weather Service Advisories of excessive heat for three days or less; and/or high heat accompanied by electrical blackouts or rotating blackouts. A Heat Emergency is triggered by one or more of the following: weather conditions with a heat index of over 105°F (41°C) with credible weather forecasts of excessively hot weather for more than three days. These weather conditions include high daytime temperatures accompanied by night temperatures of 75°F or more; National Weather Service Heat advisories or warnings for more than three days; abnormal human medical emergencies and mortality due to heat; and/or high heat accompanied by extended electrical blackouts.

San Diego County is currently out of compliance with the federal ozone standard, and the U.S. Environmental Protection Agency (EPA) has projected that this will still be the case in the year 2020. The effect of hot, sunny days on the generation of ozone air pollution can be seen by comparing ozone pollution data in San Diego with temperature. Ozone levels exceeded the state 8-hour standard in San Diego 8% of the time for days with temperatures between 85°F–89°F (29°C–32°C) (Environment California 2007). For days over 90 degrees, the state ozone standard was exceeded 16% of the time. An increase in hot, sunny days due to climate change causing increased population exposure to ground-level ozone has been projected for San Diego in the year 2050. In addition to potential increases in ozone levels, there will be increased stress from extreme heat days, coupled with an increase in the number of vulnerable people present within the San Diego region. These changes are likely to present a significant public health and economic impact.

Particulate Matter Air Pollution Levels

The modeled results show how under the two different IPCC scenarios, the PM_{2.5} concentrations move in different directions (see Figure 13). In the B1 scenario, emissions are reduced as outlined by CARB and, as a result, there is a decrease of PM_{2.5}. Whereas, in the A2 scenario, emissions are kept constant at their 2006 base year level and the PM_{2.5} concentration increase is influenced only from climatic effect. It is interesting to note that, using all three models, starting from year 2015, we predict significantly higher PM_{2.5} concentration for the A2 scenario and significantly lower PM_{2.5} concentration for the B1 scenario. Under the A2 scenario, starting from 2035, it appears that San Diego may have problems meeting the current Federal standard for PM_{2.5}. This trend is observed using the data from all the climate models.



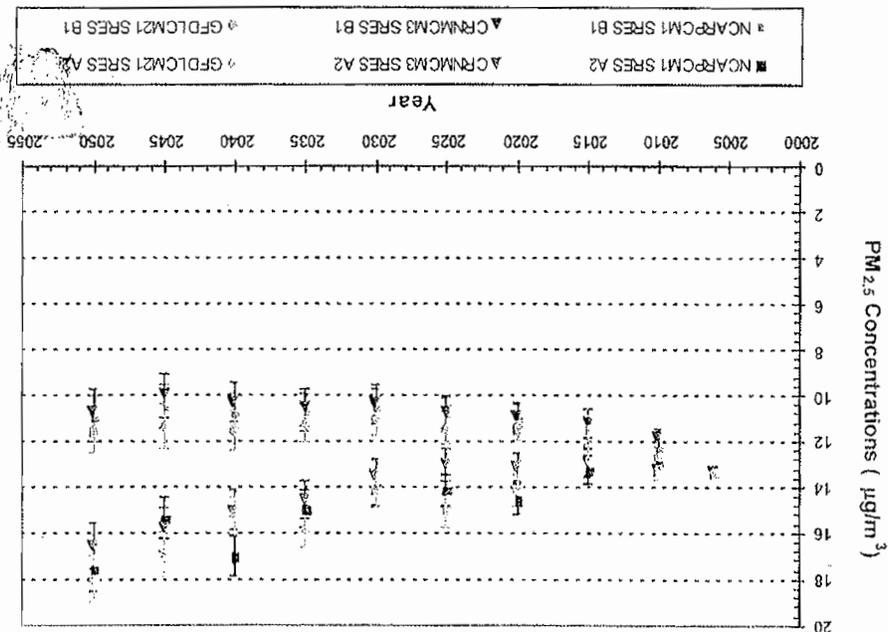
Table 1. Expected mortality change in 2015, 2035, and 2050 from base year 2004

Scenario	Cause of Mortality			Cardiopulmonary			Lung cancer			All cause		
	2015	2035	2050	2015	2035	2050	2015	2035	2050	2015	2035	2050
FCC SRES												
Mortality in 2004	NCARPCM1	CRNMCM3	GFDLCM21	NCARPCM1	CRNMCM3	GFDLCM21	NCARPCM1	CRNMCM3	GFDLCM21	NCARPCM1	CRNMCM3	GFDLCM21
SRES A2	9110	-0.06%	-0.24%	-0.30%	0.98%	0.72%	1.49%	2.53%	1.93%	2.83%	3.79%	1.89%
SRES A2	1187	0.08%	-0.32%	-0.40%	1.28%	0.96%	1.99%	3.39%	2.57%	3.79%	1.89%	1.89%
SRES A2	19104	-0.04%	-0.16%	-0.20%	0.64%	0.48%	1.00%	1.89%	1.20%	1.89%	1.89%	1.89%
SRES B1	9110	-1.08%	-1.26%	-1.06%	-1.55%	-1.67%	-1.26%	-1.38%	-1.56%	-1.09%	-1.09%	-1.09%
SRES B1	1187	-1.44%	-1.66%	-1.44%	-2.07%	-2.23%	-1.68%	-1.84%	-2.07%	-1.44%	-1.44%	-1.44%
SRES B1	19104	-0.72%	-0.84%	-0.72%	-1.04%	-1.12%	-0.84%	-0.92%	-1.04%	-0.72%	-0.72%	-0.72%

The projected impact on mortality rate under the different climate models and emissions scenarios (see Table 1) show that mortality decreases in the year 2015 for both scenarios. However, in 2035 there is a slight increase in mortality compared to 2006, and a significant increase by 2050 – as many as 45 additional deaths from lung cancer and 258 from cardiopulmonary causes for the A2 scenario. For the B2 scenario, there appears to be a decrease in mortality.

Health Effects Modeling

Figure 14. PM_{2.5} projections



3.6.3. Wildfire Impacts on Public Health

Wildfires can be a significant contributor to air pollution in both urban and rural areas, and have the potential to significantly impact public health through particulates and volatile organic compounds in smoke plumes. Wildfire smoke contains numerous primary and secondary pollutants, including particulates, polycyclic aromatic hydrocarbons, carbon monoxide, aldehydes, organic compounds, gases, and inorganic materials with toxicological hazard potentials (Künzli et al. 2006). Future land use and climate change will exacerbate the risk of wildfires as a result of the alteration of fire regimes in the county. Fires also create secondary effects on morbidity as the result of increased air particulates that can worsen lung disease and other respiratory conditions. People most at risk of experiencing adverse effects related to wildfires are children and individuals with existing cardiopulmonary disease, and that risk seems to increase with advancing age.

3.6.4. Climate Change Effects on Infectious Disease

Climate change in San Diego County could increase the risk of certain vector-borne diseases, while decreasing the risk of others. The occurrence of vector-borne disease is influenced by a variety of factors. Prevailing temperature influences the rate of development of larvae of some vectors, as well as the rate of development of the infectious agent in the vector. Humidity and rainfall patterns affect both the composition and abundance of arthropod vectors (mosquitoes, fleas, ticks, etc), as well as animal hosts (Lang 2004). Behavior patterns of hosts, such as indoor living, and vector preferences for particular hosts and periods of peak activity, also influence transmission opportunities.

The San Diego region will experience increased public health risks from mosquito-transmitted West Nile Virus (Dudley et al., in press) assuming more intense El Niño cycles (Anyamba et al. 2006) and rodent-transmitted hantavirus (Yates et al. 2002), and higher temperatures predicted for the region could facilitate the local establishment of tropical vector-borne diseases such as malaria and dengue fever, while reducing public health risks from the endemic mosquito-transmitted diseases Western Equine Encephalitis and St. Louis Encephalitis (Gubler et. al. 2001). Climate warming effects on the geographic and altitudinal ranges and population densities of rodent hosts and flea vectors will alter the distribution of high-risk areas for plague (*Yersinia pestis*) in the San Diego region (Lang 1996, 2004). Predicted future increased residential development and recreational activities within the unincorporated areas of San Diego County due to population growth, which will increase the potential for contact between humans and wildlife disease hosts and vectors, may result in higher public health risks from diseases transmitted by rodents and rabbits such as tularemia, plague, and hantavirus (Smith 1992).

Water-Borne Disease

Climate change is predicted to have direct and indirect effects on the hydrology and ecology of freshwater and estuarine systems in San Diego. Predicted changes in temperature, precipitation, surface radiation, humidity, winds, and sea level may lead to significant impacts on regional-scale hydrologic processes. Contaminant levels in almost 60% of shoreline waters from Point Conception, California to Punta Banda, Mexico currently exceed water quality standards for the

protection of human health during part of the year, and the rapid urbanization and land development occurring in San Diego and adjoining coastal areas of Southern California will continue to degrade coastal water quality given current trends unless aggressive measures to correct these problems are instituted. Coastal and inland wetland extent are sensitive to factors associated with climate change with possible impacts to human health, and projected surface temperature increases of 1.5°F to 4.5°F (0.8°C to 2.5°C) in 2050 in local lagoons and waterways as well as the near shore ocean could increase the risk of disease risks from exposure to harmful algal blooms (red tides), microbes (*Vibrio* spp., *Listeria monocytogenes*, *Clostridium botulinum*, *Aeromonas hydrophila*), and other waterborne agents (Feldhusen 2000; Tamplin 2001). In addition, changes in the ethnic composition of the population could result in increased levels of exposure to these water-borne diseases and contaminants from changes in the rates and seasonality of fish and shellfish harvesting for personal consumption.

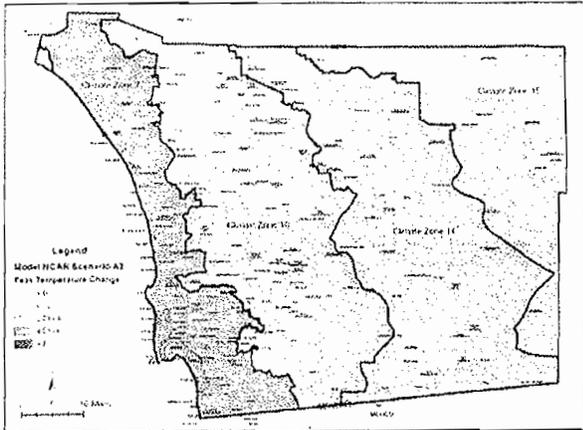
3.7. Electricity: Powering Growth in a Demanding Future

3.7.1. Peak Temperature and Cooling Degree Day (CDD) Trends

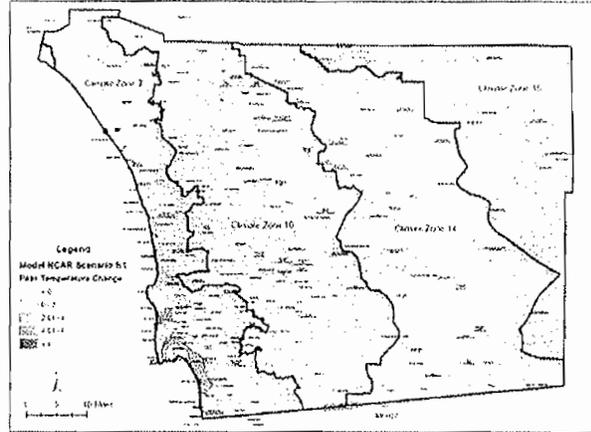
CDDs are the amount of time during the year above a reference temperature of 65°F (18°C). This measure is considered more indicative of annual temperature trends than daily peaks. CDD trends between the models do not show the same relationships as the peak temperature trends. To some extent, these trends are all increasing, although there is notable variation among them (see Figures 14 and 15).

A2 Scenarios

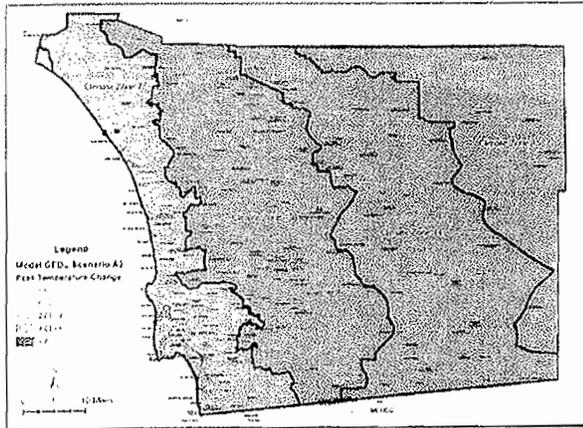
B1 Scenarios



Change in Peak Temperature by 2050 Model NCAR Scenario A2

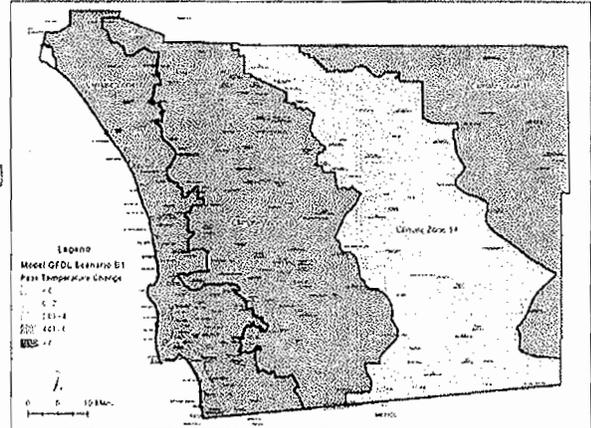


Change in Peak Temperature by 2050 Model NCAR Scenario B1

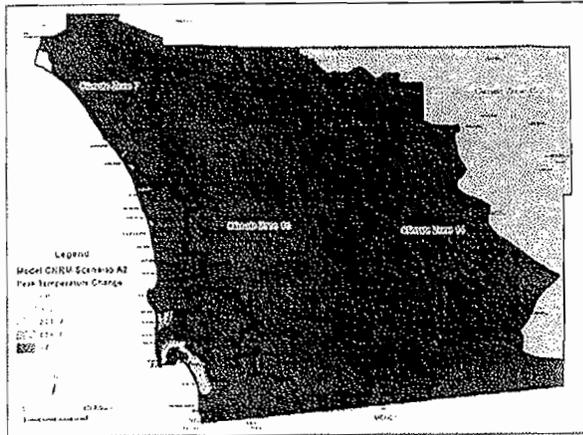


Change in Peak Temperature by 2050 Model GFDL Scenario A2

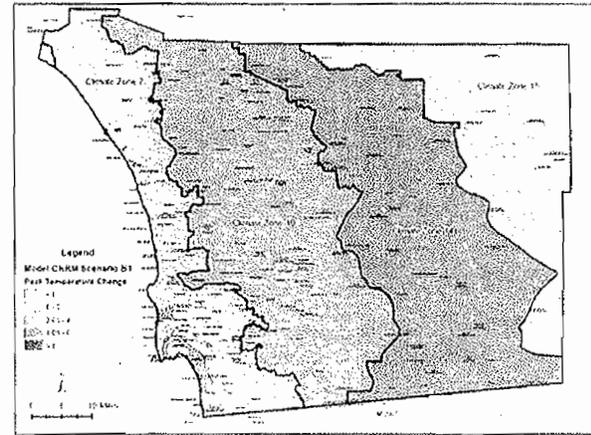
F)



Change in Peak Temperature by 2050 Model GFDL Scenario B1



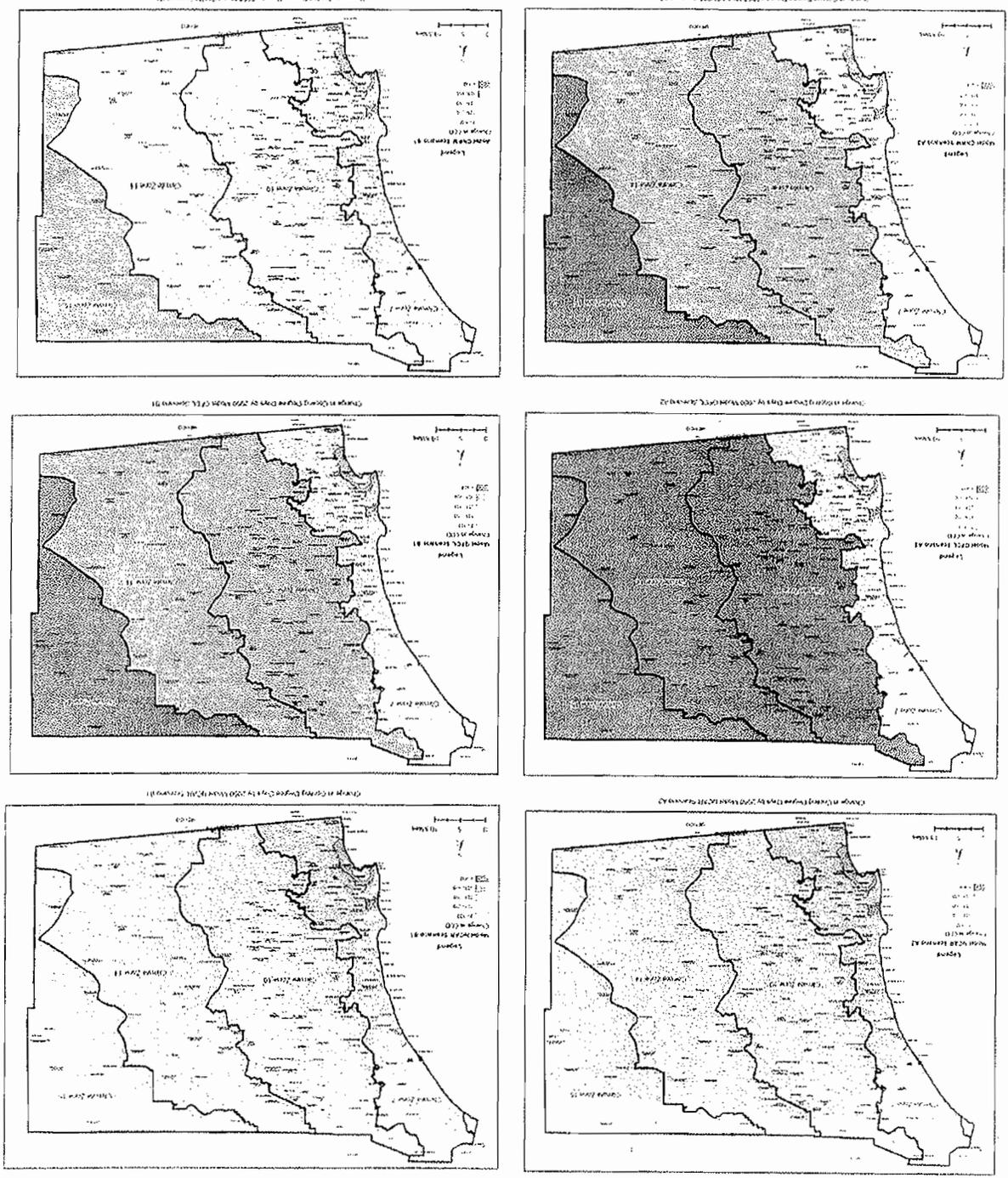
Change in Peak Temperature by 2050 Model CNRM Scenario A2



Change in Peak Temperature by 2050 Model CNRM Scenario B1

Figure 15. Peak temperature change (°F) by 2050 for the three climate models

Figure 16. Cooling degree day changes by 2050 (°F)



B1 Scenarios

A2 Scenarios

Peak Demand Trends for Electricity

The forecast shows a dramatic increase of 60%–75% in peak electricity demand by 2050 (see Figure 16)—an increase of more than 2,500 megawatts (MW) from present levels. The differences between the models account for roughly 7% of the total, or approximately 400 MW. The “base case” on the graph shows what peak demand would be if temperatures did not increase (i.e., demand based on population growth alone).

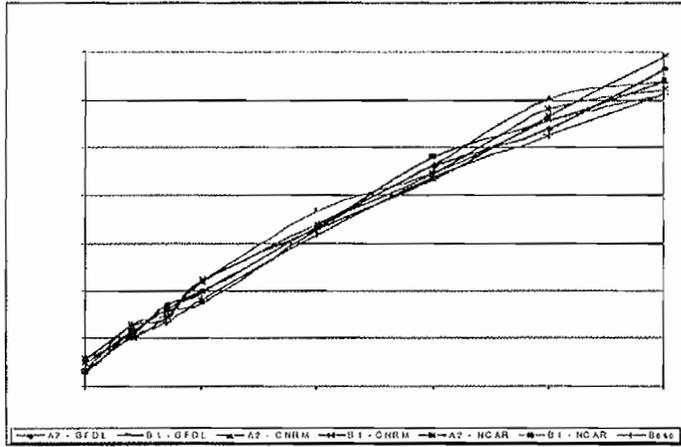


Figure 17. Peak electricity demand forecast

Annual Consumption Trends for Electricity

There is a nominal difference in the forecasts based on the model and scenario. This means that assumptions about electricity consumption in the forecasting model are primarily population-dependent and only marginally temperature-dependent for estimating annual electric consumption. Overall annual electricity consumption is expected to increase of 60%–62% by 2050 (see Figure 17) compared to current demand. Rising temperatures account for approximately 2% of the increase in consumption.

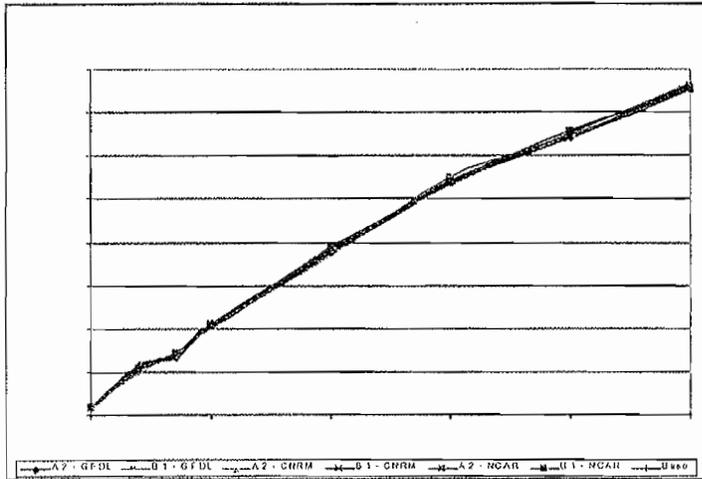


Figure 18. Electricity consumption forecast

Transmission line losses may increase as a result of climate change, although there is a need for further research in this area. One study quantified temperature impacts on electricity transmission line losses, noting that "electric transmission lines have greater resistance in warmer temperatures, and thus climate change will result in increased line losses (Feenstra et al. 1998). A separate concern is line sag. As demand increases during hot weather, transmission line conductor temperatures increase, which causes the lines to stretch and sag. If a line sags into an object such as a tree, the current can be discharged to the ground, causing a short-circuit

Transmission Line Losses

The availability of wind power may also be affected by climate change, although projected climate impacts on wind are highly uncertain at this time. A 2005 study estimated that there could potentially be as much as 1,500 MW of wind power generated in or near eastern San Diego County (San Diego Regional Renewable Energy Group 2005). Further research in this area is needed because changes in wind resources are not currently modeled in the global climate scenarios. The U.S. Climate Science Program predicted that overall wind-power generation would decrease in the mountain areas of the West, but could *increase* in California (U.S. Climate Change Science Program 2007). New research could provide more specificity with regard to both the location of impacts on wind resources and the timing of those effects, so that utilities may consider wind's impact on generation in the context of both installed capacity and imported energy.

Wind Generation

The efficiency of thermal power generators, including fossil fuel as well as nuclear-fired units, goes down when air temperature goes up. Higher outdoor air temperatures reduce the efficiency and capacity rating of natural gas and oil units by reducing the ratio of high and low temperatures in the power cycle.

Thermal Generator Efficiency

Summer time, when demand is highest, is also the time when operating efficiency is lower and line losses increase—both due to temperature effects. This will result in further need for utilities to purchase or build additional power supplies. Further, transmission line congestion is worst during times of peak demand, which will exacerbate delivery problems unless utility investments keep pace with these effects.

3.7.2. Decreased Summer Time Generation Capacity

Peak demand will be even more challenging to deal with under future climate scenarios and increased outages, the electric utility will need to make additional investments and customers will need to modify consumption patterns in order to reduce peak summer electricity demand. In general terms, the analysis of the climate models and extreme temperature events conducted in this study shows that there will be a three-month expansion of higher-temperature events as well as an increased frequency of events. In other words, the period when high-temperature days are most frequent, currently between June and September, will expand to May through November. Early November will "feel" like September currently does.

Extreme Temperature Events and Impact on System Reliability

that could initiate a major power outage. However, it is conductor temperature (a function of load) that is the main cause of sagging power lines. Currently, there are insufficient data to conclude that ambient temperature increases of a few degrees would have a significant impact on line sag.

3.7.3. Trends in Energy and Regional Water Use

The San Diego County Water Authority (Water Authority) is exploring seawater desalination as a means of diversifying its supply of water resources. As an energy-intensive process, the development of desalination facilities will bring with it an increase in regional energy demand. Reverse osmosis (RO) systems do not require thermal energy to heat feedwater. Therefore, RO is generally more energy efficient than other desalination technologies. Since it does not require fuel burning permits for a thermal conversion process, RO technology is the type most likely to be employed throughout the San Diego region. Assuming an energy intensity of 4,000 kilowatt-hours per acre-foot (kWh/af) of water produced (California Department of Water Resources 2003), the rise in energy demand attributable to meeting the Water Authority's desalination goals are summarized in Table 2. Comparing this table to regional electricity consumption in Figure 16, it can be seen that consumption of desalinated water in 2030 is likely to boost overall electricity use in the region by 1%–1.5%.

Table 2. Increases in annual power consumption attributable to saltwater desalination throughout the San Diego region

Year	Scenario	Desalination capacity added to region (acre-feet/year)	Resulting increase in annual power consumption (MWh)
2020	<i>low case</i>	40,000	160,000
	<i>high case</i>	56,000	224,000
2030	<i>low case</i>	56,000	224,000
	<i>high case</i>	89,600	358,400

4.0 Conclusions and Recommendations

A key message of this study is that the San Diego region is uniquely threatened by climate change. The San Diego region, by 2050, will have to concurrently deal with the major challenges of protection against sea level rise, increased risk of large wildfires, increasingly uncertain water supplies from the Sacramento Delta and Colorado River imports, increased energy demands, and public health issues associated with heat waves and an increase in some infectious diseases like West Nile Virus. Our ecosystems are also already a unique hot-spot for endangered and threatened species and climate change will place even greater adaptation stresses on these species.

An overarching recommendation is that public decision makers and agencies keep moving in a common direction on understanding the climate forecasts for the region, which in turn should facilitate better joint planning. For example, fire protection agencies, utility planners, and public health planners should have a common understanding of temperature increase expected for the

²⁴ The SRES A2 (medium high emissions) and B1 (moderately low emissions) scenarios.

The combination of higher sea level, waves, tides, El Niño effects, and weather conditions poses a serious threat to several identified vulnerable areas of the San Diego region. These areas are home to critical habitat, valuable real estate, recreational facilities, and public infrastructure. Results of three simulation scenarios indicate sea level increases of 12–18 inches by 2050. Future research will be needed to better understand the impact of changes in sea level in other areas of strategic (San Diego Naval Air Station North Island) and economic (San Diego Airport and the

4.2. Sea Level Scenarios and Coastal Impacts in 2050

It is very likely that the warming in the San Diego region will equal or exceed the warming that we have seen over the last 100 years. Summers will include more extreme hot days and heat waves will happen earlier, and also occur later during the warm season. All of the climate model simulations exhibit warming across San Diego County—ranging from about 1.5°F to 4.5°F (0.8°C to 2.5°C). Models suggest that the warming impacts will be greater in summer months than in winter, with surface air temperatures in summers warming from 0.7°F to more than 2°F (0.4°C to more than 1.1°C) over that found in winter, and this warming will be more pronounced inland than along the coast. Precipitation in the region will retain its Mediterranean pattern, with winters receiving the bulk of the year's rainfall, and summers being dry. Models lack consensus on whether it will be drier or wetter overall, but because of warming and effectively earlier summer conditions, there is evidence that the area's landscape will fall into hydrological deficit (drought) more often than it has historically.

There is an important aspect of the 2050 time horizon that should be kept in mind. This study is confined to the period between now and the year 2050, but the effects of greenhouse gas (GHG) accumulations on climate, while somewhat slow to develop, are very long-lasting in impact (IPCC 2007; Hansen 2005; Meehl et al. 2005). Also, most GHG emission scenarios, including the scenarios employed here, indicate that substantial man-made GHG emissions will continue beyond 2050. Because of this, the levels of warming, the amount of sea level rise, and other impacts will probably not reach their peaks by 2050. The results of different mitigation strategies, as expressed by the two GHG emission scenarios,²⁴ do not become very clear by 2050—they are much more distinctly evident in the following decades (IPCC 2007; Hayhoe et al. 2004; Cayan et al. 2008b).

4.1. Climate Change in the San Diego Area

region. Likewise, water agencies and fire prevention agencies should have a uniform understanding about the likelihood of droughts and precipitation patterns. Land use planning agencies will have to deal with the combined challenges of sea level rise in coastal areas, increasing fragmentation of ecosystems, as well as mitigation measures to address local emissions that could require increasing future population centers around transportation corridors. Although this study has focused on adaptation needs, it is important to also recognize the importance of local mitigation measures as they can create positive health effects as well as provide a local economic stimulus.

Port of San Diego) importance. This analysis should provide the basis for further analysis of coastline vulnerabilities and the development of risk management strategies involving the public and private sectors.

Benefits to the San Diego Region and California

San Diego County has roughly 70 miles of coastline with a wide range of current economic and residential uses that will be threatened by sea level rise. The potential impacts to these areas if mitigation measures are not adopted are not estimated here, but they would undoubtedly be extremely high. To develop a county-wide mitigation cost estimate, it is essential to know details on the degree of impact expected from the sea and the amount of development already in the area. At the lower end, building simple sea walls in moderately impacted residential areas will run approximately \$250 to \$350 per foot or \$1.3 million to \$1.8 million per mile. A mid range estimate of \$935 per foot (Smith and Mendelsohn 2006) (\$5 million per mile) would project out to \$350 million for the 70 miles of coastal protection. At the upper end, for example, work to replace the 1.9 mile Elliott Bay seawall in the heavily developed port area of Seattle will be \$400 million, according to the State of Washington.²⁵

There is a need to fully consider the long term implications of sea level rise in San Diego Bay, Mission Bay, and other heavily developed coastal areas to determine the extent that the higher end cost estimates should be used. In addition to seawall costs, much higher costs could be involved to build new breakwaters, seawalls for port areas, wharf improvements, embankment improvements, and additional storm gates to control flows after current gates are inundated. A study that considered protecting Japan's coastal resources against sea level rise (Kojima 2000) found that only 11% of overall costs involved sea walls to protect residential and commercial areas, with the other 89% including the previously mentioned improvements. Considerable research will be needed to better understand the costs of preparation for the entire region, as well as the overall savings in future storm and flooding damage that will be realized.

4.3. Climate Impacts on Water in 2050

San Diego's water supply plans through 2030 are likely to be severely challenged by climate change, even as authorities balance supplies to address growing demand. The path to reliable water supply in 2050 is even more challenging. The estimated demand in 2050 is 915,000 acre-feet/yr, an increase of 37% over the 2001–2005 period, and around 80% of the water supply is expected to be imported. The remaining demand will have to be met by local sources through the increase in conservation efforts, water recycling and desalination plants. The City of San Diego and the County Water Authority have already taken notable water conservation efforts. For example, citywide water usage currently is at the same level it was 16 years ago, despite a significant increase in population. Since 1990 the Water Authority and its member agencies have achieved savings of 430,000 acre-feet of water through the implementation of conservation programs. However, city and county authorities will need to exercise even more leadership on water conservation and supply issues as climate change and intensified drought implications will need to be considered in all managerial decisions.

²⁵ www.wsdot.wa.gov/Projects/Viaduct/Questions.htm

²⁵ ..

The cost of water in San Diego County will be adversely affected both by increases in the costs of water imports and increases in demand, anticipated as a result of climate change. Currently,

Benefits to the San Diego Region and California

The Colorado River is forecasted to deliver an increasing share of the region's water by 2030 and 2050, mainly due to the Water Authority's 1998 agreement with Imperial Irrigation District and due to the 2003 leakage reduction projects conducted at the All American and Coachella canals. Existing shortage-sharing agreements cover how water will be distributed in the event of reductions in flow of up to 8%, but these may need to be updated in the near future to account for even greater reductions in flow. Water deliveries from the Delta could also be limited by 2050, placing an even greater emphasis on local conservation measures. In short, regular assessments of evolving climate knowledge incorporated into periodic evaluations of infrastructure and planning will be an important tool in moving government policy and public awareness. The critical factor will be forward-thinking public policy and leadership to change individual and collective behavior.

Other important steps being taken by the Water Authority include the design of a model Drought Response Ordinance for the various (22) San Diego local water districts to consider for adoption that would help achieve the above reduction targets during droughts. The local districts are now in various stages of development of their conservation/drought response ordinances. Not yet included in agency plans and outlooks for coming decades are very likely reductions in surface-water runoff and ground-water recharge to local water supplies in San Diego under increasingly warm and dry climates. Under climate change conditions, just preserving the status quo on San Diego's rivers, wetlands, and riparian zones may require providing water to meet environmental goals, flows that have not figured into the very close fitting balances of supplies and demands that appear in the water agencies' projections. Additional recommended adaptation tasks include updating landscaping ordinances and incentives, supporting infrastructure updates and updating development codes, promoting water reuse together with increased use of desalination where feasible, and ensuring that "Must Serve" Letters use water projections that are sensitive to climate changes that can help meet the challenge.

It is imperative to make an evaluation of the best conservation techniques and to raise awareness among the public now. Due to critically dry conditions during 2007 and 2008, the government of California has declared a statewide drought. The San Diego Water Authority and its agencies have developed a drought management plan that targets 10% to 40% reductions in customer consumption, depending on the level of drought intensity. One of the adopted initiatives under this program is the "20 Gallon Challenge," which calls for a variety of end user voluntary conservation steps. This challenge targets 10% reductions in consumption (roughly 20 gallons per person) in the current drought. Current evidence suggests that a much smaller reduction is being achieved (3% as per San Diego City Council discussions on July 28, 2008) despite public advertising and awareness campaigns. Successfully achieving the higher reduction figures (40% or more) will rely on mandatory control measures, which will become increasingly necessary if voluntary measures have limited effectiveness.

the cost of supplying additional water to San Diego—which can be inferred from the cost of new desalination and reclamation projects—is between \$600–\$1800/acre-foot, depending on the water source. This cost may rise significantly by 2050 as less expensive ways to increase water supply are exhausted. Continued growth in Los Angeles, Arizona, Las Vegas, and the Central Valley is likely to increase competition for the same imported water supplies as San Diego, with the potential to drive up prices as purchase agreements are renegotiated in the future. Aggressive actions to plan for future water supplies as they vary with climate change and to curb demand through conservation measures will have significant economic benefits as well as overall improvements in the reliability of water deliveries to the public.

4.4. Wildfires in 2050

San Diego County already has one of the worst wildfire conditions in the country. The potential for interactions between climate change and changing fire regimes will exacerbate these conditions, specially as drought periods increase in the coming decades. San Diego officials are engaging in several activities to build upon lessons learned after the 2003 fires such as a community protection planning, restoration planning, regional evacuation planning, increased training of county personnel, purchasing of additional fire fighting equipment, implementation of public education programs and campaigns, building codes changes and implementation of brush and vegetation management plans. While vegetation management programs may offer help at the urban-wildlife interface, an overall strategy to reduce fire risk in scrub and chaparral ecosystems is not in place. More public discussion of issues such as newer building codes, prohibiting development in fire-prone areas, changes in landscaping and irrigation, and community fire planning are needed to develop more effective response strategies, which will be a key part of an overall climate change adaptation process.

One potential strategy to address the fighting of large-scale wildfires is to coordinate a centrally based regional firefighting unit focused on regional fire risk. Given that climate change could increase the number of large-scale wildfires, the large fixed cost of setting up such a regional wildfire fighting agency could be spread over events and be more cost effective than the status quo. The cost of the 2007 wildfires in San Diego was estimated at nearly \$2 billion for losses in residential and commercial properties (Nash, in press). In addition to the direct costs, many private firms and public agencies are forced to shut down during a large-scale wildfire event. A complete three-day shutdown costs roughly \$1.5 billion.²⁶ Therefore, one extra large-scale wildfire due to climate change can have a major impact on the economy due to productivity losses.

4.5. Ecosystems in 2050

Climate change has the potential to substantially alter species composition and abundance within terrestrial and aquatic ecosystems within the San Diego. Some species will likely disappear as a result of migratory shifts in distribution while other species' ranges may expand

²⁶ There was increased revenue in the hotel and restaurant industries during the 2007 wildfires, which are not accounted for in this figure.

to include the county. Even without climate change effects, native plants and animals may be increasingly constrained from projected population growth and development. County authorities have taken important steps to protect San Diego's ecosystem, one good example is the San Diego Multiple Species Conservation Program,²⁷ which was implemented 10 years ago. The plan is designed to preserve native vegetation and to meet the habitat needs of many species by acquiring conservation lands and identifying areas for future development. San Diego has over 200 animal and plant species that have been listed as endangered, rare or considered sensitive. Around half of these species occur within the MSCP study areas. The MSCP program works across political boundaries and it combines efforts from landowners, local governments, and other stakeholders.

Distinguishing ecosystem changes associated with climate change from those induced by human factors may be difficult if the separate forces produce similar effects. However, distinction of causes for observed changes in species and population conditions will be critical for appropriate assessment of status and developing effective strategies for resource management. Science-based ecosystem management based on a climate-informed approach offer potential solutions. Allocating enough sufficient resources to research and monitoring will be challenging but very important to better understand (a) existing resources and baseline conditions, (b) rates and local consequences of climate change, (c) possible avenues for mitigation, and (d) ongoing refinement of regional watershed, multiple species conservation program, and shoreline preservation plans and strategies.

There also is a need for further integration of climate change projections with land use planning. City and county agencies that consider land use planning decisions will need to consider the settlement of *Center for Biological Diversity v. County of San Bernardino*, which challenged an environmental impact report prepared for a general plan update for the county, and was settled with substantial commitments from the county to develop a target for reduction of greenhouse gas emissions attributable to the county's discretionary land use decisions. Maintaining permeability in the landscape for species to move and adapt to climate change (by creating a connected network of conservation lands) would help alleviate projected population growth development constraints on the ability of natural populations to adjust distributions in response to climate change effects.

4.6. Public Health in 2050

There are many potential public health issues that are likely to affect San Diego in 2050, both directly and indirectly. Projections of a growing and aging population with changing ethnic profiles suggest a larger number of people will be vulnerable to environmental health risks, and the projections for climate change indicate more stressful conditions facing vulnerable populations. Specific impacts include: (1) increased heat waves, creating a significant risk of adverse health effects and heat-related mortality; (2) increased exposure to air pollution resulting in adverse health effects, including exacerbation of asthma and other respiratory diseases, cardiac effects, and mortality; (3) increasing incidence of wildfire, which will

²⁷ www.sandiego.gov/planning/mscp/index.shtml

contribute to direct injuries and mortality as well as indirect health effects of air pollution; and (4) increases in the levels of exposure to vector-borne or infectious diseases—potential increases in West Nile Virus and hantavirus will require particular attention and increased medical resources to address. All of the above impacts have a magnified effect on an aging population base and will therefore require increased efforts and resources to effectively manage.

4.6.1. Benefits to the San Diego Region and California

Californians experience the worst air quality in the nation, resulting in yearly economic costs of approximately \$71 billion (\$36–\$136 billion), with about \$2.2 billion (\$1.5–\$2.8 billion) associated with hospitalizations and medical treatment of illnesses related to air pollution exposure.²⁸ Although the proportion of this cost for the San Diego region is not documented, it is undoubtedly significant. Deteriorating air quality from increases in ambient ozone levels as well as possible increases of PM levels in some scenarios will push these costs even higher. Local and regional emission mitigation activities will be essential in reducing these costs and improving regional public health.

It is essential that the public health and emergency response infrastructure be robust enough to mitigate risks due to extreme heat events and respond appropriately. The State of California Office of Emergency Services has recently (April 2008) updated their State Contingency Plan for Excessive Heat Emergencies. Local and regional entities should review the guidance and checklists for local governments in this plan and determine what measures should be adopted in the San Diego region.

4.7. Electricity: Powering Growth in a Demanding Future

Demand for electricity in San Diego County is projected to increase significantly by 2050. That increase will be largely driven by population increases, augmented by increased average and peak temperatures, especially in inland areas where population growth rates are highest. The main climate impact on electricity demand and associated supply issues will be the increased need for summer cooling. Overall, peak demand for electricity and annual electricity consumption will rise dramatically in the San Diego region by 2050. Annual electricity consumption is expected to increase more than 60%. That will push consumption from the current level of approximately 20,000 gigawatt-hours (GWh) to more than 32,000 GWh in 2050. While population growth is an important contributor to increased demand, warmer temperatures are expected to push total energy consumption up to two percentage points above

²⁸ Recent estimates for several of the most serious public health impacts associated with current concentrations of ozone and PM (CARB, 2002, 2005b,c) suggest that annually the following number of cases occur in California due to non-attainment of air quality standards:

8,800 (3,000–15,000 probable range) premature deaths,

9,500 (4,600–14,000 probable range) hospitalizations and emergency room visits,

4.7 million (1.2–8.6 million 95% confidence interval) school absences,

2.8 million (2.4–3.2 million probable range) work loss days.

the population-driven change by 2050. Similarly, peak electric demand is expected to increase by over 70%, from approximately 3,700 MW to as much as 6,400 MW in 2050. Increased average and peak temperatures (i.e., climate-driven changes) are projected to account for approximately 7% of the total increase in peak demand.

To meet San Diego's future power demand, SDG&E has developed a 10-year energy plan that includes the implementation of energy efficiency programs, conservation programs, solar PV roof programs, smart home and smart grid programs, the construction of new power plants including in-area renewables, and new transmission lines such as the Sunrise Powerlink. Over the longer term, we can expect that the electric utility will need to make additional investments, and customers will need to further modify consumption patterns to reduce peak summer electricity demand, avoid a reduction in reliability, and avoid system outages. The utility may include advanced approaches such as the implementation of more advanced smart grid technologies, additional in-area utility-scale renewable energy power plants, market-based pricing mechanisms, strategic deployment of distributed generation, and automated demand response technologies. With a combination of incentives, tax credits, and electricity price signals, consumers will be more proactive in the adoption of energy efficiency technologies, installing on-site generation equipment, installing load-shifting technologies, and implementing improved building standards along the lines of Leadership in Energy and Environmental Design (LEED) or Energy Star certifications.

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6.0 Glossary

APCD	Air Pollution Control District
ARIMA	Auto-Regressive Integrated Moving Average model
CALFED	California Bay-Delta Authority
CARB	California Air Resources Board
CCB	Center for Conservation Biology
CCD	Cooling Degree Day
CCSM3	NCAR Community Climate System Model (CCSM), version 3
CNRM	Centre National de Recherches Météorologiques
CDIP	Coastal Data Information Program
CEC	California Energy Commission
CPP	Critical Peak Pricing
EIR	Environmental Impact Report
ENSO	El Niño/Southern Oscillation
EPA	Environmental Protection Agency
ESI	Environment and Sustainability Initiative
Focus 2050 Study Foundation	The San Diego Foundation's Regional Focus 2050 Study The San Diego Foundation
GCM	Global Climate Model
GFDL	Geophysical Fluid Dynamics Laboratory

Greenhouse Gas	GHG
Goddard Institute for Space Studies	GISS
Global carbon emissions	GIC
Gigawatt hours	GWh
Intergovernmental Panel on Climate Change	IPCC
Leadership in Energy and Environmental Design	LEED
Light Detection and Ranging remote sensing system	LIDAR
Municipal and Industrial	M&I
Megawatt	MW
Metropolitan Water District	MWD
Megawatt hour	MWh
National Ambient Air Quality Standards	NAAQs
National Oceanic and Atmospheric Administration	NOAA
Nitrogen oxides	NOx
Parallel Climate Model	PCM
Public Interest Energy Research	PIER
Particulate matter	PM
Fine particulate matter	PM _{2.5}
Research, development, and demonstration	RD&D
Regional Growth Forecast	RGF
Reverse Osmosis	RO
Reactive organic carbon	ROG
San Diego Association of Governments	SANDAG
San Diego Gas and Electric Company	SDG&E
Scipps Institution of Oceanography	SIO
Sulfur oxide	SOx
A2 scenario from Special Report on Emissions Scenarios (IPCC)	SRES A2
B1 scenario from Special Report on Emissions Scenarios (IPCC)	SRES B1
Still water level	SWL
Variable Infiltration Capacity	VIC
San Diego County Water Authority	Water Authority

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

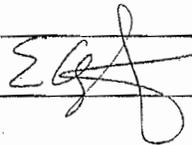
*NAME: Eric Ortega

*CITY OF RESIDENCE: Pala

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: I live about 1500 yards east of the proposed site, My family and I enjoy a daily afternoon breeze that comes from the Ocean. IF this site is established and there is a toxic fire on the dump the pleasant breeze would blow the fumes right at us. I have a nice home don't put us next to 3 mile Island.



COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: Russell Pitts

*CITY OF RESIDENCE: Oceanside, moving to Fallbrook

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: My wife and I just became aware of this proposed landfill project yesterday as I was reading disclosure forms on the house we just purchased. I was completely horrified to learn of this potentially looming environmental monstrosity - I cannot imagine how the public was tricked into voting for this. We as citizens and our elected government officials must stand up and prevent this from happening. We must protect the quality of life that makes San Diego one of the truly great cities in the United States. This will be a light on our community and our environment!

Walter E. Rusinek
Direct Dial: (619) 525-3812
E-mail: walter.rusinek@procopio.com

February 23, 2011

Mr. Jack Miller
County of San Diego Department of
Environmental Health
Local Enforcement Agency
5500 Overland Drive, Suite 110
San Diego, CA 92123

Re: Comments on the Solid Waste Facility Permit Application for the Proposed
Gregory Canyon Landfill

Dear Mr. Miller:

On behalf of the Pala Band of Mission Indians ("Pala Band"); we respectfully submit the following comments to the County of San Diego Department of Environmental Health, acting as Local Enforcement Agency ("LEA"), on the solid waste facility permit application submitted by Gregory Canyon, Ltd. ("GCL") dated January 13, 2011, for the proposed Gregory Canyon landfill ("SWFPA"). As was the case in July of 2010, the LEA's determination on February 1, 2011, that the SWFPA was complete and correct was wrong and constituted a failure by the LEA to "act as required by law or regulation" pursuant to Public Resources Code section 44307.

These comments discuss a number of reasons why the SWFPA failed to meet regulatory standards, any of which is sufficient to show that the SWFPA was not complete. In addition, the comments below show why the LEA has violated the California Environmental Quality Act ("CEQA"), rendering any decision to issue the permit improper.

At the outset we note that the ability of the public to comment on the SWFPA application has been seriously undermined by the LEA's failure to make these documents available for review. Although the completeness determination was made on February 1, 2011, and this meeting was scheduled for February 23, 2011, the more than 500 pages of the technical and legal documents that make up the permit application were not provided for public review until late on February 14, 2011, only six working days ago. This simply did not provide the public with sufficient opportunity to properly review the SWFPA.

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I. The LEA's Past Actions on the Solid Waste Facility Permit

In 2004, the LEA issued a solid waste facility permit for the proposed landfill as well as findings and a statement of overriding considerations (SOC) under CEQA. The issuance of the permit was based on a final environmental impact report ("FEIR") certified in February of 2003. A lawsuit challenging the LEA's action was resolved in January of 2006 when the Superior Court issued a writ of mandate directing the LEA to prepare an adequate EIR and to rescind the permit, the findings and the SOC.

Although the LEA took those actions, it continued to treat the permit as if it was still in existence, requiring yet another lawsuit. In June of 2010, the Superior Court confirmed that the permit was invalid, and on June 24, 2010, GCL submitted a new permit application.

Although the June 2010 application was inadequate on its face, the LEA concluded it was complete and correct on July 23, 2010. Based on comments provided by the Pala Band dated July 29, 2010, the LEA, at the request of GCL, rescinded that "completeness" determination on August 5, 2011. On that same day, GCL filed a new permit application designated as incomplete. The allegedly complete application at issue here was submitted on January 26, 2011. The comments made on that previous application are incorporated into these comments as well.

II. Legal Standards for a Complete and Correct SWFPA

The CalRecycle rules specify what information must be included in a SWFPA for an application to be deemed "complete and correct." (27 C.C.R. § 21570(e).) The rules list the specific, but *minimum*, information that must be contained in the SWFPA. In relevant part, and in the order they are discussed below, the minimum information required to be submitted for a SWFPA to be complete is:

1. An "Application for Solid Waste Facility Permit/Waste Discharge Requirements" (the "Joint Application Form") (27 C.C.R. § 21570(f)(1));
2. Current documentation of acceptable funding levels for the required closure, postclosure maintenance and corrective action Financial Assurance Mechanisms (*id.* at (f)(8));
3. Current documentation of compliance with operating liability requirements (*id.* at (f)(9));
4. A landfill capacity aerial survey in an electronic format (*id.* at (f)(10));

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5. A determination by the LEA, the Regional Water Quality Control Board ("RWQCB") and CalRecycle that the preliminary closure plan for the facility is complete (*id.* at (f)(6)); and
6. A "complete and correct" Report of Disposal Site Information in the form of a Joint Technical Document ("JTD") (*id.* at (f)(2)).

The CalRecycle rules define the term "complete" as meaning that "all requirements placed upon the operation of the solid waste facility by statute, regulation, and other agencies with jurisdiction have been addressed in the application package." (27 C.C.R. § 21563(d)(1).) The rules define the term "correct" as requiring that "all information provided by the applicant regarding the solid waste facility must be accurate, exact, and must fully describe the parameters of the solid waste facility." (27 C.C.R. § 21563(d)(2).)

The rules also require that information in a SWFPA must be "supplied in adequate detail to permit thorough evaluation of the environmental effects of the facility and to permit estimation of the likelihood that the facility will be able to conform to the standards over the useful economic life of the facility." (27 C.C.R. §§ 21570(d).) Finally, the rules are clear that a complete and correct application "shall include, but not necessarily be limited to" the information listed in the rule. (*Id.* § 21570(f).)

These definitions demand that a "complete and correct" SWFPA contain a rigorous level of detail that this SWFPA sorely lacks. Because the rules state that the minimum required information may not be sufficient, a determination as to whether a SWFPA is "complete and correct" must be based on site-specific factors. In this case, significant detail is necessary because, among other things, the landfill is proposed to be located

- (1) in a steep canyon that flows into the San Luis Rey River,
- (2) above a fractured bedrock "aquifer" system that the San Diego Regional Water Quality Control Board admits makes discharges of pollutants "difficult to detect, delineate, and remediate"
- (3) above a fractured bedrock "aquifer" that is interconnected with down-gradient alluvial aquifers that provide drinking water for individuals and municipalities, including the City of Oceanside, and
- (4) in an area where numerous endangered or otherwise protected species are present.

Because the Gregory Canyon site is a uniquely complex project site, the lack of detail in the SWFPA and the JTD is another reason why the SWFPA is not complete and correct.

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III. The SWFPA Was Not Complete and Correct

A. The Joint Application Form

The SWFPA was submitted with a cover letter dated June 24, 2010, which identifies the various portions of the SWFPA. The first item listed in that letter is the Joint Application Form, which is attached with the cover letter as Exhibit A to this Statement of Issues. A review of the Joint Application Form alone shows that the information in the SWFPA was not complete and correct.

1. Type of Permitted Wastes (Part 2.E)

The original solid waste facility permit application stated that the types of waste to be received would be construction/demolition debris, industrial and mixed municipal waste, and tires. The current application has added agricultural waste, ash, compostable materials (described as “green material”), dead animals, and inert waste. None of these wastes were discussed in the FEIR and there was no analysis of the impacts of accepting these new wastes. In addition, the Joint Technical Document (“JTD”) states that abandoned vehicles, vehicle parts and home and industrial appliances would be received, but this information is not included on this page of the application in the “Other” category and the receipt of those waste was not discussed in the FEIR.

2. Daily Disposal (Part 3.B.1.a)

The application lists that zero “other” wastes will be accepted, but the application now indicates that processed green material (“PGM”) would be accepted. The amount needs to be identified in the application.

3. Landfill Capacity Survey Results (Part 3.B.3.g)

CalRecycle rules require that an application for a disposal site include a ground or aerial survey of the site submitted in the form of CADD drawings or a vector graphics data file. 27 C.C.R. § 21570(f)(10). But the Joint Application Form for the SWFPA merely refers to a 1991 aerial survey. That is not sufficient under the rules.

4. Attachment D Improperly Describes the Status of Current Permits

First, the application states that the Regional Water Quality Control Board determined that the JTD was complete in March of 2005, but the JTD has been revised numerous times since then, including in January of 2011. The attachment also fails to note that the Section 7 of 106 consultation was cancelled on September 13, 2010, and that consultation under Section 106 is also required with Native American Tribes.

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As for the alleged compliance with fire protection, we note that the site is in an extremely hazardous fire area as designated by CalFire. Yet the site has no water source except for pumped or trucked water and its storage capacity on the site is limited. The attached letter provides no assurance that any fire district has agreed to provide service or that any fire district has evaluated the proposed facility for compliance with relevant fire codes.

B. The Permit Application Erroneously Claims That There Has Been Compliance with CEQA (Attachment 2).

The permit application's claim that there has been compliance with CEQA is wrong. The discretionary action before the LEA is the consideration of a new solid waste facility permit, or in CEQA terms, consideration of an application for a new "project." Although this is a new project, the last public-comment period for most portions of the FEIR ended in 2001, ten years ago, and the public-comment period for the Revised FEIR closed in the summer of 2006, nearly five years ago.

In the interim, the County issued three Addendums, which it did not circulate for public comment. We did provide comments on the December 2009 Addendum in a letter to the LEA dated April 21, 2010, which identified the inadequacies in the Addendum and requested the opportunity for wider public comment. Those comments are attached as Exhibit A and incorporated into these comments. The failure of the LEA to circulate the Addendum for public comment violated CEQA.

In addition, as pointed out in our letter, the LEA's failure to analyze the significant impacts that the proposed landfill would have due to the emission of greenhouse gases ("GHGs") also violates CEQA. Data generated by GCL for its air quality permit application show that GHG emissions after the first year of operations would be approximately 50,000 tons CO₂ equivalent ("CO₂e")¹ and that by the end of the assumed disposal period, those emissions would be 893,709 tons. (A chart with those data is attached as Exhibit B).² It is not clear that those calculations included the proposed use of PGM at the site. Critically, even in 2100, which would be 66 years after the assumed end of operations, annual emissions of GHGs are estimated to be 238,741 tons of CO₂e. That data indicate that GHG emissions of great magnitude would continue indefinitely long after any emissions controls are operable. The LEA has an obligation

¹ Because the United States Environmental Protection Agency ("EPA") has identified methane as being a 21-times more potent GHG than carbon dioxide, methane emissions must be multiplied by that factor to calculate the CO₂e.

² The data are from Appendix J of the "Updated Air Quality Impact Analysis and Health Risk Assessment for the Proposed Gregory Canyon Landfill" dated September 14, 2010. That report is inculcated here by reference and a copy of the entire report can be provided upon request.

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under CEQA to analyze the direct and cumulative impacts of these enormous emissions of GHGs.

As we noted previously, effective March 18, 2010, the CEQA Guidelines were revised by the California Natural Resources Agency to address the scope of the analysis of impacts related to GHG emissions. CEQA Guidelines Section 15064.4 identifies requirements for determining whether a project would cause significant impacts due to GHG emissions, new CEQA Guideline Section 15126.4(c) addresses mitigation measures for GHG emissions, and Section 15130 discusses how the cumulative impacts of a project's GHG emissions must be assessed. The CEQA Guidelines define the term "greenhouse gas" to include methane and carbon dioxide which would be emitted by the proposed landfill, and other pollutants and contaminants that would be emitted by the trucks that would be hauling garbage, water, and the pre-moisturized clay.

The data generated by GCL clearly shows that emissions of GHGs from the proposed project would have significant direct and cumulative impacts on the environment. The CEQA Guidelines confirm that GHG emissions constitute a significant adverse affect that must be analyzed under CEQA and that change alone required that a subsequent or supplemental EIR be prepared. *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 384-84. In addition, the fact that the original FEIR was certified nine years ago makes the need for review of the impacts of GHG emissions even more critical. *Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, 143 (two-year delay after certification raised issue of need for subsequent or supplemental EIR).

The massive GHG emissions from the proposed landfill also would trigger the need for the facility to obtain a Prevention of Significant Deterioration ("PSD") permit under EPA's new GHG "Tailoring Rule." 75 Fed. Reg. 31514 (June 3, 2010). As PSD permits for GHGs would be issued by the San Diego County Air Pollution Control District, such a permit could not be issued with an analysis under CEQA of the impacts of those emissions and mitigation measures to address the emissions. As the lead agency for the proposed project, the LEA has the obligation to provide its responsible agencies with an adequate CEQA analysis. The LEA again has failed to do so, and it should delay processing of this permit until it has complied with its obligations under CEQA.

C. The Permit Application Fails to Provide Evidence of Compliance with the Requirements for the Completeness Determination for the Preliminary Closure/Post-Closure Maintenance Plan ("PCPCMP").

The January 13, 2011, cover letter enclosing the SWFPA simply claims that the "PCPCMP is submitted as an integral part of the JTD and this SWFP application for your review and approval in accordance with 27 CCR, Section 21860." But that provision applies to final

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closure/postclosure maintenance plans and the rules regarding the application process are explicit, stating that the operator has the option of

submitting the preliminary closure plan with the JTD, in which case the EA, RWQCB, and CalRecycle would review it at the same time. If deemed complete by the reviewing agencies, the permit application package could then be accepted for filing if all the other information in the JTD is accepted by the EA. Or the operator can submit a stand alone preliminary closure plan to be deemed complete by reviewing agencies before the application package is submitted to the EA.

(See “Note” at 27 C.C.R. § 21570(f)(6) (italics in original, underline added). This language clearly requires that the preliminary closure plan must have been approved by the LEA, the Regional Water Quality Control Board (“RWQCB”), and CalRecycle before the SWFPA can be deemed complete. As that has not occurred, the SWFPA should not have been accepted as complete and correct.

D. The JTD Still Does Not Provide Sufficient Information to Be Considered Complete and Correct.

In addition to the numerous problems with the SWFPA described above, the JTD submitted as part of the SWFPA also fails to include required information and sufficient detail for a proposed project of this complexity and sensitivity. Specifically, the JTD continually refers to fact that it is based on “conceptual designs” for project elements. That is not the level of detail required by law for this proposed project. Construction designs must be provided in greater detail to ensure that the true costs of the projects and problems that may be encountered in the field are assessed so that unforeseen economics of the project do not become the driving force in its final design and construction. Even a permit to remodel a private residence would require more than “conceptual” designs and that is not sufficient for this project.

Table 5

The JTD fails to note that the project requires encroachment permits for the realignment of State Route 76, which under Proposition C is part of the project, and from the San Diego County Water Authority for passage across the Water Authority’s easement for the First San Diego Aqueduct.

Section B.3.1.11 - Temporary Construction Storage

This section states that during initial construction, concrete removed during demolition and other materials would be temporarily stored on the eastern portion of the current construction

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storage yard. The impacts of this storage on endangered species, especially arroyo toads, was not analyzed under CEQA.

Section B.4.4.4 – Inclement Weather Operations

The JTD still fails to discuss what contingencies would be taken if access to the landfill is precluded by high water in the San Luis Rey River for a period of time or if the bridge is damaged by a greater than 100-year flood, given that the 100-year flood would only a few feet below the bridge. There also is no discussion of whether high winds could affect travel on the bridge.

Section B.4.4.5.1 – Alternative Daily Covers

For the first time, the JTD states that up to 260 tons/day of PGM will be used for daily cover. That is a change in the project with potentially serious impacts related to GHG emissions from the PGM that needs to be evaluated under CEQA. In addition, the JTD now claims that the waste to cover ratio will be reduced to 7.5 to 1 but provides no evidence to substantiate that claim.

Section B.5.1.1.2 – Leachate Collection and Removal System (“LCRS”)

The analysis in this section fails to acknowledge that 90% of the leachate generated on the site would be generated in the sloped areas which do not have an LCRS system.

Section B.5.1.1.3 - Leachate Volumes

The analysis still fails to use the 25-inch per year annual average rainfall that GCL uses to determine the safe yield of all its fractured bedrock production wells. That use of two annual average rainfall amounts for the same site is impermissible and impossible.

Section B.5.1.1.4 – Analysis of Potential Impairment to Groundwater

Based on modeling that is 15 years old and unsupported statements by Dr. Huntley, the JTD now claims that “it is not reasonably foreseeable that any wells in the alluvial aquifer, even wells on the GCL property in the alluvial aquifer, would have detectable contamination that would require remediation.” If that claim is used to limit the amount of corrective action assurances, it must be supported by more-rigorous evidence.

Section B.5.1.3.1 – Groundwater Monitoring Well Locations

The JTD claims that “additional groundwater monitoring wells have been proposed to reflect Dr. Huntley’s recommendations (Appendix C-2), and the revised workplan is included in

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Appendix G-2.” But there is no evidence that the “revised work plan” has been implemented. That work plan requires the installation of five more groundwater wells and other work. The admission that the work plan is necessary and the failure to complete the work means that the JTD cannot be complete and that the SWFPA application is not “complete and correct.”

Section B.5.1.4 – Stormwater Permitting

This section needs to be updated to reflect the fact that the current NOI for coverage under the general stormwater permit terminated on July 1, 2010, and GCL did not submit its application by that point. Consequently, it is a new facility and the current SWPPP is inadequate until a risk evaluation has been conducted.

Section B.5.1.7 - Estimated Cost for Mitigating a Reasonably Foreseeable Release

27 C.C.R. section 22221(a) requires that an applicant demonstrate financial responsibility for initiating and completing all “known or reasonably foreseeable corrective action” at a facility. In calculating the cost for addressing the “known or reasonably foreseeable corrective action” at the facility, the JTD states that corrective action financial assurance analysis is based on the costs associated “with a release to the underlying bedrock as described in Section B.5.1.6.4 above.”

Again, the failure to estimate of the costs of mitigating contamination to the alluvial aquifer means that the JTD and the financial assurance calculations are inadequate. There is no dispute that groundwater in the fractured bedrock system flows into the alluvial aquifer, so it is reasonably foreseeable that corrective action in the alluvial aquifer also would be needed. Without a discussion of how that remediation would occur and an analysis of the costs of such a remediation, the JTD is incomplete. For example, a pump and treat system designed for the fractured bedrock most likely would be insufficient to handle the far greater amount of water in the alluvial aquifer.

The JTD also should consider the potential impairment of surface water in the San Luis Rey River if leachate is not properly handled or if there is a spill of leachate or other material from a truck crossing the bridge. Hundreds of large truck would cross the bridge every day and it is reasonably foreseeable that an accident would result in a discharge to the river. A description of the response to such an accident should be provided along with a cost estimate of the corrective action.

Section B.5.3.1 - Dust Control

The JTD claims that water for dust control would be obtained primarily from pumping point-of-compliance groundwater monitoring wells and using the pumped water on the site. The JTD does not explain how the operator will ensure that water pumped from these wells is not

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contaminated by a leak from the landfill before the pumped groundwater is used on the site, but simply claims that “[r]outine groundwater monitoring of percolating groundwater wells within Gregory Canyon would detect the presence of contaminants in water to be used for dust control.” But given the infrequent sampling and analysis proposed, the only method of ensuring that such contamination does not occur is to require additional sampling of the pumped water before its use. That issue should have been addressed in the JTD.

Section B.5.3.5 - Fire Control

The JTD never explains how the operator will be able to address fires that begin on the site or threaten the site from outside. Although the JTD identifies protective measures to prevent on-site fires, the on-site fire-fighting capabilities of the operator are never explained, and thus the claim that “additional fire suppression forces are available from the California Department of Forestry (CDF) station” begs the question as to what on-site “forces” those CDF capabilities would supplement. The JTD also should identify the location of the CDF station and provide written confirmation that the CDF will provide fire-protection services. The statement that the “San Diego County Fire Authority operates a fire station in the general vicinity of the landfill property, and it is expected that the Authority will be constructing a fire station at a location close to the landfill property” is not sufficient.

This issue of fire protection is critical given that the proposed facility would be located in an area designated as a very high fire hazard severity zone by the California Department of Forestry. That designation applies in part because the site is susceptible to Santa-Ana-wind-driven fires such as the Rice Canyon fire which burned thousands of acres nearby.

In addition, although the JTD does not discuss the issue, documents submitted with the air quality permit application indicate that nearly 800,000 tons of material would need to be blasted to construct the proposed landfill, requiring up to 88 blasts a year. A single blast could consist of up to eight tons of a mixture of ammonium nitrate and fuel oil (“ANFO”), and would be designed to impact an area of up to 0.5 acres or approximately 650,000 cubic feet of material. Given the significant blasting that would occur the lack of any discussion of blasting in the context of fire safety is inexcusable. There also should have been some discussion of Section 96.1.3301.2 of the 2009 County Consolidated Fire Code, which describes specific permitting and inspection requirements for such major blasting.

Moreover, the only source of water to fight fires would be groundwater wells and any remaining water stored in the 20,000-gallon water tank. But that is a small amount of water and the JTD does not describe how the water would be used to fight a fire, including what equipment would be available for fire-fighting purposes. The fact is that a fire on the site could severely damage the facility, including the liner, the bridge, the hazardous waste storage area, and all the structures in the facilities area. In addition, a fire at the proposed landfill could increase the risk

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to neighboring structures and areas given that tires and hazardous waste would be stored on the site and there may be fuel storage for dispensing to trucks at the site. Without a better discussion of these risks and of the operator's fire-fighting capabilities, the SWFPA is not complete and correct.

Finally, any draft permit must include the requirements that are listed in the JTD. Those include that "the landfill gas control system will be operated so as not to introduce excessive amounts of oxygen into the refuse prism. The extraction wells will be monitored for temperature and oxygen content to determine if a subsurface fire is present. All equipment with internal combustion engines will be equipped with approved spark arrestors and any flammable debris will be removed from the undercarriages and engine compartments of heavy equipment on a regular basis. Fire extinguishers will be available at the entrance facilities, in the administration and operations trailers, and in landfill equipment and vehicles. Hazardous materials, collected as part of the HWEP, will be stored in fire proof containers located in the ancillary facilities area."

Section C.2.1 – Design Features

The JTD admits that the engineering drawings and designs supporting the SWFPA are "conceptual" in nature, which is insufficient. The LEA must require more detail regarding the design of the facilities, and while final drawings may not be required, conceptual designs are not sufficient.

For example, the JTD states that storm water falling on the steep sides of the canyon would be prevented from washing out the garbage by the construction of perimeter storm drain ("PSD") channels. The only design drawings of these PSD channels are found on Figure 19 of the JTD (identified as "PCC"), which simply show that the channels will be three or four foot-wide trapezoidal channels. (Exhibit J). Although the eastern PSD channel would be located on the slopes of Gregory Mountain high above the bottom of the canyon, the JTD contains no discussion or figures showing how this PSD channel would be constructed on the side of the mountain or how it would be anchored to ensure that it would be able to properly perform its water-collection functions. More construction details of these PSD channels and other landfill features are needed before the LEA can approve the SWFPA as complete.

Section C.2.2.3 – Material Availability

Not surprisingly, this section concludes that raising the waste to cover ratio to 7.5:1 magically allows GCL to claim that the amount of usable cover material on site equals the amount needed for operations and final cover. Again, no support for the use of that ratio is provided.

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Section C.2.2.4 - Stockpile/Borrow Areas

The JTD fails to provide sufficient information to support the claim that “proper drainage control will be maintained in Borrow Area A.” While the JTD states that erosion control measures would include desilting basins, down drains, and/or rip rap, it does not state where or when these features would be installed or describe the size or construction details of these features. The discussion of the 150-foot deep Borrow Area B also fails to provide a description or location of proposed water-control facilities.

The JTD also claims that surface waters would be “conveyed from the borrow/stockpile areas and discharged into the existing natural drainage courses.” But no map is provided to show which existing channels would be used.

Finally, there is no discussion of the impacts that constructing Borrow Area B would have on the First San Diego Aqueduct. Drawings indicate that the Borrow pit would be on both sides of the aqueduct and the FEIR states that blasting would be needed to excavate the mine pit. Those issues should have been addressed in the JTD.

Section C.2.5.3.1 - Leachate Generation

This section of the JTD, which is dated 2004, claims that peak leachate generation would be 1236 cubic feet per day (9,245 gallons per day (“gpd”).) But the estimated amount of leachate generation was not based on the use of an average annual rainfall amount of 25 inches per year rainfall which GCL now claims applies at the site. (See page 10 of the 2007 “Water Supply Report” attached as Exhibit K.) GCL used 25 inches per year to calculate the amount of recharge to the fractured bedrock to show pumping capabilities of on-site groundwater wells.

GCL used a higher annual average rainfall amount to increase the amount of groundwater that it claims can be pumped from the fractured bedrock. GCL used a lower rainfall amount to calculate leachate generation because it would result in less leachate being generated. GCL cannot use one rainfall amount when it supports its claims and another when it does not.

The issue of how much leachate would be generated is critical because the leachate control and recovery system (“LCRS”) must be designed “to collect and remove twice the maximum anticipated daily volume of leachate.” (27 C.C.R. § 20340(b).) The fact is that the leachate generation rate must be recalculated using the higher annual average rainfall amount for the JTD to be complete and correct.

The JTD also states that one or two 10,000-gallon leachate storage tanks “will be monitored for the presence of liquid by the operator during the routine quarterly sampling events or as specified by the WDRs.” (JTD at C.2-12). Given that the peak leachate production would be at least 9,245 gpd (more if the 25 inches per year were used), quarterly monitoring of the

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tanks would not be sufficient. To be complete, the JTD must reassess the leachate generation at the site and require daily or weekly leachate inspections during certain periods of operation.

Section C.2.5.4 – Leachate Control and Recovery System

The JTD admits, in passing, that federal and state regulations require that the LCRS extend up the side slopes of a facility and that the proposed design would not meet those standards. 27 C.C.R. § 20340. But the JTD merely glosses over the issue in a short paragraph and fails to identify the regulatory exemption from those requirements or to discuss in detail how the proposed alternative system would be protective of human health and the environment. That lack of information also makes the SWFPA incomplete.

The JTD states that the alternative side-slope LCRS design would result in leachate flowing along the operations layer liner/refuse-interface to slotted pipes at the elbow where the sideslope flattens and meets the main portion of the proposed landfill footprint, but it does not clearly describe how leachate collected in these areas would be transferred to the primary LCRS. There is no evidence that this alternative design for collecting and transferring leachate would not result in ponding of leachate as prohibited by law. 27 C.C.R. § 20340(f). A proper analysis of this design is critical given that approximately 90% of the leachate generated would be generated on the side-slope areas. (FEIR pg. 4.3-21-22).

Section C.2.7.1 - Landfill Gas

The JTD states that gas condensate would be collected and possibly incinerated on site. The JTD must clarify that all condensate would have to be analyzed to determine if it was a hazardous waste and if so, managed properly and not incinerated on site without appropriate permits.

Section 2.8.2 – Hydrology

This section previously stated that the First San Diego Aqueduct is “planned to be relocated” to the west away from the landfill footprint, but now states that it “may be relocated to the west.” We believe that proposition C requires GCL to relocate the aqueduct if required by the County Water Authority.

Section C.2.8.3.2 - PSD Channel System

The JTD states that “[a]ll run-on from surrounding areas and the undisturbed areas of the site” would be captured by the PSD channels and discharged directly to the San Luis Rey River. (JTD at C.2-21.) Stormwater from the “disturbed” areas of the landfill footprint (up to 75 acres at one time) would be collected in underground pipes that would discharge to two desilting basins.

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The discussion of this system in the JTD fails to answer a number of critical questions. For example, while the PSD channels are designed to capture “sheet flow” water during storm events, given the steep nature of Gregory Mountain, run-off from the mountain occurs in defined drainages and not as sheet flow. That raises serious questions about the ability of the eastern PSD channel to collect run-off and to withstand severe storm flows in those steep drainages.

In addition, as shown in the letter report prepared by Dr. Richard Horner and attached as Exhibit C, the modeling which formed the basis for designing all of these stormwater control systems is flawed and needs to be reevaluated. The claim that infiltration or percolation areas could be used to control runoff from these PSD channels is not supported by sufficient analysis of infiltration rates and other critical factors.

Section C.2.8.3.5 - Storm Water Desilting Basin

The JTD fails to provide a rationale for using a 10-year, six-hour rainfall event to size the desilting basins, given that the JTD claims that the perimeter piping which will discharge into those basins will be sized to carry water from a 100-year, 24-hour storm event. There is no discussion of what will happen to those desilting basins when larger events occur.

The JTD states that the desilting basins were designed to the 10-year storm event based on the 2003 California Stormwater Best Management Practices Handbook published by the California Stormwater Quality Association (“CASQA”). But the CASQA website states that it no longer supports the 2003 Handbook because of the new stormwater permit. The JTD should be updated to reflect current regulatory standards. In addition, given the amount of sediment that would be collected in the PSD channels, that water also should be treated first in the desilting basins, which need to be resized for those flows as well.

Section C.2.9.1 - Landfill Construction Phasing

The JTD states that the project “includes some modifications to improve site distance and to facilitate truck movement on Pala Road (SR 76) near the access road entrance.” But no further discussion of these modifications is provided, although Proposition C requires the permit applicant to provide “detailed plans for the realignment of Highway 76” to provide approximately 1000 feet of site distance in both directions for traffic leaving the landfill and for widening the road to allow deceleration and acceleration lanes. As these improvements to State Route 76 are required elements of the project pursuant to Proposition C, detailed design drawings approved by CalTrans should be part of the SWFPA.

In addition, the rules require that a traffic control plan be provided showing that traffic flow “into, on and out of the site is controlled to minimize interference and safety problems for traffic on-site and adjacent public streets or roads.” 27 C.C.R. § 21600(b)(8)(I). No traffic

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control plan or any analysis of safety issues related to ingress and egress along SR 76 is included in the JTD or the SWFPA.

Section C.2.9.2.3 – Liner System Development

The JTD states that liner construction in the Phase I area “will be completed in stages” and it repeats that statement for other phases. What the JTD does not discuss is how the liner system will be protected before the placement of waste occurs or how various sections of the liner will be constructed to ensure continuity of the liner system. These are quality assurance/quality control issues that should be described in the text of the JTD.

Section C.2.9.2.5 – Drainage Control Development

The JTD states that interim drainage control facilities will be constructed “as required to control storm flows and prevent the inundation of the active face” but admits that “two desiltation basins and a portion of the perimeter storm drain channels will be constructed during the Phase I development.” In Section C.2.9.4.5, the JTD admits that the “final drainage system configuration will be completed as part of the Phase III fill and final cover construction.” Without a fuller discussion as to how stormwater flows will be managed before the entire PSD system is installed, all that the LEA has is GCL’s “assurance” that these flows would be managed properly. That is not sufficient under the CalRecycle rules.

Section D.2.3 – Floodplain

The JTD fails to mention that the eastern desilting basin and infiltration area and potentially part of the facilities area, including the proposed flare station are within the 100-year floodplain shown on Figure 30B. No analysis of the impacts of that construction on the floodplain has been conducted and no approvals from FEMA have been obtained. Until those issues are resolved, the JTD and the SWFPA are not complete and correct. This issue also was not discussed in the FEIR because the FEIR included a misleading and altered FEMA map that did not show the 100-year flood plain in this area.

Section D.3.2 - Precipitation

The JTD claims that “[a]verage annual rainfall within Gregory Canyon is expected to be in the range of 17.5 to 25.27 inches,” but an average is a single number. It is not clear that these “averages” were used in the HELP3 leachate analysis. GCL had years to collect on-site rainfall data, but chose not to so it could use whatever data best fit its needs. For example, it claimed that a 25-inch rainfall year is an extreme event in attempting to persuade the Army Corps of Engineers that the canyon did not include “waters of the United States.” We refer you to Dr. Horner’s letter for comments on flaws in the “modeling” discussed in this section.

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Section D.4.7 - Geologic Hazards Due to Surface and Near-Surface Processes

The JTD concludes that “there is clear evidence that rock falls have occurred at the site” and that “construction of a ‘catching’ wall or other diversion structure near the edge of the landfill is recommended to effectively mitigate the risk of rock fragments rolling onto the landfill.” But, there is no further discussion regarding the specifications and location of this “catching” wall. In addition, the analysis in the JTD does not consider the impact of rolling or bouncing boulders on the integrity of the eastern PSD channel and does not identify where this “catching wall” would be located in relation to the PSD channel. Construction in these open space areas is not allowed and the need for these structures should be determined now and the impacts analyzed.

Section D.5.1.2 - Local Hydrogeologic Setting

Given that the JTD admits that the “fracture-controlled groundwater communicates with, and recharges the alluvial water in the San Luis Rey River valley,” the conclusion that contamination in the fractures could not pollute the alluvial aquifer is not supportable.

Section E.1.3.1.4 - Final Cover Construction

Neither this section of the JTD nor the CQA Plan in Appendix M provide any information indicating why material from the borrow areas will be suitable for the “vegetative cover” layer for the landfill. Given the enormous amount of material that will be needed, it is critical to show that the excavated material will be suitable as the vegetative cover layer.

Section E.3.6 - Floods

As part of the post-closure emergency plan, GCL describes the procedures it will take “if flood waters occur at the GCLF in excess of the handling capability of the storm water control system.” But this contingency should be addressed for the operating period, especially for those periods before the PSD channels are completed or both desilting bases installed.

The JTD states that during a 100-year flood, water in the San Luis Rey River would rise to approximately 18 inches below the bridge. Even assuming that those calculations are correct (and that the level of the water will not actually be higher), the JTD should provide contingency measures describing when the access road and bridge would be closed for safety purposes, and describing what would occur if a larger storm event damaged the bridge. Neither the JTD nor the SWFPA adequately address the risks created by building a landfill that can only be accessed by a bridge over the San Luis Rey River.

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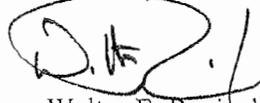
Section E.3.3 - Emergency Response Notification Procedure

The JTD should discuss how maintenance personnel would be trained to identify an "emergency situation" and should identify the "site engineer" and the qualifications for that position.

III. Conclusion

These comments identify numerous deficiencies in the SWFPA that need to be addressed before the permit application can be processed further. Once again, the LEA should rescind its determination that the SWFPA was complete and require the additional information discussed above to be provided.

Sincerely,

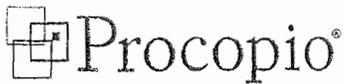


Walter E. Rusinek

WER/mkk
Enclosures

cc: Robert H. Smith, Chairman, Pala Band of Mission Indians
Ms. Shasta Gaughen, Director, Pala Environmental Services
San Diego County Board of Supervisors
Mr. Jim Wood, Mayor, City of Oceanside
Dr. Spencer D. MacNeil, U. S. Army Corps of Engineers
Mr. Jared Blumenfeld, USEPA, Region IX
Ms. Michelle C. Moreno, U.S. Fish & Wildlife Service
Mr. Mark Leary, CalRecycle
Mr. David Gibson, Regional Water Quality Control Board
Mr. Stephen Moore, San Diego County Air Pollution Control District
Ms. Maureen A. Stapleton, San Diego County Water Authority
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Ms. Laura Hunter, Environmental Health Coalition
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Mr. Johnny Pappas, Surfrider Foundation

EXHIBIT A



Procopio, Cory, Hargreaves & Savitch LLP

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April 21, 2010

Mr. Jack Miller
County of San Diego
Department of Environmental Health
Local Enforcement Agency
1255 Imperial Avenue
San Diego, California 92101

Re: **Comments on the Addendum to the Certified Final Environmental Impact Report for the Proposed Gregory Canyon Landfill**

Dear Mr. Miller:

These comments are provided on behalf of the Pala Band of Mission Indians on the "Addendum to the Certified Environmental Impact Report" ("Addendum") for the proposed Gregory Canyon Landfill ("Project") made public in January of this year. The Addendum was prepared to analyze the impacts of obtaining new sources of water for the proposed Project following the decision by the Olivenhain Municipal Water District to terminate its agreement to sell water to Gregory Canyon Ltd. ("GCL").

Unfortunately, the County determined that this analysis of the important issues raised by the need for new sources of water for the Project would not be improved by allowing public comment. That resulted in an inadequate analysis of the impacts of the proposed changes in the Project. After reviewing the Addendum and considering recent changes in California laws related to greenhouse gas emissions and fire safety, we have concluded that the analysis in the Addendum was inadequate for a number of reasons, including for the reasons discussed below. Given those inadequacies, the substantial changes in the Project and the circumstances under which the Project is undertaken and the new information that identifies new significant effects, the County should prepare a subsequent or a supplemental EIR for the Project and allow the public an opportunity to comment on that analysis.

I. The Addendum Failed to Analyze the Impacts of Obtaining Pre-Moisturized Clay for the Liner.

The Addendum claims that water demand at the proposed landfill can be reduced by "pre-moisturizing" clay for the liner at the clay mine, which the Addendum identifies for the first

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time as the Pacific Clay Products, Inc. Mine in Lake Elsinore, California. The Addendum includes a non-binding proposal from the company to supply the pre-moisturized clay as well as gravel for the proposed Project. The Addendum concludes that pre-moisturizing the clay at the mine site would reduce water demand at the proposed landfill site by 125,000 gallons per day (“gpd”).

But, the Addendum fails to identify and analyze a number of impacts. First, there is no discussion regarding (1) the amount of water that would be needed to prepare the clay for trucking (to “over-moisturize” the clay), or (2) the source of the water for that process. If the proposed project water use would be reduced by 125,000 gpd, and the clay is being over-moisturized, the amount of water needed must be higher, but that fact is not discussed. Without some discussion of the amount and source of the water needed, the Addendum could not analyze how the use of that significant amount of water at the Pacific Clay Mine could impact other water users in the Lake Elsinore area. We note that footnote 5 of the Addendum claims that there are “numerous sources” of clay available in Southern California, but that information is not found in Appendix D or E as claimed. If another source of clay would be used, the impacts related to obtaining the material from that site should be analyzed.

In addition, the Addendum contained no description of the mine itself or of the process that would be used to mine and then “over-moisturize” the clay. Consequently, there was no analysis of the potential impacts to water quality from these processes. The Addendum also failed to analyze traffic, air quality, or noise impacts in the area from mining, moisturizing, and trucking the approximately 650,000 cubic yards of clay and 110,000 cubic yards of gravel that would be needed for the proposed landfill. No analysis was provided of the greenhouse gas (“GHG”) emissions that would be caused by mining the clay and trucking the wet clay and gravel.

More troubling is the fact that the Addendum simply assumes that pre-moisturizing the clay at the mine to between four to six percent “above the optimum moisture content” would have no impact on the quality of the liner. There is no discussion of the quality assurance at the mine site to ensure that optimum moisture content has been achieved, given that clay does not easily take or give up water content. Although Pacific Clay represents that it currently moisturizes clay used to manufacture fire brick at its facility, there is no evidence that Pacific Clay ever has pre-moisturized clay for purposes of constructing a landfill liner or that pre-moisturizing clay for a landfill has been done anywhere in Southern California. That is critical information that should have been included and analyzed in the Addendum, and as the pre-moisturizing of the clay constitutes a significant change in the project, further analysis and comment was required under CEQA Guidelines Sections 15162 or 15163.

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II. The Addendum Failed to Analyze the Impacts of Using Soil Sealants in Areas Designated as Critical or Important Habitat for Endangered Species.

The Addendum also claims that water demand would be decreased by the use of soil sealants on unpaved roads. The Addendum also claims that use of the soil sealant "SOILTAC" would not affect water quality because "project components are designed so that runoff would not discharge directly to the river" and "areas in which the soil sealant would be applied are not located within close proximity to the river." (Addendum at pg. 37). But the Addendum did not identify where the soil sealants would be used, and the fact that a number of unpaved roads on the site are close to the San Luis Rey River raises questions about the basis for those assertions.

The Addendum also claimed that there would be no water quality impacts because laboratory test data for SOILTAC show "no detection of pesticides, PCBs, herbicides, or heavy metals, but indicate the presence of vinyl acetate and acetone." If the sealant contains vinyl acetate and acetone some analysis was required of the potential impact of vinyl acetate and acetone on water quality and species in the area. We note that the Material Safety Data Sheet ("MSDS") for the SOILTAC product included in the Addendum contains no information on acute eye, oral, skin, or inhalation toxicity, but specifically identifies first aid measures for eye contact, skin contact, inhalation or ingestion. The MSDS directs that such exposures be addressed immediately.

Given that the MSDS directs users of the product to limit skin contact and oral ingestion, the Addendum should have analyzed the impact of applying the sealant on property, especially in areas where the endangered arroyo southwestern toad and other species have been found. The MSDS does include information on ecotoxicity, but there is no discussion of impacts to amphibians or other species. Some analysis of that important issue was required under CEQA.

III. The Analysis in the Addendum of Claimed Riparian Water Rights Was Inadequate.

The Addendum asserts that one of the new sources of water would be water from the Pala Basin alluvial aquifer that would be diverted on the basis of a claimed riparian water right. There are a number of reasons why the analysis of this issue in the Addendum was inadequate.

First, footnote 2 of Appendix G to the Addendum acknowledges that, when the South Coast Land Company ("SCLC") sold a number of the riparian parcels in 1913, SCLC reserved the right to use all water developed on the parcels in excess of the amount of water needed for use on the Properties. The deed states that the new owner retained the right to use the riparian water "necessary for irrigation, domestic and stock purposes" on those riparian parcels. (Exhibit A.)

That provision in the 1913 grant deed forever severed the riparian rights from the land, except for that amount necessary for irrigation, domestic and stock purposes. (*Carlsbad Mutual*

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Water Co. v. San Luis Rey Development Co. (1947) 78 Cal.App.2d 900, 913; *Forest Lakes Mutual Water Co. v. Santa Cruz Land and Title Co.* (1929) 98 Cal.App. 489, 496). The proposed landfill would not use water for any of the listed purposes. Moreover, because the grant burdened the land with the limits on water use, the claims in Footnote 2 that (1) there is no evidence that the rights reserved by the seller were used, or (2) even if the water reserved by SCLC had been used, those rights “would be subordinate to riparian rights” are both wrong and irrelevant. It should be noted that, as discussed in the *Carlsbad Mutual Water* case, SCLC was involved at the time in purchasing land and water rights for both downstream and upstream diversions, including the construction of Lake Henshaw. Consequently, the facts appear to show that the water was used by SCLC and/or its successors-in-interest.

Second, the analysis in the Addendum claims that parcels that were riparian when the initial grant was made from the public domain retain those rights even if a subdivided parcel is no longer riparian. By law, where a parcel is conveyed by a deed “that is silent as to riparian rights, the conveyed parcel is forever deprived of its riparian status.” (*Rancho Santa Margarita v. Vail* (1938) 11 Cal.2d 501, 538). This rule is particularly pertinent to original Grant No. 6, which includes current Parcels 9 and 10 (App. G, Figure 1). The claim that the “whole of the property remained intact through numerous conveyances” is not supported by the evidence. Parcels 9 and 10 are separate parcels with different assessor’s parcel numbers. Because the Addendum shows that Parcel 9 is not riparian to the alluvial aquifer, it no longer has any riparian rights.

Third, the claim that Parcel 10 is riparian to the alluvial aquifer also is questionable. Figure 5 of Appendix F of the Addendum claims to show the extent of the alluvial aquifer on the parcel, but that description is based on field surveys, not on a subsurface investigation. In fact, Figure 5 directly conflicts with the extent of the alluvial aquifer identified on Plate 1 in the Joint Technical Document (“JTD”) titled “Geology, Hydrogeology and Geotechnical Analyses” by GeoLogic Associates, dated May 2003, and Figure 2-3A of the JTD. Those maps clearly show that, at the farthest, the “finger” of alluvium in the area identified in Figure 5 of Appendix F pinches out before the 330-foot contour and does not reach to the 370-foot contour as claimed on Figure 5. That is a significant spatial difference that leaves the extent of the alluvium far outside the boundary of Parcel 10, and raises serious questions about the use of surface investigations to define the limits of the alluvial aquifer.

The same problem plagues the assertion that the northwest corner of Parcel 10 abuts the alluvial aquifer. Again, that claim is based solely on surface investigations and is suspect given that the boring log for Well GLA-14, which is very near that corner, shows that the water-bearing area is in an area below weathered bedrock, not in the alluvium.

Given all these problems with the analysis in the Addendum of these claimed riparian rights, further CEQA analysis is required. Prior that analysis being completed, however, additional subsurface field investigations must be conducted to confirm that Parcel 10 actually is riparian to the alluvial aquifer and that the aquifer is water-bearing in that area.

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IV. The Addendum Failed to Analyze the Impacts of Piping Any Pumped Groundwater.

In addition to the use of seven point-of-compliance monitoring wells to supply water to the proposed Project, the Addendum identifies (1) three wells located on the former Lucio Dairy on the north side of the San Luis Rey River where groundwater would be pumped from the alluvial aquifer and (2) three new percolating groundwater wells that would be located in the Borrow Area B and Borrow Area A “watersheds” and in an area north of State Route 76 as on Figure 1 of Appendix H. Figure 1 shows the proposed routes for pipelines from these wells to water tanks to be located near the facilities area and in Borrow Area B, which are both on the south side of the river. Although the Addendum claims that the construction and maintenance of these pipelines would not cause any impacts, the analysis of the issue is superficial and relies on the argument that the pipelines would be installed in disturbed areas.

But it is clear that the pipeline from the groundwater well proposed for the north side of State Route 76 would have to be installed under State Route 76. Some analysis of the impacts to the road and traffic from that construction should have been included. In addition, that pipeline and the separate pipeline for the Lucio “riparian” wells (there would be two pipelines to separate riparian water from percolating groundwater) would have to cross the San Luis Rey River to reach the water tanks on the south side of the river. Even so, there was no discussion regarding the impacts of installing these pipelines through the river.

In addition, Figure 1 shows that these pipelines as well as the pipeline from the proposed Borrow Area A well would have to cross the San Diego County Water Authority Aqueduct. Again, there was no discussion of the impacts of installing these pipelines on the Aqueduct. All of these areas also are within critical habitat and habitat for the endangered arroyo toad. Because the Addendum failed to analyze the impacts of the pipelines on the river, the Aqueduct, and species, it violated CEQA.

Under state law, percolating groundwater is appurtenant to the land, and can only be used on the overlying parcel from which the water is pumped. (*See, e.g., California Water Service Co. v. Edward Sidebotham & Son, Inc.* (1964) 224 Cal.App.2d 715, 725). That contradicts with the assumption in the Addendum that groundwater pumped from the three proposed percolating groundwater wells could be used anywhere on the site.

Worse, the Addendum claims that the “safe yield” of these three new wells is 22.8 acre feet of water per year (7.4 million gallons) even though no wells have been drilled in or near any of the three “basin” areas. Rather, as discussed in Appendix H, the Addendum simply assumes that the areas would receive 25 inches of rain annually and that a portion of that water would infiltrate to the bedrock system. Not only is the rainfall assumption not supported by any evidence, but the lack of any hydrogeologic data on the amount of water these wells could produce makes the wells an illusory source of water that cannot be used to assume that there is an adequate source of water on the site.

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V. The Impacts of Pumping Water From the Lucio Dairy Wells Was Inadequate Because the Wrong Baseline Was Used.

The Addendum claims that pumping groundwater from the Lucio Dairy wells would have no impact because the amount pumped would be less than the historic amount pumped on the site. But the analysis of the impacts of pumping should have been based on current uses on the site. The fact is that no water currently is being pumped from the site and has not been pumped for approximately eight years.

Under CEQA, the impacts of a project must be compared “to the actual environmental conditions at the time of CEQA analysis” and must assess “the ‘existing physical conditions in the affected area’ [citation omitted] that is, the ‘real conditions on the ground’ [citations omitted].” (*Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310 at *4). Water pumping amounts from eight or more years ago do not establish a proper baseline under CEQA for current conditions. (*Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal.App.4th 89, 126).

In addition, claiming that the proposed pumping would cause no impacts based on the amount of water stored in the entire Pala Basin aquifer and the alleged “safe yield” of that aquifer ignores the need to assess impacts in the “affected area.” Also, under the riparian doctrine, all riparian owners are entitled to a proportional share of water (*see, e.g., Pleasant Valley Canal Co. v. Borrer* (1998) 61 Cal.App.4th 742, 753), so some analysis was needed of how this new pumping could impact current uses.

In addition, some analysis is needed of the impacts of pumping at the proposed rate on existing habitat, on species especially the arroyo toad, on the ability to create mitigation areas based on water levels, and on surface flows in the river. Other localized effects could include subsidence and impacts on the access road. The failure to even consider these impacts violated CEQA.

VI. The Addendum Failed to Consider the Legal Limitations on the San Gabriel Valley Water Company’s Sale of Recycled Water.

The Addendum also claims that recycled water for the proposed Project would be obtained pursuant to a “Recycled Water Agreement” between the San Gabriel Valley Water Company (“SGVWC”) and GCL dated September 30, 2009. (“GCL Agreement”). Under the GCL Agreement, water would be obtained from the SGVWC facility in El Monte, California, east of Los Angeles, and then trucked 90 miles to the proposed landfill site. SGVWC is a privately owned utility regulated by the California Public Utilities Commission (“CPUC”). What the Addendum fails to discuss, however, are the agreements under which SGVWC obtains this recycled water and the conflicts between the terms of the GCL Agreement and those other agreements.

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Specifically, the SGVWC's source of recycled water is the Whittier Narrows Water Reclamation Plant operated by the Los Angeles County Sanitation District ("Sanitation District"). The Sanitation District sells recycled water to the Upper San Gabriel Valley Municipal Water District ("Upper District") pursuant to that "Agreement for Purchase and Sale of Reclaimed Water" dated January 12, 2005 (the "2005 Agreement") (Exhibit B). The Upper District then sells a portion of that water to SGVWC pursuant to the "Whittier Narrows Agreement" dated June 27, 2006 ("2006 Agreement") among the Upper District, SGVWC, and the Los Angeles Department of Parks and Recreation ("LADPR"). The 2006 Agreement is attached as Exhibit C.

Section 8.2 of the 2005 Agreement requires that the Upper District "oversee any and all sites that receive reclaimed water from Upper District, and to ensure, by agreement, ordinance, or other such administrative mandate, that each site using reclaimed water from the water reclamation plant does so in accordance with the rules, regulations, guidelines and any other pertinent criteria for such use mandated by the Department and/or other regulatory agencies with appropriate jurisdiction." That provision also states that the Upper District must provide the Sanitation District with a copy of the Upper District's plan to inspect sites where the reclaimed water would be used, and required that the Sanitation District and its Board approve any new or extended portions of the Upper District's reclaimed water distribution system. The Addendum does not mention these requirements or show that they have been satisfied. Appendix B to the 2005 Agreement includes State Water Resources Control Board Order No. 88-107, which only allows reclaimed water from the Whittier Narrows Reclamation Plant to be used "within the San Gabriel Valley Hydrologic Subunit." The proposed landfill site is not within that subunit.

The Addendum also conveniently fails to mention that Section 2.1.6 of the 2006 Agreement states the SGVWC's sale of recycled water to third parties other than the LADPR must be pursuant to a separate agreement between the Upper District and SGVWC. In addition, Section 3.1.4 of the 2006 Agreement requires that the Upper District "secure, maintain, and review all requisite permits and approvals for each SGVWC customer utilizing recycled water purchased from" the Upper District. The Addendum does not mention those provisions or provide any evidence that these requirements have been met.

In addition to ignoring these agreements, the Addendum also failed to discuss the fact that because the SGVWC is a CPUC-regulated public utility, any exceptions or deviations to the SGVWC's CPUC-approved tariffs requires approval of the CPUC, and any contract must be authorized by the CPUC before the contract becomes effective. (CPUC Standard Practice U-8-W). For example, CPUC Sheet 19-16-W, dated December 16, 2009, lists SGVWC's sale of recycled water to the LADPR under the "list of contracts and deviations" from SGVWC's standard tariff that were approved by the CPUC. (Exhibit D).

CPUC approval is specifically required where water service is being extended by a CPUC-regulated water company outside of its identified service area. There is no question that

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the proposed Gregory Canyon Landfill site is far outside the SGVWC's CPUC-approved service area. The CPUC rules requires that if the new service territory is more than 2,000 feet from the existing service area, or is not in the same city in which the utility already provides service, the utility must file for formal certification by the CPUC. As an example, the SGVWC requested such a modification on October 13, 2006, to add the LADPR. (CPUC Advice Letter 346, attached as Exhibit E). Case law indicates that a contract is not effective if water service is extended without the approval of the CPUC. (See *e.g.*, *California Water & Telephone Company v. Public Utilities Commission of the State of California* (1959) 51 Cal.2d 478, 501). Failure to address let alone analyze this issue in the Addendum was a violation of CEQA.

The fact is that the GCL Agreement is invalid without CPUC approval. Relying on such a speculative source of water is an improper basis for decision making under CEQA. (*Vineyard Area Citizens For Responsible growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 432).

VII. New CEQA Guidelines Require that the Impacts From Emissions of GHGs From the Proposed Landfill Must Be Analyzed and Circulated for Public Comment.

Revisions to the CEQA Guidelines adopted by the Natural Resources Agency to address the analysis of impacts related to greenhouse gas emissions under CEQA became effective March 18, 2010. CEQA Guidelines Section 15064.4 identifies requirements for determining whether a project would cause significant impacts due to GHG emissions, and new CEQA Guidelines Section 15126.4(c) addresses mitigation measures for GHG emissions. The new rules also discuss how the cumulative impacts of a project's GHG emissions must be assessed. (CEQA Guidelines § 15130). The CEQA Guidelines define the term "greenhouse gas" to include methane, which would be emitted by the proposed landfill, and other pollutants and contaminants that would be emitted by the trucks that would be hauling water and pre-moisturized clay.

The issuance of these Guidelines confirms that GHG emissions constitute a significant adverse affect that must be analyzed under CEQA. No such analysis was provided in the Addendum as to the direct or cumulative impact of the proposed landfill project. Because new information of substantial importance shows that the Project will have one or more significant effects, a subsequent or supplemental EIR must be prepared. (CEQA Guidelines § 15162; *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 384-84 (listing of steelhead trout as an endangered species after certification of the FEIR required supplemental analysis of the project). The fact is that the certification of the original FEIR occurred more than seven years ago, making review of that issue even more critical. (See *Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, 143 (two-year delay after certification raised issue of need for subsequent or supplemental EIR).

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VIII. The Issuance of a Consolidated County Fire Code in November of 2009 Requires That Further Analysis of the Proposed Project Be Completed to Assess Impacts.

Another significant change that affects the proposed Project was the release of the 2009 Consolidated Fire Code for the County of San Diego, which became effective on November 13, 2009. The revision of the Fire Code was completed by the County in response to significant wildfires in October 2003 and 2007. The FEIR had addressed the issue of fire protection by relying on the North County Fire Protection District (“NCFPD”) and State and County mutual aid agreements for fire protection and on the fact that a 20,000-gallon water tank would be installed on the site. At least part of the site for the proposed Project appears to be in a very high fire hazard severity zone, and the 2007 Rice Canyon Fire burned just to the northwest of the site.

There has been no analysis of the requirements of the new Fire Code. For example, Section 503.1.2 of the Fire Code requires that areas with dead-end access like the proposed landfill have “turnarounds” at a maximum of 1,320-foot intervals as well as a turnaround within 150 feet of the end of the road. The ability to provide those turnarounds and the impacts of doing so should be analyzed.

Section 508.2 also establishes specific requirements for water reservoirs that would be used to fight fires, especially in areas without centralized service from a water district. Given the size of the proposed Project, the lack of a secure source of water, and the small size of the water tanks proposed for the property, some analysis should be provided regarding whether the storage capacity would meet the requirement of the new Fire Code.

Likewise, the requirements of Section 3301.2 of the new Fire Code governing the use of explosives need to be assessed. Significant blasting would be required to construct the proposed landfill, and some analysis of these Fire Code requirements should be completed in light of that required blasting.

IX. Conclusion

Once again, the County chose to avoid public discussion of these important issues by preparing an Addendum to the RFEIR to avoid public comment. As described above, the result was an inadequate analysis of these critical issues. To rectify that result, we urge the County to prepare a subsequent or supplemental EIR that would address these issues properly and allow for public input.

Sincerely,



Walter E. Rusinek

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WER/bb

cc: Chairman Robert H. Smith, Pala Band of Mission Indians
Ms. Lenore Lamb, Director, Pala Environmental Services
Ms. Theresa O'Rourke, Army Corps of Engineers
Ms. Michelle Moreno, United States Fish & Wildlife Service
Ms. Chiara Clemente, Regional Water Quality Control Board
Mr. Stephen Moore, San Diego County Air Pollution Control District
Ms. Alexis Strauss, United States Environmental Protection Agency
Joel Reynolds, Esq., NRDC
Damon Nagami, Esq., NRDC

EXHIBIT B



**VOLUME VII:
UPDATED AIR QUALITY IMPACT
ANALYSIS AND HEALTH RISK
ASSESSMENT FOR THE PROPOSED
GREGORY CANYON LANDFILL**

**Kleinfelder
4815 List Drive, Suite 115
Colorado Springs, CO 80919**

September 14, 2010

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**UNAUTHORIZED USE OF THIS DOCUMENT IS STRICTLY PROHIBITED BY ANYONE OTHER THAN THE CLIENT FOR THE
SPECIFIC PROJECT.**

RESULTS

Landfill Name or Identifier: Gregory Canyon Landfill

Please choose a third unit of measure to represent all of the emission rates below. User-Specified Unit: av ft^3/min

Closure Year (with 80-year time) = 2033 44 % by volume

Table with columns: Year, Waste Accepted (Short tons/year), Waste in-Place (short tons), Total landfill gas (Mg/year), Methane (Mg/year), Carbon dioxide (Mg/year), and NMOC (Mg/year). Rows represent years from 2012 to 2090.

EXHIBIT C

RICHARD R. HORNER, PH.D.

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January 3, 2011

Mr. Mike Porter, Engineering Geologist
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

Dear Mr. Porter:

I am providing this letter for your consideration on behalf of RiverWatch and the Pala Band of Mission Indians to address their concerns with the impacts to water quality that would occur if the proposed Gregory Canyon Landfill is approved as presently planned. Specifically, I explain why the project proponent has failed to model stormwater flows in the canyon properly because of the use of out-dated and poorly applied modeling techniques. I also explain why the proposed stormwater management facilities are inadequate to control stormwater flows and sediment transport during the 30-year period of operation and the 30 years of post-closure.

In forming my opinions I reviewed and assessed a number of documents submitted to describe the project overall and its stormwater management features, including but not limited to:

Updated Evaluation of Hydrogeomorphology and Beneficial Uses at Gregory Canyon (Updated Evaluation Report);
The Hydrogeologic Map of the Gregory Canyon area;
Joint Technical Document, Volumes 1 and 2, Gregory Canyon Landfill, San Diego County, California (JTD);
Revised Final Environmental Impact Report (FEIR) and Technical Appendices A Through D;
U.S. Army Corps of Engineers' Jurisdictional Delineation (ACOE Delineation); and
Aerial photographs of the Gregory Canyon area.

In evaluating the Gregory Canyon Landfill documents I applied the experience of my 34 years of work in the stormwater management field and 11 additional years of engineering practice. During this period I have performed research, taught, and offered consulting services on all aspects of the subject, including investigating the sources of pollutants and other causes of aquatic ecological damage, impacts on organisms in waters receiving urban stormwater drainage, and the full range of methods of avoiding or reducing these impacts. The attachment to this letter presents a more complete description of my background and experience. My full *curriculum vitae* are available upon request.

THE PROJECT PROPONENT USED OUT-DATED AND POORLY APPLIED MODELING TECHNIQUES

Overall, the conclusion that stormwater can be managed to eliminate negative impacts to the San Luis Rey River and its beneficial uses is predicated on the use of methods that are inadequate to support the conclusions reached or to serve as a basis for design decisions for such an important project. Furthermore, the methods were often applied in a less than rigorous and sometimes inconsistent fashion, with inadequate input data and insufficient detail and explanation for an independent analyst to evaluate conclusions and design specifications. Accordingly, the Regional Board should require a reanalysis of the site's hydrology, employing methods I outline in this letter; reconsideration of the stormwater management plan; redesign of the conveyance and treatment facilities as needed; and thorough demonstration that the resulting system will allay the many concerns I express.

Inadequacy of the Selected Hydrologic Models

The most fundamental shortcoming is the proponent's reliance on hydrologic models of very limited capability and the failure even to apply these models in the most effective way. Modeling was based on the Rational Method and the HEC-1 model, models that have serious limitations, in different applications over the course of project development as reported in the JTD and Updated Evaluation Report. Because of those limitations, the hydrologic modeling field has begun using the superior "continuous hydrograph simulation" method, a technique also developed for the San Diego region. San Diego County and its municipal stormwater committees have a beta version of a continuous simulation model, based on the U.S. Environmental Protection Agency's (USEPA's) Hydrologic Simulation Program—FORTRAN (HSPF), under testing to be completed by January 14, 2011, prior to release into regular practice.

The Rational Method amounts to an equation with which a dependent variable (flow) is computed as the product of three independent variables that are supposed to represent all of the physical processes that determine how much rainfall in a storm event is converted to surface runoff and at what peak rate it flows. It has been used in essentially the same form since its introduction in 1851, which is equivalent to communicating with Morse's telegraph (invented in 1844) in the internet age. The extremely simplistic Rational Method is severely limited in representing actual hydrologic events and magnitudes for a multitude of reasons and has no standing whatsoever among well informed hydrology professionals.

The HEC-1 model incorporates some basic hydrologic processes, like rainfall interception and depression storage, and thus avoids some of the limitations of the Rational Method. However, it still is restricted to predicting runoff from one precipitation event at a time and is better suited to watersheds larger than Gregory Canyon. Results produced by a single-event model, like both the Rational Method and HEC-1, are a function of the event or events selected, often a specified return frequency (e.g., 10 years) and duration (e.g., 6 hours). Such a selection always has some degree, and often a high degree, of arbitrariness. These models are usually run for only one or a few events, a practice followed in the Gregory Canyon analysis, and thus give a poor idea of the

runoff outcome of the numerous and highly variable natural geophysiographic conditions responsible for runoff generation.

A continuous simulation model overcomes the major disadvantages of these event-based models and permits an examination of runoff produced by all of the storms in a precipitation record. It thus incorporates a full range of site-specific variables, such as total quantity of rainfall, intensity, antecedent dry period, repetitiveness of storms in a short period of time, etc. This capability allows identification of the critical conditions that must be taken into account in assessing potential impacts and in designing appropriate management facilities. These advantages have important implications for the effectiveness of facilities in protecting the aquatic ecosystems and beneficial uses of waters receiving stormwater discharges. Whereas single-event models predict only the runoff from the rather arbitrarily selected storm frequency and duration, continuous simulations provide runoff estimates for a host of other possible conditions, such as relatively intense storms (high rainfall per unit time) and repeated storms in a short period of time (e.g., three storms, each of one to several inches, within a week). A stormwater basin designed correctly based on a peak rate and volume of flow from a given storm might still lack capacity under conditions like those described, and consequently fail to protect the receiving water from the impacts of high and prolonged flows and pollutant loadings delivered by the discharges in excess of those expected based on the inferior model.

Jurisdictions like the state of Washington and many of its municipalities, some years ago, and Contra Costa County, California, more recently, moved to computerized, continuous simulation hydrologic models as the standard of practice. These jurisdictions made the foundation model, usually the USEPA's HSPF, convenient to use by developing "runoff files" encapsulating input data appropriate for the area. The San Diego region has recognized the merits of this superior approach in its movement to develop such a model for the area, which as stated above is imminently ready for full use. The Regional Board should require the proponent to reanalyze the Gregory Canyon Landfill project using an HSPF-based model, either the regional runoff files version or the base HSPF model with input data supplied by the analyst.

Poor Application of the Models Selected

While the models selected were inadequate, as I pointed out above, the user failed even to take maximum advantage of their limited capabilities. Specifically, the analysis was performed with insufficient precipitation and soils data.

Precipitation patterns vary substantially in an area with considerable topographic variation like Gregory Canyon. Modeling of runoff in response to rainfall events benefits greatly from the use of on-site data. In this case, even though there was every opportunity to do so, the project proponent did not install a rain gauge on the site at the outset of planning for the project, diminishing the ability to make reliable hydrologic forecasts.

Pages 2-6 and 2-7 of the Updated Evaluation Report indicate that an on-site rain gauge had been installed by January 2010. While very tardy, this equipment could be useful in upgrading the hydrologic forecasts. Assuming that it continued to operate through the year, it would have

recorded one of the potentially critical meteorologic events instrumental in determining existing flow patterns in Gregory Canyon and the San Luis Rey River, predicting future flows after the project's inception, and designing the stormwater facilities to manage these flows for the protection of the natural water resources. The Fallbrook gauge recorded approximately 9 inches of rain from December 18 to 22, 2010. This is exactly the type of rainfall pattern that must be taken into account in designing stormwater management infrastructure, and that is missed by single-event models but captured by continuous simulations.

In lieu of an on-site gauge, and to provide a long-term record, data could be used from three rain gauges located in the general vicinity of Gregory Canyon, which exhibit substantial variability. Instead of taking advantage of all three gauges, the proponent used data from only one (Fallbrook according to the Updated Evaluation Report). An approach yielding better hydrologic predictions is to use data from all available gauges in the vicinity and standard techniques to interpolate the rainfall at the site from the multiple records. I encourage the Regional Board to require the proponent to reanalyze the project's hydrology with a computerized, continuous simulation hydrologic model using the full precipitation record from the three vicinity gauges, supplemented by the short-term record from the on-site gauge.¹

In addition, the available documents indicate that the proponent collected limited on-site soils data (at 19 locations over a depth range of 0-7 ft, with percolation testing at 10 according to the FEIR) and relied heavily on the U.S. Department of Agriculture (USDA) soil survey to identify on-site soils. In my experience, the USDA soil survey is often incorrect at the site-specific level, even if properly representing the broader-scale soil matrix. Another issue is potential debris flow from the adjacent mountainsides into the project area and its runoff conveyances and desilting and infiltration basins. While the FEIR briefly addressed this issue and stated that a gabion diversion structure "... may [emphasis added] need to be installed ..." in Basin 1, it did not quantify the sediment loading expected to occur under actual storm conditions. Without that analysis, it was impossible to consider the implications of debris flow sediment loading for designing the site and its stormwater conveyances and basins and subsequently maintaining those features.

It is essential, in my opinion, that the proponent thoroughly characterize the soils of all portions of the site that would flow through the proposed perimeter channels, desilting basins, and infiltration basins. This characterization should include areally extensive soil coring to some depth below the surface and the beds of the proposed stormwater management basins, analysis of textural properties in the core samples, percolation testing to determine infiltration rates, and

¹ I note that there is inconsistency in the average rainfall data employed in different portions of the site analysis. Whereas hydrologic modeling to estimate runoff and to design conveyance and treatment facilities was based on an average annual rainfall of 14.1 inches, the FEIR used an average annual rainfall amount of 25 inches as the basis for estimating the groundwater recharge potential of the fractured bedrock system, based on rainfall amounts at Lake Henshaw. As it is impossible for there to be two different average annual rainfall amounts at a single site, let alone these two wildly different amounts, the Regional Board must require that the proponent choose one or the other for all purposes. That said, the average annual rainfall at a location somewhat remote from the site is not the key meteorological statistic for analyzing runoff generation and designing stormwater management facilities. Instead, these analyses should be performed with a continuous simulation model equipped with precipitation input from the best available, representative network of rain gauges.

identification of any areas where seasonal high water table could affect runoff production and stormwater management facility design and operation. The resulting data should be employed in the improved modeling effort I propose.

Soils and these related hydrogeologic conditions can vary extensively within short distances. There is no single numerical rule governing the number or spacing of monitoring locations. A strategy would be to scatter pits throughout the entire property and then replicate them in order to narrow spacings. Areas for proposed infiltration basins should be especially well covered (one test site for each 5000 ft² of basin surface is recommended by the Stormwater Management Manual for Western Washington). If replication should show little variability in some locations but more in others, it would then be reasonable to concentrate the last set of tests in the areas of greater variability. This strategy is consistent with the advice in what, in my opinion, is one of the better stormwater manuals, issued by the City of Santa Barbara:

The number of test pits required depends largely on the specific site and the proposed development plan. Additional tests should be conducted if local conditions indicate significant variability in soil types, geology, water table levels, bedrock, topography, etc. Similarly, uniform site conditions may indicate that fewer test pits are required.

Unreliability of Modeling Results

The two models used by the proponent gave widely varying runoff quantity estimates. For example, in modeling Gregory Canyon flow rates the Updated Evaluation Report estimated the 10-year, 24-hour peak flow rate at 8 cubic ft/second (cfs) by one method and 31 cfs by another, and the 50-year, 24-hour rate at 105 or 423 cfs. In this source the 10-year, 6-hour peak rate is given as 5 cfs. However, the ACOE Delineation estimated the rate for this latter frequency and duration at a much higher 343.5 cfs. In modeling for the desilting basins, the alternative models yielded extreme variability. As shown in the Stormwater Management Plan (JTD, Volume II-B, Appendix I), post-project flows associated with the 10-year, 24-hour design condition were estimated as summarized in Table 1. Even with variations of an order of magnitude for volumes, and higher yet for flow rates, the proponent did not seek to reconcile the differences in any way. While it is not clear which runoff estimate was used to design the stormwater management facilities, it appears that the lower flow estimates were used, at least for the infiltration basins.

Table 1. Flow Rates and Volumes Estimated by the Proponent for Desilting Basins Using Two Hydrologic Models

	East Basin	West Basin
Flow rate by Rational Method (cfs)	290	210
Flow rate by HEC-1 (cfs)	11	3
Volume by Rational Method (acre-ft)	16.3	15.8
Volume by HEC-1 (acre-ft)	2.5	1.2

Given these broad deviations, I assert that it is irresponsible to proceed to the design phase at all. Instead, a third model with more advanced capabilities and better input data must be used to obtain more assurance as to what runoff rates and volumes actually can be expected.

THE PROPONENT IMPROPERLY USED PAST OBSERVATIONS TO MAKE FUTURE PREDICTIONS

Forecasts of future discharge patterns are compromised by drawing upon past observations in the existing Gregory Canyon system, whereas the contributing catchments and the discharge conveyances would change markedly if the project goes forward.

Modified Land Cover

Land cover in the canyon now is native soils and native with some invasive vegetation, with little present-day or recent human disturbance. This cover will be extensively disturbed through clearing, grading, and covering the waste with soil from the borrow areas.

The JTD states that a "disturbed" area will be declared "undisturbed" when a specified degree of vegetation cover returns. However, the document cites two different revegetation levels, 20 and 70 percent, as the criterion for the assignment of "undisturbed" status. The Revised Universal Soil Loss Equation (RUSLE) predicts that annual soil loss at 20 percent cover would be approximately 6.7 times as great as with the 70 percent cover, everything else being equal. But even the 70 percent level itself is not highly protective. The RUSLE prediction of soil loss at 70 percent is about six (6) times as great as at 90 percent, again with equality in all other factors. Comparing 90 and 20 percent, the difference would be approximately 40 times as much annual soil loss with the lesser cover. Incompletely stabilized areas would not only result in higher sediment loadings to the flow but would also yield more runoff, at higher velocities, than from truly undisturbed or fully restabilized lands.

The runoff from these "undisturbed" areas is proposed to be collected in the perimeter drainage channels and to discharge to the infiltration areas, bypassing the desilting basins. In addition to lands disturbed in the landfill operation and then restabilized, the "undisturbed" areas will comprise mountainsides draining onto the property along with locations on the site outside the operational area. However, there is no analysis of how the infiltration basins will be able to manage the flows from all of these areas, especially for larger storm events, or whether they can assimilate the sediment loads and still function as claimed.

Sediments entering infiltration basins have a high potential to clog the beds over time and reduce the amount of water that will actually infiltrate. Clogging is a common cause of failure of infiltration facilities, and that vulnerability makes it essential to protect the basins from heightened sediment inputs. The best protection for the basins is strong source control to prevent sediment release to the flows in the first place. Disturbed areas should be required to attain at least 90 percent cover, as verified by a qualified botanist or horticultural professional, to be declared "undisturbed" and allowed to flow to infiltration basins. While California's construction stormwater general permit allows permit termination with establishment of 70

percent final cover, among other conditions, the Gregory Canyon landfill is not a short-term construction site and should be held to a higher standard.

Still, sediment loading to the infiltration basins from debris flows off the mountainsides would remain a concern. The proponent should be required to analyze the potential problem and alternative solutions, including source controls; diversion of debris flows away from the perimeter channels and infiltration basins; interception in debris basins of fully adequate design capacity ahead of infiltration areas; and combinations of these strategies.

Modified Conveyance Systems

The Updated Evaluation Report is incorrect in asserting that runoff from the canyon would be the same after construction because "Development of the landfill will result in creation of similar channels around both sides of the landfill to direct occasional concentrated flows past the landfill." As described in the JTD, the proposed perimeter channels will have a regular trapezoidal geometry and concrete pavement. That design would eliminate or reduce the effect of a number of phenomena that occur when water flows in the canyon today. For example, once collected in the channels, the water would no longer infiltrate into the subsurface in the canyon, eliminating recharge to the bedrock system and increasing the volume of the flow being directed to the river. Flows also would increase because there no longer would be water uptake into vegetative tissues for storage and transpiration to the atmosphere. Also, channel "roughness" created by irregular topography, rocks, and vegetation would no longer slow the flow of the water or result in the deposition of sediments. The result of all these factors would be higher runoff flow rates and total volumes, swifter flow velocities, and greater downstream delivery of sediments than exist now.

THE BASES FOR THE STORMWATER FACILITY SPECIFICATIONS IS UNCLEAR, BUT THE DESIGNS APPEAR TO BE INADEQUATE

Stormwater Collection and Conveyance System

The JTD claims that the perimeter channels will collect runoff from all "undisturbed" areas. However, after a careful reading, I could not determine how this system will collect and direct water into the perimeter channels. For example, there is no explanation of the elevations of the undisturbed areas within the proposed landfill footprint relative to the channels and how water from some of those areas, which appear to lie at lower elevations, would enter the channels. There also is no description of: (1) where and how water would sheet flow into the channels, (2) where and how concentrated flows in specific drainages would enter the channels, and (3) how these issues were addressed in designing the system and how they will be addressed in the construction and operation of the channels. This lack of clarity on important details raises serious questions as to whether the system as proposed would even work.

Infiltration Basins

Likewise, the methodology used to site and design the infiltration basins is not provided. Infiltration basins are customarily designed relative to a runoff quantity from the hydrologic model output, the soil's infiltration rate as established by on-site testing, and a specified maximum drain time. It is not clear that any of these factors were taken into account or could be with the information assembled. As pointed out earlier, the hydrologic models employed are inadequate and their output is unreliable. Also, there is no evidence that basin site soil types or their infiltration rates were identified. These crucial omissions pose great risk of failure for the project's key stormwater management feature, the infiltration basins.

To gain some insight into the possible adequacy of the infiltration basin sizes, I assumed a favorable condition for the smaller (1-acre) eastern basin, alluvial soil with an infiltration rate of 2.4 inches/hour, the maximum rate commonly recommended in stormwater management to protect groundwater quality, unless pretreatment is employed. With an additional assumption of a maximum 72-hour drain time, I estimated that the eastern basin could infiltrate up to approximately 5.4 acre-ft of runoff. As Table 1 above shows the discharge from the upstream east desilting basin alone was estimated by the proponent to be as high as 16.3 acre-ft. Additional flow would enter from the perimeter channel on that side of the project. This analysis raises serious questions about the adequacy of the infiltration basins.

Desilting Basins

Even though the desilting basins will only treat runoff from the "disturbed" areas, they still are inadequate to prevent sediment transport in their discharges. Again, the design of these basins suffers from the same problem as the infiltration basins, in that they rely on inadequate hydrologic modeling. Furthermore, their design is insufficient for facilities operating over a 60-year or longer period. The 10-year frequency design storm, while commonly used to design construction-site settling ponds, is not adequate for facilities that will operate for years. Construction generally finishes in a year or two, making the occurrence of the 10-year frequency storm less rather than more likely. In contrast, the proposed Gregory Canyon desilting basins would operate for 60 or more years, meaning that the basins would most likely experience a 10-year frequency storm multiple times, as well as larger events of less frequent occurrence (e.g., 25, 50, and possibly 100-year events). With the proposed 10-year frequency design basis, runoff from those larger storms would receive inadequate treatment.

The desilting basins as designed are sized to target the settling of particles in the medium range of the silt size fraction, or larger, at the design flow. Even at that flow, finer silts and all particles in the clay fraction would discharge before settling. At larger than design flows, some of the medium silts and larger particles would also escape. Since there are only spotty on-site soils data, there is no firm basis for setting a particle size capture target.

I analyzed the adequacy of the basins for their stated purpose using a simplified rule commonly applied for designing short-term construction phase desilting basins. At 1.8 acres in area, the

east desilting basin could capture the medium silt particles in a flow of approximately 75 cubic ft/second (cfs), whereas the Rational Method prediction cited in the Stormwater Management Plan is 290 cfs flowing from the catchment contributing to this basin during the 10-year, 6-hour rainfall. The equivalent figures for the 3.7-acre west basin are a capability of treating a flow of about 150 cfs, with 210 cfs predicted by the Rational Method.

The desilting basins thus are too small even judged with respect to the inadequate design event criterion and improper modeling techniques. Even if the underlying rationale was more stringent and the basins were properly designed in relation to that rationale, they would still not be adequate in attenuating sediment transport. The most fundamental reason for that opinion is that size of the basins must increase greatly to capture relatively small particles, and small particles often make up the largest fraction of solids. Of course, without much site-specific soils data, no one can objectively and quantitatively evaluate this issue; but it is highly likely that small particles are an important consideration at this site. It is virtually impossible to design a basin to capture sediment toward or into the clay range without either making it very large or employing chemical treatment, discussed further below. This unfortunate truth about settling basins points out the primacy of source control as a strategy to prevent mobilizing sediments in the first place. A stabilization target of 20 percent cover, or even 70 percent, is not a prescription for effective source control. The sediments escaping the desilting basins will flow to the infiltration basins where, as pointed out earlier, they risk clogging the surface soils and causing the infiltration basins to fail.

Chemical treatment of sediment-bearing stormwater has been perfected in the construction industry in the Pacific Northwest and has begun spreading out to other regions. Injection with non-toxic chemicals like chitosan or another polymer followed by settling has been shown to yield impressive reductions of suspended sediments, turbidity, phosphorus, and other pollutants. The proponent should be required to analyze this method of desilting, and to adopt it and design adequate facilities to implement it, or explain fully why it is not being adopted.

PROBABLE CONSEQUENCES OF DESIGN INADEQUACIES

The core of Gregory Canyon landfill's stormwater management plan is directing runoff from "disturbed" areas to desilting basins and then to infiltration basins, while flows from "undisturbed" areas bypass the desilting basins and pass straight to infiltration. The flow estimates for both of these sources and pathways are suspect because of the use of inferior hydrologic models, inadequate input data for the chosen models, and a faulty presumption that concrete channels will create flow patterns similar to those in the existing natural drainage ways. Even accepting the flow estimates, I have concluded that the desilting and infiltration basins are too small to serve their intended functions.

Both the "disturbed" and "undisturbed" areas will contribute sediments to the runoff flows. Sediments from "disturbed" areas will not be effectively captured by the under-designed desilting basins, and much of that sediment loading will flow on to the infiltration basins. "Undisturbed" areas will yield approximately six times as much sediment over time when stabilized to the proposed 70 percent cover as compared to a more stringent 90 percent

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requirement. This sediment will also reach the infiltration basins. Mountainside debris flows will be intercepted by the perimeter channels and flow unimpeded to the infiltration basins. All of these sediment sources risk clogging the infiltration basins, preventing them from infiltrating water as expected and allowing runoff and sediments to discharge on the surface.

As proposed, the east and west infiltration basin discharge points are in the San Luis Rey River floodplain, with the smaller, eastern infiltration area itself being within the 100-year floodplain and close to the river channel, especially in high flow periods. The project documents do not provide sufficient information for me to determine if, when, and under what circumstances the site flow and sediments would reach the river's channel, what quantities would be involved, and the resulting effects on the designated beneficial uses. However, with insufficient basin sizes and the high potential to clog the infiltration basins, I have no doubt that the probability of flow and sediments originating from the landfill site and reaching the active channel would be far higher after the project's inception than at present. I believe it is incumbent on the proponent to correct the major flaws in the analysis performed to date, improve the management plan, and make a full demonstration to alleviate this concern.

I would be pleased to answer any questions you may have and invite you to contact me if you wish.

Sincerely,



Richard R. Horner

Attachment: Background and Experience; Richard R. Horner, Ph.D.

BACKGROUND AND EXPERIENCE

RICHARD R. HORNER, PH.D.

I have 34 years of experience in the urban stormwater management field and 11 additional years of engineering practice. During this period I have performed research, taught, and offered consulting services on all aspects of the subject, including investigating the sources of pollutants and other causes of aquatic ecological damage, impacts on organisms in waters receiving urban stormwater drainage, and the full range of methods of avoiding or reducing these impacts.

I received a Ph.D. in Civil and Environmental Engineering from the University of Washington in 1978, following two Mechanical Engineering degrees from the University of Pennsylvania. Although my degrees are all in engineering, I have had substantial course work and practical experience in aquatic biology and chemistry. For 12 years beginning in 1981 I was a full-time research professor in the University of Washington's Department of Civil and Environmental Engineering. I now serve half time in that position and have adjunct appointments in two additional departments (Landscape Architecture and the College of Forest Resources' Center for Urban Horticulture). While my research and teaching continue at a somewhat reduced level, I spend the remainder of my time in private consulting through a sole proprietorship. My full credentials are available upon request.

I have conducted numerous research investigations and consulting projects involving all aspects of stormwater management. Serving as a principal or co-principal investigator on more than 40 research studies, my work has produced three books, approximately 30 papers in the peer-reviewed literature, and over 20 reviewed papers in conference proceedings. I have also authored or co-authored more than 80 scientific or technical reports. In addition to graduate and undergraduate teaching, I have taught many continuing education short courses to professionals in practice. My consulting clients include federal, state, and local government agencies; citizens' environmental groups; and private firms that work for these entities, primarily on the West Coast of the United States and Canada but in some instances elsewhere in the nation.

Over an 18-year period I spent a major share of my time as the principal investigator on two extended research projects concerning the ecological responses of freshwater resources to urban conditions and the urbanization process. I led an interdisciplinary team for 11 years in studying the effects of human activities on freshwater wetlands of the Puget Sound lowlands. This work led to a comprehensive set of management guidelines to reduce negative effects and a published book detailing the study and its results. The second effort, extending 10 years, involved an analogous investigation of human effects on Puget Sound's salmon spawning and rearing streams. These two research programs had broad sponsorship, including the U.S. Environmental Protection Agency, the Washington Department of Ecology, and a number of local governments.

I have helped to develop stormwater management programs in Washington State, California, and British Columbia and studied such programs around the nation. I was one of four principal participants in a U.S. Environmental Protection Agency-sponsored assessment of 32 state, regional, and local programs spread among 14 states in arid, semi-arid, and humid areas of the West and Southwest, as well as the Midwest, Northeast, and Southeast. This evaluation led to

the 1997 publication of "Institutional Aspects of Urban Runoff Management: A Guide for Program Development and Implementation" (subtitled "A Comprehensive Review of the Institutional Framework of Successful Urban Runoff Management Programs").

My background includes 15 years of work in Southern California, where I have been a federal court-appointed overseer of stormwater program development and implementation at the city and county level and for two Caltrans districts. I was directly involved in the process of developing the 13 volumes of Los Angeles County's Stormwater Program Implementation Manual, working under the terms of a settlement agreement in federal court as the plaintiffs' technical representative. My role was to provide quality-control review of multiple drafts of each volume and contribute to bringing the program and all of its elements to an adequate level. I have also evaluated the stormwater programs in San Diego, Orange, Riverside, San Bernardino, Ventura, Santa Barbara, San Luis Obispo, and Monterey Counties, as well as a regional program for the San Francisco Bay Area. At the recommendation of San Diego Baykeeper, I have been a consultant on stormwater issues to the City of San Diego, the San Diego Unified Port District, and the San Diego County Regional Airport Authority.

I was a member of the National Academy of Sciences-National Research Council (NAS-NRC) committee on Reducing Stormwater Discharge Contributions to Water Pollution. NAS-NRC committees bring together experts to address broad national issues and give unbiased advice to the federal government. The present panel was the first ever to be appointed on the subject of stormwater. Its broad goals were to understand better the links between stormwater discharges and impacts on water resources, to assess the state of the science of stormwater management, and to apply the findings to make policy recommendations to the U.S. Environmental Protection Agency relative to municipal, industrial, and construction stormwater permitting. The committee issued its final report in October 2008.

Gregory Canyon Landfill Initiative
(Carryover Item From 7/26/94, Agenda No. 30)

FISCAL IMPACT:

If approved, this recommendation will result in no current cost, no annual cost and will require the addition of no staff years. Approval of this proposal will have no impact on the County General Fund.

RECOMMENDATION:

CHIEF ADMINISTRATIVE OFFICER:

- 1) Note and file this report.
 - 2) If your Board desires:
 - A. Designate up to two members of the Board of Supervisors, together with the Chief Administrative Officer, to prepare a draft ballot argument (and any rebuttal) in support of or in opposition to the proposed initiative.
 - B. Determine that the Board of Supervisors shall file a ballot argument (and any rebuttal) on its own behalf in support of or in opposition to the proposed initiative, and direct that the draft of the argument/rebuttal be presented to the Board for approval prior to the pertinent election deadlines;
- OR
- C. Authorize up to members of the Board to file a ballot argument (and any rebuttal) on behalf of the Board in support of or in opposition to the proposed initiative, and authorize the designated Board member(s) to determine which other voters or associations may join in signing the argument/rebuttal.

ACTION:

Taking action to oppose the ballot initiative on the Gregory Canyon Landfill issue, determined to ask the San Diego County Water Authority and/or the Rainbow Water District to join in signing a ballot argument against the initiative, and authorized Supervisor MacDonald to jointly sign the argument on behalf of the Board; directed Chief Administrative Officer to prepare a complete fiscal analysis, to be included in the ballot information, so the taxpayers are informed as to the total potential costs; and authorized the Chairwoman to send a letter to each of the San Diego Cities, informing them of the Board's action for their consideration.

(5x3: 1235 Aye; 4 Absent)



COUNTY OF SAN DIEGO
CHIEF ADMINISTRATIVE OFFICE
AGENDA ITEM

BOARD OF SUPERVISORS

Dianne Jacob
Pete Slater
Leon L. Williams
John Macdonald
Brian P. Ellbrey

DATE: August 9, 1994

TO: Board of Supervisors
San Diego Solid Waste Management Authority

SUBJECT: Gregory Canyon Landfill Initiative (All Districts)

SUMMARY:

Reference

On July 26, 1994 (30), the Board voted to place the Gregory Canyon Landfill and Recycling Center Initiative on the November 8, 1994 General Election Ballot as required by law. This letter contains Staff's analysis of the Initiative.

Recommendation

CHIEF ADMINISTRATIVE OFFICER:

1. Note and file this report
 2. If your Board desires:
 - A. Designate up to two (2) members of the Board of Supervisors, together with the Chief Administrative Officer, to prepare a draft ballot argument (and any rebuttal) in support of or in opposition to the proposed initiative.
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- C. Authorize up to two members of the Board to file a ballot argument (and any rebuttal) on behalf of the Board in support of or in opposition to the proposed initiative, and authorize the designated Board member(s) to determine which other voters or associations may join in signing the argument/rebuttal.

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AUG 9 1994

SUBJECT: Gregory Canyon Landfill Initiative (All Districts)

Fiscal Impact

If approved, this recommendation will result in no current cost, no annual cost and will require the addition of no staff years. Approval of this proposal will have no impact on the County General Fund.

BACKGROUND:

I. INTRODUCTION

On July 26, 1994 (30), the Board of Supervisors voted to place the Gregory Canyon landfill Initiative on the November 8, 1994 General Election ballot as required by law. The Initiative, if passed by the voters, would amend the County Zoning Ordinance and would direct that all other County ordinances, rules, and regulations be amended to allow the construction and operation, by right, of a landfill at the Gregory Canyon site by Servcon-San Marcos. A major use permit would not be required.

A landfill at the Gregory Canyon site has the potential to cause significant impacts to residents living in the vicinity of the landfill. The passage of this Initiative would eliminate all County authority to minimize those impacts by regulating landfill operations.

II. SUMMARY OF INITIATIVE

Following is a summary of the significant portions of the Initiative and, when applicable, each portion is followed by staff comments. The Section numbers, titles and paragraph identifications are taken from the Initiative.

SECTION 2. FINDING AND PURPOSE

F. The Gregory Canyon site was selected as one of three preferred landfill sites by the County of San Diego based upon a 1987 study which evaluated 168 alternative sites in northern San Diego County covering a study area of 1150 square miles. Subsequently, one of these sites, Blue Canyon, was dropped by the County of San Diego and two new landfill sites have been added. The Gregory Canyon site is now one of four finalist sites.

Staff Comments

The County has been considering three landfill sites, not four as indicated in the Initiative, for North County (Merriam Mountain South, Aspen Road, and Gregory Canyon). However in August 1993 the

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Board directed staff to defer any further work on North County landfill siting.

To decide which landfill would have the least environmental impact, an environmental impact analysis would be needed for all three sites. A 1990 Draft Environmental Impact Report (DEIR) supplied some environmental impact information for Aspen Road and Gregory Canyon, however, little environmental information is available about the Merriam Mountain site.

Based on the information available, there are several obstacles to developing the Gregory Canyon site. These are the widening of SR76, the relocation of transmission lines, proximity to a known cultural resource site (Med cine Rock), close proximity to a river, least Bells vireo habitat, and Coastal sage scrub. Although any one of these obstacles could be overcome, the cumulative impact of costs and time could render the site unfeasible as a landfill.

The draft design in the DEIR for the Gregory Canyon Landfill estimated that the landfill would have approximately 15,000,000 tons of capacity. Excluding Miramar, the five landfills in San Diego County together have approximately 35,000,000 tons of capacity. Thus, if the initiative is approved and all appropriate permits are secured, this landfill would increase the landfill capacity in the County by 43 percent.

In the latest fiscal year, 1993/94, San Diego Solid Waste Management Authority members disposed of 675,000 tons, including waste sent to system landfills from the City of San Diego. (Approximately 256,000 tons were generated in North County). Thus, the System currently has about 50 years of capacity available for its members at current generation rates. If the Gregory Canyon landfill were approved, the Authority could choose to dispose of its North County solid waste at the Gregory Canyon landfill, thus preserving capacity at its own landfills.

For cities that are not members of the Authority, the Gregory Canyon landfill would provide a disposal alternative inside the County to those already being considered outside the County. If non-member cities decide to use Authority landfills or ship solid waste to sites outside the County, there may not be a need for a new landfill at Gregory Canyon. Most likely, the need for a landfill at Gregory Canyon will depend directly on the prices charged for transfer, hauling and disposal at competing landfills.

G. In 1990 the County of San Diego prepared an environmental impact report evaluating the environmental impacts of operating a landfill at the Gregory Canyon site. This environmental impact report concluded that a landfill could be

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operated at the Gregory Canyon site consistent with all federal and state regulations governing landfill operations.

Staff Comments

Contrary to the assertion made in this Section of the Initiative, the 1990 DEIR did not "conclude that a landfill could be operated at the Gregory Canyon site consistent with all federal and state regulations governing landfill operation." Because the DEIR for the construction and operation of the landfill was not certified and because no permits from the various regulatory agencies were issued, it is not possible to conclude that a landfill at this site would be consistent with all federal and state regulations. The 1990 DEIR did note that additional environmental impact analysis was needed to address the site specific effects of the off-site improvements necessary to support landfill development and operation. Examples of off-site improvements were the widening of SR 76 and the relocation of SDG&E's transmission lines.

The DEIR that was prepared for this site in 1990 was a part of General Plan Amendment (GPA) 90-03 which evaluated a proposed change in General Plan land use designation to (22) Public/Semi-Public, with a Solid Waste Facility (SWF) designator. The DEIR was never certified and the GPA was never approved. Moreover, since there was no Major Use Permit application at that time, the DEIR did not evaluate the specific design and operating characteristics of a landfill at this location.

The 1990 GPA DEIR made an evaluation as to the significance of environmental impacts, and concluded that a number of impacts were significant and not mitigable. This means that a landfill could not have been approved at this location without specific overriding findings being made by the lead agency. The issues identified with significant and not mitigable environmental impacts included: 1) Land Use and Community Character; 2) Noise; 3) Air Quality; 4) Biology; 5) Cultural Resources; 6) Native American Resources; 7) Visual Resources; 8) Growth Inducement; and, 9) Cumulative Impacts. There were no measures identified in the DEIR that would have mitigated impacts to an insignificant level.

- J. The voters hereby find and determine that the project will be compatible with other uses in the area and the County's general plan for uses in the area upon implementation of the mitigation measure required by this measure.

Staff Comments

This section of the Initiative implies that the voters of San Diego County have examined the evidence and the information describing

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the uses in the area, the General Plan in the area, and the environmental impacts, and found it to be compatible. However, this determination cannot be made if there is no discussion in the Initiative regarding how the significant adverse impacts identified in the 1990 DEIR are to be mitigated (i.e. community character, noise, air quality, biology, cultural resource, Native American resources, visual resources, growth inducement, and cumulative impacts). Without enumeration of specific mitigation measures, it is logically impossible to find the landfill compatible with the surrounding uses. In order to be accurate, the Initiative should state that the project would not be compatible with the surrounding uses and that a number of impacts are not mitigable, but that the socio-economic benefits of the project would override the impacts.

SECTION 3. DESCRIPTION OF THE PROJECT

The Gregory Canyon landfill and Recycling Collection Center Initiative, if passed by the voters, would amend the County General Plan, Zoning Ordinance and other ordinances and policies to authorize, by right, the construction and operation of a landfill at the Gregory Canyon site by Servcon-San Marcos.

The landfill and collection center would occupy about 270 acres of the Gregory Canyon site. The remaining 1413 acres of the site would be dedicated as permanent open space either to the County, the Pala Band of Mission Indians, another public agency, or a Resource Conservation Group for long-term preservation of sensitive habitat and species.

An access route and bridge from SR76 to the site would be constructed. SR76 on either side of the new access road would be widened and realigned to improve the sight distance and facilitate truck movements.

The SDG&E transmission lines crossing the site would be relocated.

Staff Comments

Although the Initiative specifies that the site is 1683 acres, it does not specify the exact land parcels that would be reclassified in the General Plan and rezoned. According to County records, Waste Management Incorporated (WMI) owns about 1332 acres in contiguous parcels in Gregory Canyon. Staff presumes that all of WMI's property is included in the Initiative; however, the ownership and location of the remaining 351 acres remains unknown.

SUBJECT: Gregory Canyon Landfill Initiative (All Districts)

SECTION 4. PERMITS

- A. The Project shall complete any additional environmental documents required by federal or state law to secure the remaining permits and approvals.

Staff Comments

While precluding environmental review at the local land use level, passage of the Initiative does not change the CEQA requirement that an appropriate environmental document be completed and certified before the applicant can acquire any of the needed state permits, such as a Solid Waste Facility Permit from the California Integrated Waste Management Board, or Waste Discharge Requirements from the Regional Water Quality Control Board. An environmental document does not need to be prepared nor certified prior to the election on the Initiative. However, an environmental document does need to be prepared and certified by a Lead Agency prior to issuance of any operating permits for the landfill, should the Initiative be approved by the voters of the County of San Diego. It is not presently known which public agency would be the Lead Agency.

The applicant would need to complete an EIR prior to obtaining any permits for a solid waste facility if the Initiative is approved by the voters. Because the applicant would not need a Major Use Permit from the County, the County would not be the Lead Agency for certification of the EIR. The Lead Agency would be the first agency from whom the applicant requests a permit. This would most likely be the Regional Water Quality Control Board (RWQCB), or the Local Enforcement Agency (acting for the California Integrated Waste Management Board). Neither the RWQCB or the Local Enforcement Agency routinely acts as a lead agency for landfill environmental documentation purposes.

Environmental issues that would need to be analyzed in an EIR for this site include the following: 1) Geology and Soils; 2) Seismic Safety; 3) Water Resources; 4) Land Use/ Community Character; 5) Traffic/ Circulation; 6) Noise; 7) Air Quality/Odors; 8) Biology; 9) Cultural Resources; 10) Native American Resources; 11) Visual Resources; 12) Socio-Economics; 13) Public Services and Utilities; 14) Cumulative Impacts; 15) Growth Inducing Impacts; and 16) Project Alternatives, including alternative locations for the project.

With regard to biological resources, the 1,683 acre site contains sensitive biological resources in the form of the Federally endangered least Bells vireo habitat in the San Luis Rey River road crossing, riparian woodland habitat, Coastal sage scrub habitat,

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with the potential of the occurrence of California gnatcatchers. The applicants would be subject to Section 7 of the Federal Endangered Species Act. If a property has coastal sage scrub habitat, permits to develop the site may be issued unless a Habitat Loss Permit has been issued by the County. Other options for the applicants are compliance with Section 10(a) of the Endangered Species Act, or the completion of a Sub-Area Plan for the area in which the project is located ~~(this would replace the requirement for a Habitat Loss Permit under the 4(d) rule).~~

In addition, a new species has been proposed for listing which could occur on the project site: the southern arroyo toad. There is also southern coast live oak woodland, coastal freshwater marsh, and native valley needle grassland on the property.

With regard to cultural resources, the Gregory Canyon site is adjacent to a known cultural resource site, Medicine Rock, that holds significance to the Native American Luiseno people of the area. It contains a ceremonial rock art site, and the potential exists for other similar sites on the mountain. Gregory Mountain has been used for ceremonial purposes by the Luiseno from prehistoric times to the present. It has archaeological, ethnographic, and religious significance for the Luiseno.

K. The applicant shall secure a Water Course Alteration Permit, Bridge Permit, Grading Permit and Building Permit from the County of San Diego. The County of San Diego is hereby authorized and directed to include the Project in its Integrated Waste Management Plan as required by State Law and to make any findings required for issuance of any necessary permits.

Staff Comments

The Initiative precludes all County land-use control by providing General Plan amendment and Zoning Ordinance changes that allow a landfill by right without the need for any discretionary permits issued by the County. For example, the County could not require a Major Use Permit, Reclamation Plan, Landscape Plan, Revegetation Plan, or Improvement Plans. In addition, the County could not specify infrastructure improvements, hours of operation, daily and maximum capacities, mitigation for environmental impacts, compliance with other permits, review of on-site road plans, or any other requirements that generally are included in a Major Use Permit.

By removing County permitting authority, the proponents will avoid all potential County fees, such as infrastructure or mitigation

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fees, since the County has no ability to place conditions upon the project through the permit process. Consequently, impacts to County facility and services that could be remedied through fee structures are precluded.

Before the Board of Supervisors could include the site in the Integrated Waste Management Plan, state regulations require that the Local Task Force review and comment on the site and that a majority of the cities (representing a majority of the population) recommend that the site be added to the Plan.

SECTION 5. MITIGATION MEASURES

The Initiative adopts specific mitigation measures which are intended to "minimize" the environmental impacts of the proposed landfill. These measures include limiting the days and hours of operation, cleaning up litter near the landfill, maintaining a hazardous waste exclusion program, installing a liner and leachate collection system and landfill gas system, designing the landfill to withstand the maximum probable earthquake, widening and realigning SR 76, mitigating air and noise impacts, submitting an odor control plan and dust control plan to the APCD, mitigating impacts to sensitive species and habitat, and mitigating visual and cultural impacts.

Section 5.Q. requires formation of a Citizen Environmental Review Board composed of representatives of each city or other governmental entity that agrees to supply waste to the project. The Citizens Advisory Board has the following responsibilities and authorities:

1. Authority to inspect and review all reports submitted by the landfill operator to any other regulatory agency.
2. Make recommendations to any regulatory agency with respect to the operation of the landfill, including any enforcement actions the Board may deem appropriate.
3. Establish an environmental review team consisting of qualified personnel to monitor the operations of the landfill. This team shall have reasonable access to the landfill during all hours of operation.

Staff Comments

This section implies that all of the impacts from the project can be mitigated and the these mitigation measures are adequate. As

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indicated above, the 1990 draft EIR concluded that for Land Use (community character), Noise, Air Quality, Biology, Cultural Resources, Native American Resources, Visual Resources, Growth Inducement and Cumulative Impacts, there were no mitigation measures which would render them insignificant. In addition, Section 5 does not include several mitigation measures which were included in the draft EIR.

The Advisory Board has the authority to monitor operations at the landfill, but no authority to direct the operator to make any changes in the design, operation, or other activities of the landfill. The Initiative does not address how members of the Board of the Environmental Review Team are compensated or staffed.

SECTION 6. TIPPING FEE

The tipping fee would start at \$43/ton for calendar year 1994 and be increased by the percentage change in the Consumer Price Index for the Los Angeles-Anaheim-Riverside Area. In addition, the tipping fee can change or be adjusted based upon negotiations between the Applicant and the agencies supplying waste to the landfill.

Staff Comments - None

SECTION 7. IMPLEMENTATION

This Initiative would require the County General Plan and all other pertinent plans be amended to designate the Gregory Canyon site Public/Semi-public lands with a Solid Waste Designator. The County Zoning Ordinance would be amended to create a new zoning classification, Solid Waste Facility. This classification would apply only to the Gregory Canyon site and this site would not need any discretionary land use permits from the County of San Diego except ministerial permits including a Water Course Alteration Permit, Bridge Permit, Grading Permit and Building Permit. The Initiative directs the County to amend all other elements of all County plans, ordinances and policies that might be affected by the Initiative to ensure consistency between the Initiative and the plans, ordinances and policies.

Staff Comments

Although the Initiative directs that the new zone classification be applied to only the Gregory Canyon site, it should be noted that once a classification has been added to the Zoning Ordinance, it permits other applicants to request, through an application for a

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Zoning Ordinance amendment, that the classification be applied to their property. The concept of allowing a solid waste facility "by right" without a major use permit would be available to properties countywide.

Section 7.0 requires the County to "amend other elements of the General Plan, sub-regional plans, community plans, Zoning Ordinance and other ordinances and policies affected by this Initiative as soon as possible in the manner and time required by State Law..." Typically the General and Community Plan amendment process requires Planning Group meetings and Planning Commission and Board hearings. The process is both time consuming and expensive, because of the nature and importance of the Community Plan. However, the Initiative would preclude such public involvement as the Board has no ability to deny the amendments since the amendments are required by the Initiative whether they are reasonable or not.

This measure would require amendments to the Regional Land Use Element of the General Plan, the Fallbrook Community Plan and Map, the Pala Pauma Subregional Plan and Map, and the Zoning Ordinance. Staffing costs to make these amendments would be approximately \$50,000 - \$70,000.

Although passage of the Initiative would preclude the need for a major use permit and its required environmental review, the Initiative does not address the need for environmental review of the general plan amendments and rezone required by the Initiative, but nonetheless required. Furthermore, if an environmental review on either the implementation of the Initiative or the required permits, such as grading, found significant unmitigable impacts, the Board might be forced to make overriding considerations.

SECTION 10. AMENDMENT OR REPEAL

This measure may be amended or repealed only by a majority of the voters voting in an election thereon.

Staff Comments

If for some reason the site is not used as a landfill, the site could not be used for any other purpose unless amended or repealed by a vote of the people. Consequently, if the owners wish to develop the property other than a landfill, the owners would need to have the property redesignated by use of the initiative process.

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Summary

A landfill at the Gregory Canyon site has the potential to cause significant impacts to residents living in the vicinity of the landfill. The passage of this Initiative would eliminate all County authority to minimize those impacts by regulating landfill operations.

Respectfully submitted,


DAVID E. JANSSEN
CHIEF ADMINISTRATIVE OFFICER

BOARD OF SUPERVISORS
AGENDA ITEM
INFORMATION SHEET

SUBJECT: Gregory Canyon Landfill Initiative

SUPV. DIST.: All

COUNTY COUNSEL APPROVAL: Form and Legality () Yes (X) N/A
() Standard Form () Ordinance () Resolution

AUDITOR APPROVAL: (X) N/A () Yes 4 VOTES: () Yes (X) No

FINANCIAL MANAGEMENT REVIEW: () Yes (X) No

CONTRACT REVIEW PANEL: () Approved (X) N/A

CONTRACT NUMBER(S): N/A

PREVIOUS RELEVANT BOARD ACTION: 7/26/94 (30) Placed the Gregory Canyon Landfill Initiative on the November 8, 1994 General Election Ballot.

BOARD POLICIES APPLICABLE: NA

INTERIM SOLID WASTE COMMISSION RECOMMENDATION: NA

CONCURRENCES: Department of Planning and Land Use *Thomas Williams*

ATTACHMENTS: None

ORIGINATING DEPARTMENT: Public Works

CONTACT PERSON: Tom Garibay (JTR) (S50) 694-2233 (0332)

Tom Garibay
DEPARTMENT AUTHORIZED REPRESENTATIVE

August 9, 1994
MEETING DATE

AUG 09 1994

To Mr. Henderson and the County of San Diego Solid Waste Local Enforcement Agency
The below names are opposed to a San Diego Solid Waste Facility Dump
Permit for the Gregory Canyon Site
February 2011

Name E. Allender Address 11050 Meadow Terr.
City San Diego Zip 92071 Phone ()

Name Lynne B. Alvarado Address 8342 B 11th, San Diego
City San Diego CA Zip 92137 Phone ()

Name ARC STADUNIS Address 10767 SAN DIEGO MISSION RD #311
City SAN DIEGO CA Zip 92108 Phone ()

Name AMANDA HAAS Address 1485 E. MADISON AVE
City El Cajon Zip 92109 Phone ()

Name Linda O. Albrecht Address 2857 Epaulille St
City SD Zip 92123 Phone ()

Name Sylvia D. Ditt Address 8301-112 mission Diego Rd
City San Diego Zip 92071 Phone ()

Name Wich D. Dault Address 6263 W. YEAH
City San Diego Zip 92029 Phone ()

Name Krizdale Simero Address 2217 BURROUGHS ST #4
City SAN DIEGO CA Zip CA 92111 Phone ()

Name MARC MORIEVA Address 4882 TALMADGE PRK ROW
City SD CA Zip 92115 Phone ()

Name Julie Davis Address 202 Island
City San Diego Zip 92101 Phone ()

Name Dick WAXELDORFER Address P.O. Box 492
City Borita Zip 91908 Phone ()

Name Rena Hamilton Address 32845 Via del Veneto Rd
City Valley Center Zip 92082 Phone ()

Name Mary S. Smith Address 2808 Keeswick Rd
City Mill Valley Zip 94082 Phone ()

Name Dona G. Grogan Address 15536 Adoma Dr.
City Panama Valley Zip 9706 Phone ()

Name Robert Weig Address 15538 ADAMS DR.
City PANAMA VALLEY Zip 97061 Phone ()

Name Florence W. Muffis Address 9542 - COUGHLIN
City ESCONDIDO Zip 92026 Phone ()

To Mr. Henderson and the County of San Diego Solid Waste Local Enforcement Agency
The below names are opposed to a San Diego Solid Waste Facility Dump
Permit for the Gregory Canyon Site
February 2011

Name FROAN SAWINOWZ Address 9542 COVEY LN
City ESCONDIDO Zip 92024 Phone ()

Name BILL SANDS Address 29815 ANTHONY RD.
City VALLEY CENTER Zip 92082 Phone ()

Name Kathy Sands Address 29815 Anthony Rd
City Valley Center Zip 92082 Phone ()

Name Margo Martinez Address 13669 ACORN Circle
City Valley Center Zip 92082 Phone ()

Name GLORIA MACEY Address 30402 TORONGA WAY
City VALLEY CENTER Zip 92082 Phone ()

Name Michele Pugh Address 11073 WEST LILAC RD
City VALLEY CTR Zip CA Phone ()

Name BILL LIDDEKE Address 11073 W. LILAC RD.
City VALLEY CENTER Zip 92082 Phone ()

Name Edna Ashby Address 12515 Santa Catalina
City V. Center Zip 92802 Phone ()

Name Jan Brewer Address 30841 Saddleback Rd.
City Valley Center CA Zip 92082 Phone ()

Name Jim Carter Address 21847 Paradise Mtn Ln
City Valley Center Zip 92082 Phone ()

Name Lawrence Rau Address 30573 Rock Stone Rd.
City Valley Center CA Zip 92082 Phone ()

Name Sandy Damkanski Address 31907 Oak Glen Road
City Valley Center Zip 92082 Phone ()

Name GEORGE SPEER Address 30861 SADDLEBACK Rd
City VC Zip 92052 Phone ()

Name Link Sale Address 14422 Pauwa Vista Dr.
City Valley Center Zip 92082 Phone ()

Name Sarah Catania Address 29010 Cole Bridge Rd.
City Valley Center Zip 92082 Phone ()

Name Paul Vaught Address 24263 The Yellowbrick Rd.
City Valley Center Zip 92082 Phone ()

To Mr. Henderson and the County of San Diego Solid Waste Local Enforcement Agency
The below names are opposed to a San Diego Solid Waste Facility Dump
Permit for the Gregory Canyon Site
February 2011

Name John McKeown Address 9497 Old Castle Rd
City Valley Center Zip 92082 Phone ()

Name Sarah McKeown Address 9497 Old Castle Rd
City Valley Center Zip 92082 Phone ()

Name CORHAN POLACK LINSKI Address 2110 Honey Springs Rd
City JAMUL Zip 91935 Phone ()

Name Lorena Robinson Address 27041 Oakmont rd.
City Valley Center CA Zip 92082 Phone ()

Name Teresa McKeown Address 9497 Old Castle Rd
City Valley Center Zip 92082 Phone ()

Name Rahab R. Cerverny Address 28752 CANYON RD.
City Valley Center Zip 92082 Phone ()

Name ANTHONY BLAZEI Address 13250 Mirar de Valle Rd
City Valley Center Zip 92082 Phone ()

Name Quarta Saline Address 11215 San Luis Hwy N DC Calif
City _____ Zip _____ Phone ()

Name KAMTEER PATTON Address 11244 San Luis Rem Dr
City Valley CTR Zip 92082 Phone ()

Name EVA KEREKHOE Address 457 Via Seros
City Encinitas Zip 92024 Phone ()

Name ZAN ROMAN Address P.O. Box 8693
City LA JOLLA Zip 92038 Phone ()

Name _____ Address _____
City _____ Zip _____ Phone ()

Name _____ Address _____
City _____ Zip _____ Phone ()

Name _____ Address _____
City _____ Zip _____ Phone ()

Name _____ Address _____
City _____ Zip _____ Phone ()

Name _____ Address _____
City _____ Zip _____ Phone ()

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
- Written Comment
- I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: EVAN ROMAN
*CITY OF RESIDENCE: CREAN BEACH
*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments:

PLEASE STOP THE LANDFILL SITE.
SAVE THE DRINKING WATER!
SAVE THE ENVIRONMENTAL AREAS!

February 23, 2011

County of San Diego, DEH
Solid Waste Local Enforcement Agency
5500 Overland Avenue, Suite 110
San Diego, CA 92123

Dear Mr. Henderson,

My name is George Wilkins, Vice-President of the San Luis Rey Watershed Council (SLRWC). SLRWC is a cooperative, non-profit stakeholder organization comprised of government agencies, Native American Tribes, special districts and non-governmental organizations with an interest in the San Luis Rey River watershed. I'm writing this letter on behalf of the SLRWC to formally voice our opposition to the landfill project being proposed at Gregory Canyon in this watershed.

The mission of the San Luis Rey Watershed Council is to preserve, protect and enhance the natural, cultural, and economic resources of the San Luis Rey Watershed. Since our founding in 1994, our organization has served as a cooperative association of watershed stakeholders that has provided a forum for addressing and resolving significant issues of stakeholder concern. Working cooperatively with the State of California Department of Conservation and the U.S. Environmental Protection Agency, the SLRWC wrote and published the "San Luis Rey River Watershed Guidelines - 2000". Our organization represents the San Luis Rey watershed in regional planning forums, and in meetings with elected officials and agency managers. We provide leadership for watershed-based projects designed to protect and improve the beneficial uses of the San Luis Rey River. Such projects include enhancement of wetlands at strategic locations in the watershed with the goal of providing natural cleansing of surface and sub-surface aquifers, with the goals of protecting drinking water supplies and providing floodplain protection.

With this in mind, the members of the SLRWC have great concern that proposed landfill at Gregory Canyon. Our multi-year research strongly indicates that approval of this landfill will inevitably have significant and unavoidable negative impacts on the San Luis Rey River watershed and on the valuable resources that the SLRWC is striving to protect. We firmly conclude that the site chosen for this proposed landfill is a very poor and risky site for a landfill, as verified in numerous environmental impact reports and studies. The proposed site is a small, steep, fractured rock valley located directly adjacent to the San Luis Rey River. In fact, the proposed landfill would not only be constructed adjacent to the river, but lower portions of the landfill would be 30 feet below the normal groundwater table for this section of the river. Also, the ancillary facilities would be built within the 100-year floodplain of the San Luis Rey River.

Many experts have written to you and provided public testimony regarding the negative impacts that failure of the proposed landfill liners (clay and/or plastic) will have on the water resources of the San Luis Rey River. The members of our organization clearly agree with these concerns. Unlike most watersheds in San Diego County, the San Luis Rey River watershed has deep, natural alluvial aquifer formations that are capable of storing significant potable water resources. In fact, this watershed is the largest unspoiled watershed in San Diego County that has such formations. In a time of severe drought in the western United States, and resultant declining water resources from the State Water Project and the Colorado River, it makes no sense whatsoever to allow a landfill to be built at a location where liner failure will seriously damage a very important regional water resource. The loss of this valuable resource would be extremely damaging for our region and there is no reasonable justification for allowing such a risk.

In addition to the risk of water resource damage from landfill liner failure, the San Luis Rey River also has a long history of extreme flood episodes. Large and damaging floods occurred in this watershed in 1862, 1883, 1916, 1926, 1980, 1993 and 2005. The 100-Year flood of record for this watershed occurred in 1916. During this flood, the peak flood discharge in Oceanside was estimated by the U.S. Geological Survey (USGS) to be 96,000 cubic feet per second (CFS). This is the seventh largest recorded flood in Southern California history, according to the USGS and it caused tremendous damage throughout the entire San Luis Rey River Watershed. Every bridge over the river was washed away. The drinking water plant in Oceanside was completely destroyed (a concrete and brick building), even though it was located far from the main channel of the river. Nothing that existed within the 100-year floodplain of the river was able to survive the flood of 1916. Yet, anecdotal evidence indicates that the floods of 1862 and 1883 were worse than the 1916 flood, meaning even stronger floods have occurred.

The sixth largest Southern California flood was on the Santa Ana River, with a peak flood discharge estimated by USGS of 100,000 CFS. This flood is also considered to be a 100-Year flood event, yet there are historical accounts of an even larger flood in 1862. It is important to note that the Santa Ana River watershed is three times larger than the San Luis Rey River watershed, yet the peak flow difference between the two watersheds was only 4,000 CFS. How did the San Luis Rey River watershed produce such a large flood from a much smaller watershed? And could such a flood event happen again? Scientific answers to these questions provide important insights regarding the survivability of the lower portions of the proposed Gregory Canyon landfill during large flood events, defined as 20-year to 100-year floods.

The headwaters of the San Luis Rey River originate on the steep slopes of Palomar Mountain. At 6000 feet, Palomar is not a high mountain, yet its geographic orientation allows it to produce significant orographic precipitation, especially during El Nino years. Palomar Mountain has the highest average annual rainfall in San Diego County, with 30-45 inches per year. During El Nino years, rainfall on Palomar Mountain can exceed 75 inches in one winter, contributing to disastrous floods. This is because the lower levels of the atmosphere (700-900 mb) become super-saturated with tropical moisture from equatorial regions of the Pacific Ocean near Hawaii. Cut-off winter low-pressure systems then catch and funnel this moisture directly into Palomar Mountain. As the saturated wind currents rise over the mountain, the air cools and the moisture is forced out of the atmosphere as rain, a phenomenon known as orographic precipitation. Historically, these extreme "Hawaiian Express" storms – with very high rainfall rates over 2-4 week periods – produce very large floods in the main-stem of the San Luis Rey River.

The 100-Year flood of 1916 is a case in point. Prior to this flood, San Diego County was in severe drought. Then, in January 1916, the rain began to fall. It rained for 3 weeks straight, causing extreme and devastating floods for all of San Diego County, and especially for the San Luis Rey River watershed. When the rain stopped, the San Luis Rey watershed was devastated. As mentioned before, all bridges over the river were destroyed. The Oceanside water plant, a concrete and brick building constructed far away from the main-stem channel of the San Luis Rey River, was completely destroyed. Just upstream from the proposed Gregory Canyon Landfill, the flooding was so extreme that it reached and damaged the church bell-tower at the San Antonio de Pala Asistencia (on the Pala Reservation), which is located several hundred feet north of the river channel and officially outside of the mapped 100-year floodplain.

Since 1916, additional flood events have occurred on the San Luis Rey River resulting in significant flood damage. The flood of 1980 is considered by USGS to have been a 30-40 year flood event, and it caused severe flood damage along the river and throughout the watershed.

The flood of 1993 is considered to have been a 20-year flood event, yet it also caused major flood damage. For purposes of illumination, we will focus our remaining comments on this most recent flood, because it provides insights into the capacity of this river to produce considerable destruction from even relatively small flood events.

The flood of 1993 was very damaging, even though it was only a 20-year event. The peak flood discharge at Oceanside was estimated at 25,700 CFS and this flood destroyed the following seven bridges along the main-stem of the San Luis Rey River: East Grade Road Bridge near Lake Henshaw, Lilac Road Bridge on the Pala Indian Reservation, Couser Canyon Road Bridge below Pala, Shearer Crossing east of Interstate 15, Old Highway 395 bridge, Bonsall Bridge, and the shoreline bridge near the Occanside Harbor. Each of these bridges had to be completely rebuilt after the flood of 1993. The flooding also damaged the Valley Center Road Bridge on the Rincon Indian Reservation, which is currently being rebuilt by San Diego County.

How did a 20-year flood destroy so many bridges? And what does this portend for the proposed Gregory Canyon landfill? Flood experts from around the region studied this event and determined that San Luis Rey River floods are highly erosive. The extreme fluvial processes of the 1993 flood undercut the foundations of the bridges and other destroyed facilities. These erosive fluvial processes are present in many Southern California rivers, yet they are extremely erosive and damaging along the San Luis Rey River. To make matters worse, large cedar and white alder trees were washed down from Palomar Mountain during the 1993 flood. These huge 24-48 inch diameter trees were broken into 20-30 foot pieces and washed down the river. This contributed to the formation of large debris dams that pounded the bridges during the flooding. The bridges had no chance of survival against the destructive combination of debris dams and highly erosive flood waters. In the section of the river between the Pala Indian Reservation and I-15, the bed of the river dropped as much as ten feet from pre-flood to post-flood – and the riverbed elevation remains lowered to this day. All this damage from a 20-year flood event.

The permit applications being reviewed include construction of an access bridge across the San Luis Rey River, along with ancillary landfill facilities. The proponents also request approval to place one acre of fill material within the 100-year floodplain, material that would remain in place after completion of the bridge. Among other things, the review must consider the ability of the bridge, the facilities, and the bottom portions of the landfill to survive a 100-year flood on the San Luis Rey River. It is our well-researched opinion that these facilities would have no chance at all for surviving a 100-year flood event. It is not even likely that they would survive a 20-year flood event, given the tremendous erosive capacity of this river during large flood events.

The San Luis Rey Watershed Council and our stakeholders ask the County of San Diego and all permitting agencies to scrutinize this proposed project to determine whether the bridge, lower landfill and related facilities can survive flood flows that will, without question, occur again – similar to the floods of 1916, 1926, 1980 and 1993. Please do not approve this project. Because if approved, the bridge and lower landfill will one day be destroyed by flooding. When this happens, there will be long-term negative impacts to drinking water supply, river water quality and to public safety, both during and after the flood. Concerning adverse water quality impacts to surface flow and subsurface aquifers, the damage could last for decades. The risks to human safety, public water supply and natural resources are not worth it.



George Wilkins, Vice President
San Luis Rey Watershed Council

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
- Written Comment
- I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: JEAN SAWYER
*CITY OF RESIDENCE: BONSDALE
*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: When I attended the meeting last year in San Marcos I thought this would be decided by the case of Congress.

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: HELEN STARR

*CITY OF RESIDENCE: BONSALL

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: _____

AT THIS MOMENT IN TIME, A LANDFILL NEXT
TO A PRISTINE RIVER IS CLOSE TO BEING OBSOLETE.
WE ARE RECYCLING SOLID WASTES AT A HIGH
PERCENT RATE NOW, & THIS UNDOUBTEDLY ^{WILL} CONTINUE
AT A HIGHER PERCENTAGE RATE.

THERE NEVER HAS BEEN A LANDFILL THAT DID NOT
LEAK.

THE ENVIRONMENT WILL SUFFER
THE ROADS ARE INADEQUATE FOR THE TRAFFIC
THE LANDFILL WILL GENERATE.

FROM THE INCEPTION OF THIS IDEA, IT WAS A
VERY BAD IDEA TO PLACE A LAND FILL NEXT
TO A RIVER

PLEASE DENY THE APPLICATION TO PROCEED WITH
THIS LAND FILL. WEN GET THIS RIVER
THANK YOU

COUNTY OF SAN DIEGO
SOLID WASTE LOCAL ENFORCEMENT AGENCY (LEA)
INFORMATION MEETING
SOLID WASTE FACILITY PERMIT
FOR GREGORY CANYON LANDFILL
SPEAKER SLIP / COMMENT SLIP
February 23, 2011, 6:30 pm to 9:30 pm

- Public
 Written Comment
 I Want to Speak

Time limits will be established for officials, other speakers and organized presentations based on the number of speaker slips submitted at the beginning of the meeting.

*NAME: Theressa Villa

*CITY OF RESIDENCE: Pala Indian Reservation

*PHONE: _____

*Note: This information is optional. However, for transcript preparation, we request that this form be completed. Once it has been submitted the information becomes public record.

Comments: I Theressa Villa am a Pala Band of Mission Indians
Kipa - Tribal Member. I strongly oppose the Gregory
Canyon landfill. The main reason the company wants
to gain a permit is to gain a profit only. It is
only \$\$\$ to them. As tribal members living in the
area this will have a dramatic impact on our
water we currently use, the water our future children
will need. This just ^{does} not effect us it effects our
local communities. It effects our local habitats,
it will have direct impact due to the transportation
of more vehicles on highway 76, the noise, the
effects on good quality air. It has a direct impact
on our cultural-sacred mountain, our medicine
mountain. Tribes are taking extreme measures
to reduce waste by providing transfer stations,
recycling & properly disposing of solid waste.
Our ancestors, current tribal members and our future
tribal members will continue to stay with the
opposition of landfill at this site. Our land
and cultural are sacred.



San Diego County Water Authority

4677 Overland Avenue • San Diego, California 92123-1233
(858) 522-6600 FAX (858) 522-6568 www.sdcwo.org

February 23, 2011

Mr. Jim Henderson
Solid Waste Local Enforcement Agency
Department of Environmental Health
County of San Diego
5500 Overland Drive, Ste. 110
San Diego, CA 92123

MEMBER AGENCIES

- Carlsbad Municipal Water District
- City of Del Mar
- City of Escondido
- City of National City
- City of Oceanside
- City of Poway
- City of San Diego
- Fallbrook Public Utility District
- Helix Water District
- Lakeside Water District
- Clayton Municipal Water District
- Oley Water District
- Padre Dam Municipal Water District
- Camp Pendleton Marine Corps Base Municipal Water District
- Rainbow Municipal Water District
- Romero Municipal Water District
- Sanon del Diablo Municipal Water District
- San Diego Water District
- Santa Fe Irrigation District
- South Bay Irrigation District
- Vallecitos Water District
- Valley Center Municipal Water District
- Vista Irrigation District
- Yuma Municipal Water District

Re: Solid Waste Facility Permit for the Proposed Gregory Canyon Landfill

Dear Mr. Henderson:

The San Diego County Water Authority (Water Authority) received the February 11, 2011 public notice for the above referenced permit. The Water Authority is the public agency responsible for providing the supplemental water supply to support over three million San Diego County residents and a \$171 billion economy. The proposed Gregory Canyon landfill has the potential to directly affect the Water Authority's ability to safely and reliably provide necessary regional water supplies.

Because Gregory Canyon landfill construction and operation will affect several nearby major water distribution pipelines, the Water Authority reiterates concerns presented in an August 12, 2010 letter to Ms. Rebecca Lafrenier, which is attached hereto as formal comments on the current permit application. The Water Authority requests that those comments and recommendations be included in any Solid Waste Facility Permit issued for this project. Further, the Water Authority requests that all conditions related to protection of Water Authority facilities that were included in SWFP No. 37-AA-0032 (since withdrawn) be incorporated in any new permit for Gregory Canyon landfill.

Ensuring the continued safety and reliability of San Diego's water supply is of paramount importance to the Water Authority. Please transmit the proposed SWFP to the undersigned when it is drafted. If you have any questions or wish to discuss these comments in greater detail, please contact me at (858) 522-6752.

Sincerely,

Larry Purcell
Water Resources Manager

Attachment

A public agency providing a safe and reliable water supply to the San Diego region

required to protect any San Diego Aqueduct pipelines to the extent and in the manner required by the San Diego County Water Authority" [emphasis added]. To date, the Water Authority has not entered into, and is not currently discussing terms for, an agreement with the project proponent that sets forth the extent or the manner for protecting San Diego Aqueduct pipelines as required by Proposition C.

In 2007 and 2008, representatives of Gregory Canyon Ltd. met with Water Authority staff and expressed their interest to not relocate the Water Authority's facilities, but protect them in place. In order to consider the request, the Water Authority requested Gregory Canyon Ltd. to provide an engineering study with specific scope-of-analysis. This study has not been provided. With only the existing technical studies and engineering plans to rely on, Water Authority staff cannot recommend to the Water Authority's Board of Directors that pipeline protection in place is prudent.

Therefore, LEA's issuance of the project's solid waste facility permit should be done with the expectation that San Diego Aqueduct pipeline relocation is a project component. The expired draft Gregory Canyon Landfill Solid Waste Facility Permit (Solid Waste Facility Permit #37-AA-0032, text dated 10/1/2004) included permit conditions that addressed some pipeline relocation matters; the permit conditions also referenced the corresponding mitigation measure numbers from the project's CEQA Mitigation Monitoring and Reporting Plan (MMRP).

The Water Authority conducted a cursory comparison between the expired draft Gregory Canyon Landfill solid waste facility permit conditions and the information included in the current Gregory Canyon Landfill solid waste facility permit application package, and is concerned with the changes and omissions in the current application package. Specifically, Table 10-1 (MMRP for Project Impacts) included in the new application package omits the project's CEQA mitigation measures MM 4.4-1, MM 4.9-19g, MM4.9-19a, MM 4.7-3, and MM 4.13-12b associated with relocating and protecting the Water Authority's existing pipelines and easement. The corresponding expired Solid Waste Facility Permit #37-AA-0032, (text dated 10/1/2004) condition numbers are B.1.j(4); B.1.b(32); B.2.b(12); B.2.e(7), and B.2.e(11). These mitigation measures should remain in the project's MMRP and be included in any new solid waste facility permit issued for the project.

Table 10-1 does include CEQA mitigation measure MM 4.1-3 (expired permit condition number B.1.j(1)) that states: "Prior to commencing any construction work, the owner/operator shall provide the County Department of Environmental Health a copy of the executed agreement between Gregory Canyon, Ltd. and the San Diego County Water

Authority providing for relocation and protection of the San Diego Aqueduct pipelines.” This must remain a condition of any solid waste facility permit to assure compliance with Proposition C.

The permit application package attachment SWFP-E purports to include the status of applicable permit applications and associated documentation. Attachment SWFP-E includes information that implies that a Water Authority right-of-way encroachment permit application is being processed by the Water Authority and includes a copy of correspondence from the Water Authority dated May 2, 2006. The application package does not include follow-up correspondence from the Water Authority dated May 16, 2006 (Enclosure 1), stating the Water Authority will not process plan reviews until a comprehensive agreement is reached addressing relocation and protection of all Water Authority facilities. Also, the application does not include additional correspondence between the Water Authority and Gregory Canyon Ltd., dated May 14, 2009 (Enclosure 2) that explicitly states there is no memorandum of understanding between the Water Authority and Gregory Canyon Ltd., that the Water Authority will not take an incremental approach to approval of the encroachment permit, and that the encroachment permit requires Water Authority Board of Directors’ approval.

The Water Authority considers the relocated right-of-way and pipelines shown in the project’s Environmental Impact Report as conceptual. The right of way as shown in Volume III of the permit package is also subject to change pending the outcome of an agreement between the Water Authority and project proponent. An alternative alignment other than that shown in the project’s final EIR may require additional CEQA compliance.

The Water Authority agrees with LEA’s rescission (email notice dated August 6, 2010) of the application completion determination because the actual physical scope of the project, and all applicable permit conditions, cannot be developed without the required Water Authority agreement under Proposition C. In addition, information contained in the permit application package attachment SWFP-E factually misrepresents the status of the Water Authority encroachment permit.

The Water Authority further recommends that the LEA consider the application package not ready for forwarding to the California Department of Resources Recycling and Recovery (CalRecycle) until there is an executed agreement between the Water Authority and Gregory Canyon Ltd. (or their successors interest) regarding the protection of the San Diego Aqueduct pipelines and facilities.

Ms. Lafrenier
August 12, 2010
Page 4 of 4

If you have questions or would like to discuss the Water Authority's concerns in more detail,
please contact Larry Purcell at (858) 522-6752.

Sincerely,



FOR Ken Weinberg
Director of Water Resources

DC:tp
Enclosures (2)



San Diego County Water Authority

4677 Overland Avenue • San Diego, California 92123-1233
(858) 522-6600 FAX (858) 522-6568 www.sdcwa.org

May 16, 2006

MEMBER AGENCIES

- Consbod
Municipal Water District
- City of Del Mar
- City of Escondido
- City of National City
- City of Oceanside
- City of Poway
- City of San Diego
- Fallbrook
Public Utility District
- Helix Water District
- Olivenhain
Municipal Water District
- Oray Water District
- Padre Dam
Municipal Water District
- Camp Pendleton
Marine Corps Base
- Rainbow
Municipal Water District
- Ramona
Municipal Water District
- Rincon del Diablc
Municipal Water District
- San Dieguito Water District
- Santa Fe Irrigation District
- South Bay Irrigation District
- Vallacitos Water District
- Vally Center
Municipal Water District
- Vista Irrigation District
- Yuima
Municipal Water District

Mr. Jason Simmons
Consultants Collaborative, Inc.
160 Industrial Street, Suite 200
San Marcos, CA 92078

RE: Application to construct an access road for the Gregory Canyon Landfill Project
across a San Diego County Water Authority Easement

Dear Mr. Simmons:

This letter is in response to your request for review of plans for an access road that will cross the Water Authority's easement within the Gregory Canyon Landfill Project. The Water Authority requires an appropriate agreement for the relocation and protection of its pipelines from all landfill activities to fulfill the conditions in the project's Solid Waste Facilities Permit. This requirement is contained in the Solid Waste Facility Permit approved by the California Integrated Waste Management Board in December 2004, and referenced in previous correspondence from the Water Authority to Gregory Canyon Ltd. (copy attached). The access road plans address only one aspect of the landfill project and do not address potential impacts to the Water Authority's pipelines at other locations. The Water Authority's plan review process will not begin until an agreement is executed that addresses relocation and protection of all Water Authority facilities.

Please contact Tad Brierton, Right of Way Supervisor; at 858-522-6915 to discuss the necessary agreements.

Sincerely,

William J. Rose
Director of Right of Way

WJR/RS/tr
Enclosure

cc: Tad Brierton

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R:\ROW\Projects\Gregory_Canyon_Landfill\WJR_JasonSimmons051606.doc

PRINTED ON RECYCLED PAPER

Mr. Jason Simmons
Consultants Collaborative, Inc.
May 16, 2006

Re: Application to build access road for the Gregory Landfill Project

bcc: Paul A. Lanspery

→ 6.9.04 BH

Chwon



San Diego County Water Authority

4677 Overland Avenue • San Diego, California 92123-1233
(858) 522-6600 FAX (858) 522-6568
www.sdcwa.org

June 2, 2004

Mr. Richard Chase
c/o Gregory Canyon Ltd.
991-C-404 Lomas Santa Fe Drive
Solana Beach, California 92075

RE: Agreements for Relocation and Protection of San Diego County Water Authority
Facilities prior to Commencement of Construction of Gregory Canyon Landfill

Dear Mr. Chase:

Now that the Solid Waste Facilities Permit for the Gregory Canyon Landfill appears to be in the final stages of approval, it is time for the San Diego County Water Authority and Gregory Canyon, Ltd. to finalize agreements for the protection and relocation of Water Authority facilities. As stated in the Final EIR for the landfill project, "a condition of the SWFP and a mitigation measure will require that prior to any construction work related to the landfill, the applicant shall provide DEH with a copy of the executed agreement with SDCWA providing for the relocation and protection of the San Diego Aqueduct." Also, the Final EIR provides measures for protection of Pipelines 1 and 2 of our aqueduct where it would be crossed by your access road.

The Water Authority will require an appropriate agreement for relocation and protection of our pipelines to fulfill the SWFP condition, and an agreement detailing protection measures for our pipelines at the access road juncture before we can allow our easement to be crossed. As you are aware, in the past we have drafted agreements to deal with both of these issues, and based on these drafts we believe suitable agreements can be finalized in the near future.

The Water Authority representative for Gregory Canyon issues is Jeff Garvey, Senior Civil Engineer of our Engineering Department, who can be reached at (858) 522-6884. Please contact him at your earliest convenience so that we can move forward to complete and execute the necessary agreements and avoid any delay in your project.

Sincerely,

John A. Economides
Director of Engineering

JAE/JT:bb
By Regular Mail

P:\GregoryCyn\NrttoGCL060204.doc

File No.: *060204* MEMBER AGENCIES

CITIES
• Lakeside • Escondido • Imperial City
• Carlsbad • Poway • San Diego

IRRIGATION DISTRICTS
• San Jacinto • Southwest
• Vista

WATER DISTRICTS
• Bello • Otay
• San Diego • Volcan
• Yuma

MUNICIPAL WATER DISTRICTS
• Carlsbad • Bonita
• Chula Vista • Encinitas
• Escondido • Imperial
• Poway • San Diego
• Vista

COUNTY
• San Diego
• San Diego

PUBLIC UTILITY DISTRICT
• Fallbrook

FEDERAL AGENCY
• Penetration Military Reservation



San Diego County Water Authority

4677 Overland Avenue • San Diego, California 92123-1233
(858) 522-6600 FAX (858) 522-6568 www.sdcwa.org

May 14, 2009

Mr. Jerry Riessen
Gregory Canyon Ltd.
98 Main Street
Tiburon, CA 94920

MEMBER AGENCIES

Carlsbad
Municipal Water District

City of Del Mar

City of Escondido

City of National City

City of Oceanside

City of Poway

City of San Diego

Fallbrook
Public Utility District

Helix Water District

Lakeside Water District

Olivewood
Municipal Water District

Otay Water District

Padre Dam
Municipal Water District

Camp Pendleton
Marine Corps Base

Rainbow
Municipal Water District

Rimoco
Municipal Water District

Rincon del Diablo
Municipal Water District

San Dieguito Water District

Santa Fe Irrigation District

South Bay Irrigation District

Vallecitos Water District

Valley Center
Municipal Water District

Vista Irrigation District

Yuma
Municipal Water District

RE: San Diego County Water Authority First Aqueduct
Pipelines 1 and 2 and Gregory Canyon Landfill

Dear Mr. Riessen:

This letter is in response to your letter dated March 24, 2009 and received by the Water Authority April 2, 2009. It is in our joint interest to take all prudent action necessary to protect the region's water supply. To further that goal it is imperative that our communication be clear and void of any ambiguity as it relates to the Gregory Canyon Landfill project.

Your letter states that it will serve as a memorandum of understanding (MOU) between the Water Authority and Gregory Canyon LLC (GC). Although the letter describes some of the information that the Water Authority will require, we want to be clear that it is not a MOU.

There is no existing MOU, nor has there been a response by GC or its representatives concerning the blasting analysis issue. At the May 8, 2008 meeting between GC and the Water Authority, Mr. Randy Hill stated that a report requested by the Water Authority would be provided, and would include detailed landfill construction plans and blasting impact analysis (copy of 5/8/08 Minutes enclosed). It is possible that these are a work in progress. Please understand that the Water Authority will not take an incremental approach to approval of the encroachment permit. In order to protect the region's water supply, it is essential that the details of the site development plan be clear before we are able to provide our Board with a recommendation about their approval of an encroachment permit.

A fully-executed encroachment permit that provides for protection, and if required by the Water Authority, relocation of aqueduct pipelines at GC's expense, is prerequisite to initiation of construction. This is a condition of the Solid Waste Facilities Permit as approved in December 2004 by the California Integrated Waste Management Board.

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Jerry Riessen
Gregory Canyon Ltd.
May 14, 2009
Page 2

This condition is also required by the Water Authority's Administrative Code Chapter 7.00, establishing regulations, policies, and procedures for the protection and preservation of the Water Authority's property and facilities. The encroachment permit will ultimately require approval by the Water Authority's Board of Directors.

The Water Authority is concerned about the information contained in your Air Quality Permit application to the Regional Air Quality Control Board, Section 1.2.7 (pages 18 and 19), that implied aqueduct realignment will not be a component of the Gregory Canyon Landfill Project, and that decisions regarding how crossings will be constructed have already been made. Please amend the application to plainly state that Gregory Canyon LLC would be responsible for any relocation. This should be done before the Air Quality Control Board considers the permit application.

Our goal is to provide you with a comprehensive and expedient review once we receive a completed encroachment permit application with the supportive analysis. Furthermore, we are committed to being as clear and concise in our communication with you as possible.

Please contact Tad Brierton, Right of Way Supervisor at 858-522-6915 to discuss the requirements for the encroachment permit, including the need for detailed construction plans and blasting analysis.

Sincerely,



William L. Busch
Director of Right of Way

WLB/tr
Enclosure

cc: Tad Brierton

MEETING MINUTES

Project Name: Gregory Canyon Landfill
May 8, 2008 at 10:00 am

Location: San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123

Attendees: Tad Brierton, SDCWA ROW Supervisor
Gary Stine, SDCWA Operations & Maintenance Manager
Mike Wallace, SDCWA Engineer (Engineering)
Steve Simon, SDCWA Engineer (Water Resources)
Julie Blackman, SDCWA ROW Project Manager
Richard Chase, Gregory Canyon Ltd.
Randy Hill, CH2MHill Vice President
XXXX
XXXX

-Status of Gregory Canyon Landfill Project

Richard Chase gave a brief description of the status of the required permits, reports and other outstanding issues for the project. There are several permits required by different agencies, all of which have either already been approved or approval is expected within the next few months. One of the final issues to be resolved is obtaining reclaimed water from Olivenhain Municipal Water District. All permits and approvals from the Water Authority still need to be obtained after the Water Authority's concerns are addressed.

-Follow-up discussion from previous meeting on April 23, 2007

Tad Brierton inquired about the requested Scope of Work from the previous meeting between Gregory Canyon Ltd. and the Water Authority on April 23, 2007. Randy Hill explained that a detailed scope of work has not been completed because Gregory Canyon Ltd. would like a more detailed direction from the Water Authority so that time and resources are not wasted on an unnecessary task. Mr. Brierton reiterated the Water Authority's need for a Scope of Work for the Landfill project after this meeting.

-Blasting Analysis

Mr. Brierton explained that the Water Authority is very concerned over the effects of long term blasting near the pipelines. The Ogden Report from 1996 did not address the effects of long term blasting at a specific frequency. Richard Chase suggested that a program be set up that monitored the effects of the blasting during operations and that if the results showed the blasting was nearing a maximum allowed movement, the blasting would cease. The Water Authority

personnel agreed that this option would not be acceptable and that a report would have to be submitted prior to approval of the project that showed what blasting would be performed during the project lifetime and that that blasting would not endanger the pipeline or reduce its lifetime. Randy Hill said they would provide a report.

-Relocation of Pipeline 1 and 2

Tad Brierton informed Richard and Randy that any proposed relocation of the Water Authority aqueduct would have to meet Water Authority requirements for access for operation and maintenance, inspection and repair. The current proposed relocation appears to be up a very steep portion of the canyon and might limit the Water Authority access to the pipeline. Tad also informed Richard and Randy that the shutdown of Water Authority operations in order to perform the relocation would have to be coordinated and correspond with an already scheduled shutdown or a new shutdown would have to be scheduled in the distant future. The easement rights we currently enjoy would have to be preserved.

-Vehicular Access over Pipelines 1 and 2

There will be two access routes over the Water Authority easement and Pipelines 1 and 2 for both construction vehicles and vehicles for landfill operations. These crossings will require protection of the pipelines. Bridges would be considered for a temporary crossing however encasements would be required at permanent vehicle crossing locations. Tad Brierton requested that any temporary bridge designs be submitted for review and informed Richard and Randy that load calcs would need to be submitted for any encasement and bridge design.

-Encroachment and Construction Permits

Tad informed Richard that an Encroachment Permit would be required for any improvements located within the easement and that a Construction Permit would be required for any encasements or relocation work. Board approval would be required for any relocation requests.

-Landfill Protection Program

-Pipeline 6

Steve Simon discussed the different alternatives for the Pipeline 6 locations including one that runs just to the west of the landfill property.