



Making San Francisco Bay Better

May 24, 2010

Lester Snow, Chair  
California Ocean Protection Council  
1330 Broadway, Suite 1300  
Oakland, CA 94612  
Attn: Doug George

SUBJECT: Ocean Protection Council Light Detection and Ranging (Lidar) Project

Dear Secretary Snow:

I am writing to express my strong support for the coastal Light Detection and Ranging (Lidar) project proposed by the Ocean Protection Council (OPC) for the California coast and San Francisco Bay. BCDC staff has identified topographic data collected using Lidar technology as a critical research need to advance our ability to plan for and adapt to climate change and sea level rise. Recent publications such as BCDC's *"Living with a Rising Bay, Vulnerability and Adaptation in the San Francisco Bay and on the Shoreline"* and The Pacific Institute's report entitled, *The Impacts of Sea Level Rise on the California Coast*, demonstrate the need for accurate topographic information to facilitate adaptation planning along our state coastline.

An accurate Lidar dataset would benefit coastal managers, scientists and decision makers by providing valuable topographic information that can be applied to coastal planning and management, coastal hazard modeling and floodplain/watershed management projects. In addition, the dataset would also support the goals of the Governor's Executive Order S-13-08 that directs all construction projects to consider sea level rise during design.

In order to accurately monitor and understand coastal conditions, the baseline Lidar dataset must be collected to the highest possible standards and collected at uniform data specifications. The survey should be performed and documented in ways that will allow future Lidar surveys to repeat the survey, which will assure that this survey is useful beyond mapping the current coastal land elevations. We support the work of the Ocean Protection Council on this important project which will advance our ability to effectively plan for the impacts of climate change on the San Francisco Bay and the California coast.

Sincerely,

WILL TRAVIS  
Executive Director

WT/SG/rca

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MAY 25 2010  
COASTAL CONSERVANCY  
OAKLAND, CALIF.

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000  
SAN FRANCISCO, CA 94105-2219  
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FAX (415) 904-5400



April 29, 2010

The Honorable Lester Snow  
Chair, California Ocean Protection Council  
1330 Broadway, Suite 1100  
Oakland, CA 94612

RE: Support for the Acquisition of LIDAR Data for Coastal California

Dear Secretary:

We are writing to express the support of the staff of the California Coastal Commission for the proposal for OPC to enter into contracts to acquire Light Detection and Ranging (LIDAR) data for the beach and inland areas of coastal California, and, once these data have been checked for quality assurance, to make them available in map form for public and agency use. The ideal mapping product would be seamless bathy/topo surveys, or consistent survey data for the nearshore, beach and inland. Such data sets and the resultant map products would be a very useful tool for coastal planning and management. It would help in many of the Commission's routine planning and regulatory efforts and would be an essential framework for any efforts to plan or adapt to rising sea level.

Historically the Commission has entered into cooperative programs with other coastal agencies to acquire overlapping aerial photography that can be used for analysis of coastal change. Spot surveys of the coast by LIDAR, and products such as Google Earth and the California Coastal Records Project have reduced the need for regular aerial photography, but have also made the data gaps more obvious. There is no statewide, high resolution bathy/topo survey of the coast. There have been some surveys of the beach, but none of the surveys have provided detailed inland topography or been linked to the nearshore bathymetry. The need for such data was highlighted by recent discussions on rising sea level and an interest in being able to determine the areas of the coast that could be vulnerable to various possible future changes in sea level. It is expected that much more of the coast will be vulnerable to a 3 foot rise in sea level than it would be to a 1 foot rise in sea level. However, the resolution of much of the inland topographic data for the state would not allow delineation of these different zones, except through time-consuming and inaccurate interpolation. The proposed LIDAR data set would enable this delineation to be developed and would serve as a baseline survey of coastal landforms and elevations.

Analysis of sea level vulnerability and adaptation options was the initial reason for wanting to acquire seamless bathy/topo LIDAR of the California coast. However, these data sets could be used for many planning and regulatory efforts beyond planning for sea level rise. They can help with wetland mitigation and determination of wetland buffers, help with identification of areas

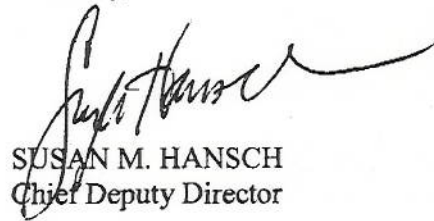


that could be useful for habitat restoration, inform analysis of wave run-up and inundation, tsunami vulnerability and shoreline change. And, while it is possible to anticipate some of the more obvious uses for these data sets, it is also likely that other unexpected uses will develop once the data sets are available and once people begin using them.

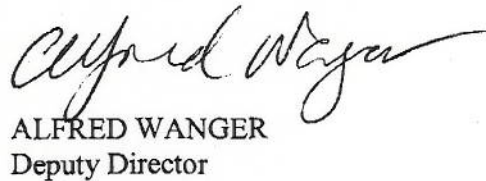
We would like to work with the Ocean Protection Council, the staff of the OPC, and the project proponents to refine data specifications and output mapping products for the open ocean coast. We are also willing to share available information and datasets to support the successful development of this important coastal survey.

Thank you for your consideration.

Sincerely,



SUSAN M. HANSCH  
Chief Deputy Director



ALFRED WANGER  
Deputy Director

cc: Sam Schuchat, California Coastal Conservancy  
Doug George, California Coastal Conservancy  
Sheila Seimens, California Coastal Conservancy



# DEPARTMENT OF CONSERVATION

## CALIFORNIA GEOLOGICAL SURVEY

801 K STREET • MS 12-30 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 445-1825 • FAX 916 / 445-5718 • TDD 916 / 324-2555 • WEBSITE [conservation.ca.gov](http://conservation.ca.gov)

May 18, 2010

Lester Snow, Secretary  
Natural Resources Agency  
1416 Ninth Street, Suite 1311  
Sacramento, CA 95814

Re: Acquisition of Coastal LiDAR Imagery

Dear Secretary Snow:

The California Geological Survey (CGS) supports the acquisition of coastal LiDAR data presently being proposed to the Ocean Protection Council of the California Coastal Conservancy. These data will be useful on several fronts related to CGS coastal geologic and hazard mapping efforts.

Integration of LiDAR data into the newly combined bathymetric-topographic digital elevation models being produced by the National Geophysical Data Center will be of significant assistance to CGS's California Tsunami Preparedness and Hazard Mitigation Program. Without this key LiDAR information, there will be significant information gaps along the coastline that will preclude construction of the most useful tsunami hazard maps for use by California's communities.

In addition, these LiDAR data will contribute to the usefulness of CGS's Coastal Erosion Program products, which support the Coastal Sediment Management Workgroup's long-term regional sediment management efforts to identify and resolve sediment imbalances within the coastal zone. These data, also, provide a baseline that permits CGS to track long-term changes in beach width, bluff retreat, dune deflation, sediment volumes trapped by natural or man-made structures, and other elements important to littoral cell sediment budgets.

Finally, LiDAR data are essential to CGS's assessment work for the California State Parks Department at the coastal dune field at Oceano Dunes in San Luis Obispo County. The Oceano Dunes is an off-highway vehicle park within the ecologically sensitive dune field, and requires careful and balanced land management practices with respect to dune preservation and threatened animal habitat.

Lester Snow, Secretary  
May 18, 2010  
Page 2

If you have any questions about CGS support for the acquisition of these data, or related CGS projects in general, please do not hesitate to contact me at (916) 445-1923.

Sincerely,

A handwritten signature in black ink that reads "John G. Parrish". The signature is written in a cursive style with a large, sweeping initial "J" that extends to the left.

John G. Parrish, Ph. D, PG  
California State Geologist



May 21, 2010

Dr. Amber Mace, Executive Director  
Mr. Sam Schuchat, Secretary  
California Ocean Protection Council  
1330 Broadway, Suite 1300  
Oakland, CA 94612

Dear Dr. Mace and Mr. Schuchat:

We are writing as the co-chairs of the California Coastal Sediment Management Workgroup (CSMW) in support of the "Statewide Aerial Coastal Topographic LiDAR and Imagery Project" that will be considered by the Ocean Protection Council at its June 24, 2010 meeting. This effort is directly related to the council's Information, Research and Outreach Strategy, Information and Research Needs #3 - Coastal Hazards, Shoreline Processes and Beaches.

The CSMW is a collaborative taskforce, **co-chaired by the US Army Corps of Engineers and the California Natural Resources Agency**, consisting of federal, state, and local agencies and non-governmental organizations working to address California's coastal sediment management needs on a regional and system-wide basis. The goal of the CSMW is to reduce shoreline erosion and coastal storm damages, restore and protect beaches and other coastal environments by re-establishing natural sediment supply from rivers, impoundments and other sources to the coast, and optimizing the use of sediment from ports, harbors, and other opportunistic sources.

As you may be aware, there is currently no consistent statewide coastal elevation data set or map. Some portions of the coast have been repeatedly mapped over the last decade using LiDAR while others have not been mapped with modern methods. Coastal resource managers and coastal communities would benefit from a complete baseline topographic elevation LiDAR dataset because this technology provides highly precise and accurate information that can be applied to a variety of coastal data needs. For example, the CSMW and its member agencies would use a coastwide LiDAR database for sea-level rise planning and adaptation, beach retreat and nourishment, coastal storm surge hazard modeling and mitigation, tsunami hazard assessment and planning, wetland restoration, and floodplain management.

In order for California to accurately monitor and understand coastal changes due to sea-level rise and other factors, a baseline LiDAR dataset must be collected to the highest possible standards. The survey should be performed and documented in ways that will provide for adequate comparisons with future LiDAR surveys, to assure that this survey is useful beyond mapping the current coastal land elevations. Last, all deliverables from the survey, such as datasets and digital elevation maps, should be made accessible to the public at no-cost to maximize its use by coastal managers, scientists, and decision-makers.

Sincerely,

A handwritten signature in blue ink that reads 'Brian Baird'.

Brian Baird,  
Assistant Secretary for Ocean and Coastal  
Policy,  
California Natural Resources Agency

A handwritten signature in brown ink that reads 'George Domurat'.

George Domurat  
Chief, Programs Support Division, South  
Pacific Division,  
U.S. Army Corps of Engineers

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JUN 01 2010

COASTAL CONSERVANCY  
OAKLAND, CALIF.



**DEPARTMENT OF WATER RESOURCES**

1416 NINTH STREET, P.O. BOX 942836  
SACRAMENTO, CA 94236-0001  
(916) 653-5791



May 13, 2010

Honorable Lester A. Snow  
Secretary for Natural Resources  
California Natural Resources Agency  
1416 Ninth Street, Room 1311  
Sacramento, CA 95814

Dear Mr. Snow,

I am writing to obtain your support of the "Statewide aerial coastal topographic LiDAR and imagery project" that will be considered by the Ocean Protection Council on June 24, 2010.

The Delta Levees Program led a recent effort to collect LiDAR in the Sacramento-San Joaquin Delta, and subsequent to this acquisition, has been using the data for a wide variety of applications. The Delta LiDAR data has also found use by a wide variety of agencies and stakeholders for many different types of applications, but all of which share the common need for accurate elevation surveys.

As useful as Delta LiDAR has proven to be, it does not complete the acquisition of elevation data for the entire San Francisco Bay region. This affects the Delta in several ways. As one example, considerable interest has formed on understanding which areas are potentially affected by sea level rise. Rising sea level will have significant impacts on California's coastline with some studies suggesting estimates of up to a 1.4 m sea level rise by 2100. The degree of those changes is dependent on several factors, but of course one significant one being the elevation of the land. A complete baseline topographic elevation dataset for the California coast and San Francisco Bay would benefit coastal resource managers and coastal communities by providing critical information that can be applied to a detailed sea level rise impact-area mapping study.

More broadly, FloodSAFE Environmental Stewardship and Statewide Resources Office (FESSRO) considers the goal of developing a seamless elevation survey throughout the entire Sacramento-San Joaquin watershed to be of benefit to all of the Department of Water Resources and to all of the Natural Resources agencies, and, in principle, supports projects that work toward achieving that goal. Currently, there is no elevation map of consistency throughout the entire watershed. Some areas have been routinely mapped during the last decade using cutting edge technology such as LiDAR while others have not been mapped with modern methods. This inconsistency makes it difficult for regional planning or research activities. This project would help address that data gap.

Mr. Snow  
May 13, 2010  
Page 2

For California to accurately monitor and understand coastal changes, the baseline LiDAR dataset must be collected to the highest possible standards. The standards chosen for the proposed project are also consistent with those used for the Delta LiDAR survey. The survey should be performed and documented in ways that will allow future LiDAR surveys to be repeated, which will assure that this survey is useful beyond mapping the current coastal land elevations. Lastly, all deliverables from the survey (such as datasets and digital elevation maps) should be accessible by the public to maximize its use by scientists, engineers, planners and decision-makers.

I encourage your support for this project. Please have your staff contact Joel Dudas of FESSRO at (916) 651-7002 for further information on the project or to answer questions regarding its implementation.

Sincerely,



Dave Mraz, Chief  
Delta Levees and Environmental Engineering  
FloodSAFE Environmental Stewardship  
and Statewide Resources Office

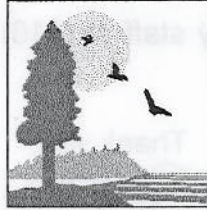
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cc: Doug George  
California Ocean Protection Council  
1330 Broadway, Suite 1300  
Oakland, CA 94612



## CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South  
Sacramento, CA 95825-8202



May 3, 2010

PAUL D. THAYER, Executive Officer

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from Voice Phone 1-800-735-2922

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Contact FAX: (916) 574-1885

File Ref: Secretary Lester Snow, Chair  
California Ocean Protection Council  
Attn: Doug George  
1330 Broadway, Suite 1300  
Oakland, CA 94612

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MAY 05 2010

**COASTAL CONSERVANCY  
OAKLAND, CALIF.**

Dear Secretary Snow,

I am writing in support of the "Statewide aerial coastal topographic LiDAR and imagery project" that will be considered by the Ocean Protection Council on June 24, 2010.

Rising sea level will have significant impacts on California's coastline with some studies suggesting estimates of up to a 1.4 m sea level rise by 2100. The degree of those changes is dependent on several factors, the largest being the elevation of the land. A complete baseline topographic elevation dataset for the California coast would benefit coastal resource managers and coastal communities by providing critical information that can be applied to a variety of coastal data needs, including tsunami hazard assessment and planning, coastal storm surge hazard modeling and mitigation, wetland restoration, floodplain management, storm water management and coastal development planning or response initiatives. Further, this dataset would support the goals of the California Governor's Executive Order S-13-08 of November 2008 calling for a comprehensive sea level rise assessment by December 1, 2010. A contemporary high-resolution topographic dataset would allow for better planning and design to satisfy the directives than older, lower resolution surveys.

Currently, there is no consistent statewide coastal elevation map. Some areas have been routinely mapped during the last decade using cutting edge technology such as LiDAR while others have not been mapped with modern methods. This inconsistency makes it difficult for regional and statewide planning or research activities.

For California to accurately monitor and understand coastal changes, the baseline LiDAR dataset must be collected to the highest possible standards. The survey should be performed and documented in ways that will allow future LiDAR surveys to be repeated, which will assure that this survey is useful beyond mapping the current coastal land elevations. Lastly, all deliverables from the survey (such as datasets and digital elevation maps) should be accessible by the public to maximize its use by scientists, engineers, planners and decision-makers.


Secretary Lester Snow

2

May 3, 2010

Please contact Eric Gillies of my staff at (916) 574-1897 or [gilliee@slc.ca.gov](mailto:gilliee@slc.ca.gov) if you have any questions.

Thank you,



Cy R. Oggins, Chief  
Division of Environmental Planning  
and Management

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cc: Eric Gillies, CSLC

COASTAL CONSERVANCY  
OAKLAND, CALIF.

Rising sea level will have significant impacts on California's coastline with some studies suggesting estimates of up to a 1.4 m sea level rise by 2100. The degree of those changes is dependent on several factors, the largest being the elevation of the land. A complete baseline topographic elevation dataset for the California coast would benefit coastal resource managers and coastal communities by providing critical information that can be applied to a variety of coastal data needs, including tsunami hazard assessment and planning, coastal storm surge hazard modeling and mitigation, wetland restoration, floodplain management, storm water management and coastal development planning or response initiatives. Further, this dataset would support the goals of the California Governor's Executive Order S-13-08 of November 2008 calling for a comprehensive sea level rise assessment by December 1, 2010. A contemporary high-resolution topographic dataset would allow for better planning and design to satisfy the objectives than older, lower resolution surveys.

Currently, there is no consistent statewide coastal elevation map. Some areas have been routinely mapped during the last decade using cutting edge technology such as LIDAR while others have not been mapped with modern methods. This inconsistency makes it difficult for regional and statewide planning or research activities.

For California to accurately monitor and understand coastal changes, the baseline LIDAR dataset must be collected to the highest possible standards. The survey should be performed and documented in ways that will allow future LIDAR surveys to be repeated, which will assure that the survey is useful beyond mapping the current coastal land elevations. Lastly, all deliverables from the survey (such as datasets and digital elevation maps) should be accessible by the public to maximize its use by scientists, engineers, planners and decision-makers.





May 13, 2010

Dr. Lester Snow, Chairman  
Ocean Protection Council  
c/o California Coastal Conservancy  
1330 Broadway Avenue, Suite 1300  
Oakland, California 94612  
Attn: Doug George

Dear Dr. Snow,

On behalf of California State Parks (CSP) I'm pleased to write in support of the OPC mission and in particular for your Topographic LiDAR and Imagery Project. As manager of our enterprise geographic information system, I am keenly aware of the Project benefits to our scientific, management, and resource protection communities.

CSP is responsible for nearly one-third of California's 1,200 miles of coastline, managing the state's finest examples of coastal wetlands, estuaries, beaches, and dunes. Each year, millions of Californians and visitors from around the world enjoy these high-quality recreation opportunities. CSP recognizes that the significant benefit to the state's economy generated by coastal resources is at risk from the effects of sea-level rise, coastal storm surges, and potential tsunami inundations, and we welcome joining OPC and cooperators to address these issues. Your Project data would find diverse applications in hazard assessments, resource restoration, and emergency preparedness in over 120 of our coastal units.

By conservative estimates, CSP values Project delivery of seamless, high-accuracy LIDAR elevation and imagery data at over \$300,000 for the coastal portions of over 200,000 acres of state beaches, parks, and natural and cultural reserves. OPC's funding of this project would also generate significant benefits by facilitating access to elevations and imagery to augment deficient budgets and to avoid duplicate spending not only at CSP, but also in a complex network of coastal government and private concerns. While precise commitment of CSP contributions must await state fiscal certainty, I will continue to strongly advocate provision of our online imagery, staff time, ground access for project operations, and product evaluation and distribution.

Thank you for this opportunity to express our enthusiastic support for the OPC LiDAR Project. Please contact me at 916-651-2094 or email to [pveisze@parks.ca.gov](mailto:pveisze@parks.ca.gov) if there is anything else I may do or provide.

Sincerely yours,

Paul Veisze  
Geographic Information Officer



California Natural Resources Agency  
DEPARTMENT OF FISH AND GAME

Biogeographic Data Branch  
1807 13<sup>th</sup> Street, Ste. 202  
Sacramento, CA 95811-7137  
916.324-6906  
<http://www.dfg.ca.gov/biogeodata>

ARNOLD SCHWARZENEGGER, Governor  
JOHN MCCAMMAN, Director



June 1, 2010

Secretary Lester Snow, Chair  
California Ocean Protection Council  
1330 Broadway, Suite 1300  
Oakland, CA 94612  
Attn: Doug George

Dear Secretary Snow,

I am writing in support of the "Statewide aerial coastal topographic LiDAR and imagery project" that will be considered by the Ocean Protection Council on June 24, 2010.

Rising sea level will have significant impacts on California's coastline with some studies suggesting estimates of up to a 1.4 m sea level rise by 2100. The degree of those changes is dependent on several factors, the largest being the elevation of the land. A complete baseline topographic elevation dataset for the California coast would benefit coastal resource managers and coastal communities by providing critical information that can be applied to a variety of coastal data needs, including tsunami hazard assessment and planning, coastal storm surge hazard modeling and mitigation, wetland restoration, floodplain management, storm water management and coastal development planning or response initiatives. Further, this dataset would support the goals of the California Governor's Executive Order S-13-08 of November 2008 calling for a comprehensive sea level rise assessment by December 1, 2010. A contemporary high-resolution topographic dataset would allow for better planning and design to satisfy the directives than older, lower resolution surveys.

Currently, there is no consistent statewide coastal elevation map. Some areas have been routinely mapped during the last decade using cutting edge technology such as LiDAR while others have not been mapped with modern methods. This inconsistency makes it difficult for regional and statewide planning or research activities.

For California to accurately monitor and understand coastal changes, the baseline LiDAR dataset must be collected to the highest possible standards. The survey should be performed and documented in ways that will allow future LiDAR surveys to be repeated, which will assure that this survey is useful beyond mapping the



Secretary Lester Snow, Chair

June 1, 2010

Page 2 of 2

current coastal land elevations. Lastly, all deliverables from the survey (such as datasets and digital elevation maps) should be accessible by the public to maximize its use by scientists, engineers, planners and decision-makers.

Thank you.

A handwritten signature in blue ink, consisting of stylized, overlapping loops and a long horizontal stroke extending to the right.

Thomas Lupo, Chief  
Biogeographic Data Branch  
California Department of Fish and Game



United States Department of the Interior

U. S. GEOLOGICAL SURVEY

Western Coastal and Marine Geology Team  
400 Natural Bridges Drive  
Santa Cruz, CA 95060  
(831-427-4746) [sjohnson@usgs.gov](mailto:sjohnson@usgs.gov)

May 12, 2010

Secretary Lester Snow, Chair  
California Ocean Protection Council  
1330 Broadway, Suite 1300  
Oakland, CA 94612  
Attn: Doug George

Dear Secretary Snow,

I am writing in support of the “Statewide aerial coastal topographic LiDAR and imagery project” that will be considered by the Ocean Protection Council on June 24, 2010.

Rising sea level will have significant impacts on California’s coastline with some studies suggesting estimates of up to a 1.4 m sea level rise by 2100. The degree of those changes is dependent on several factors, the largest being the elevation of the land. A complete baseline topographic elevation dataset for the California coast would benefit coastal resource managers, coastal communities, and scientists by providing critical information that can be applied to a variety of coastal data needs, including tsunami hazard assessment and planning, sediment transport and management, coastal storm surge hazard modeling and mitigation, wetland restoration, floodplain management, storm water management and coastal development planning or response initiatives. Here at the USGS, our staff will immediately use these data for virtually all of our California coastal research, monitoring, and assessment. Most notably, the data will be incorporated into the map series that we are developing for the California Seafloor Mapping Program, allowing us to develop seamless onshore-offshore coverage. As another good example, we will use these data for our National Shoreline Change Assessment, an effort that summarizes historical coastal change and provides a basis for future forecasts of coastal evolution. These data will truly help California confront the challenges of sustaining its amazing coastal environment.

For California to accurately monitor and understand coastal changes, the baseline LiDAR dataset must be collected to the highest possible standards. The survey should be performed and documented in ways that will allow new information to be used as a precise baseline for comparison with future LiDAR surveys, and to assure that this survey is useful beyond mapping the current coastal land elevations. Lastly, all deliverables from the survey (such as datasets and digital elevation maps) should be accessible by the public to maximize its use by scientists, engineers, planners and decision-makers.

Sincerely,

Samuel Y. Johnson  
Research Geologist  
Western Region Oceans Coordinator



**FEMA**

June 8, 2010

Secretary Lester Snow, Chair  
California Ocean Protection Council  
1330 Broadway, Suite 1300  
Oakland, CA 94612

Dear Secretary Snow,

I am writing in support of the "Statewide Aerial Coastal Topographic LiDAR and Imagery Project" that will be considered by the Ocean Protection Council on June 24, 2010.

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) is in charge of the National Flood Insurance Program (NFIP) and, with help from partners, develops and provides flood hazard data and maps nationwide. Following the comprehensive Map Modernization effort to update and create digital flood map products, FEMA is now engaged in the Risk Mapping, Assessment, and Planning (Risk MAP) Program.

The new Risk MAP Program will focus on a variety of initiatives with an important goal of performing detailed studies resulting in more accurate flood hazard data to perform better risk analysis. One of the directives for Risk MAP is to provide new detailed coastal studies and flood data for 100% of the populated coast. In alignment with this directive, the FEMA Region IX efforts include conducting new coastal flood studies for the entire Pacific Ocean coastline in California starting in Fiscal Year 2010.

Currently, there is no consistent statewide elevation data along California's coast. The storm surge and wave run-up models used by FEMA are most cost effectively developed across a long coastal reach. Consistent statewide coastal elevation data is fundamental to FEMA coastal mapping efforts. This effort will allow both the State and FEMA to cost effectively leverage project dollars.

Sincerely,

A handwritten signature in black ink that reads "Kathleen Schaefer".

Kathleen Schaefer, PE, CFM  
FEMA Region IX Engineer

KKS/kks



ADJ HAYMET PhD DSc  
DIRECTOR  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

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May 28, 2010

The Honorable Lester Snow  
Chair  
California Ocean Protection Council  
California Resources Agency  
1416 Ninth Street, Suite 1311  
Sacramento, CA 95814

Dear Secretary Snow:

I am writing in support of the statewide aerial coastal topographic LiDAR and imagery project that will be considered by the Ocean Protection Council.

Over the last decade, areas of Southern California have been routinely mapped by Scripps Institution of Oceanography scientists using cutting-edge LiDAR (Light Detection And Ranging) technology. These high-resolution data sets have proven useful to researchers, engineers, coastal planners and decision-makers in observing and understanding coastal processes and forecasting shoreline inundation. It is the high quality of these survey data that allows for the assessment and prediction of shoreline and bluff change.

For California to accurately monitor and understand coastal changes along its entire coastline, any baseline LiDAR dataset funded by the OPC must be collected to the highest possible standards. The survey should be performed and documented in a manner that will allow future LiDAR surveys to be repeatable, assuring that the data are useful beyond mapping the current coastal land elevations. The OPC must also ensure that the data are viable for scientific uses through stringent quality controls and that all deliverables from the survey (such as datasets and digital elevation maps) are made accessible to the public to maximize their use.

Rising sea level and a changing wave climate will have significant impacts on California's coastline, and complete baseline topographic elevation dataset for the California coast would benefit coastal communities in their efforts to adapt to these challenges. The OPC will significantly aid their efforts by ensuring the repeatability and scientific integrity of this baseline survey.

Sincerely,

Tony Haymet  
Director, Scripps Institution of Oceanography