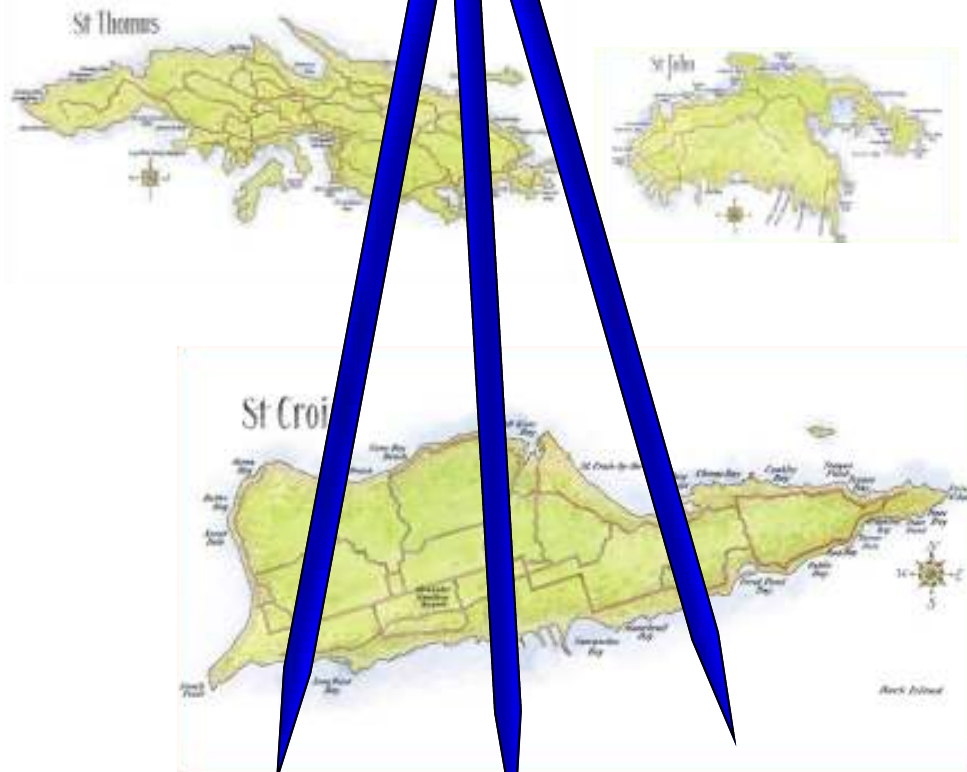


2nd Annual GIS Conference

Technological Applications for Coastal Protection

“Partnering with our Caribbean and Insular Neighbors”



Sponsored By:
Vargrave A. Richards, Lieutenant Governor
OFFICE OF THE LIEUTENANT GOVERNOR
June 22-23, 2006
Divi Carina Bay Resort—St. Croix, U.S.V.I.

St. Croix, U.S. Virgin Islands



GEM OF THE CARIBBEAN

St. Croix, the largest of the U.S. Virgin Islands, encompasses 84 square miles and has nearly two thirds of the territory's land area. It also has the most amazing history—this little island has seen the flags of seven different nations fly over its mountains, valleys and harbors! Privateers, admirals and treasure seekers have all been attracted to its shores, first by the lure of treasure but also by the highly profitable production of cotton, sugar cane, rum, indigo and spices.

Today, this jewel that sparkles in the middle of the Caribbean Sea offers beauty and adventure all under the American flag. Take a trip back in time, hear some fascinating bits of American history, explore the Crucian culture and discover the GEM of the Caribbean, St. Croix.

In 1755, the capital of the Virgin Islands moved from Charlotte Amalie in St. Thomas to Christiansted in St. Croix. The sugar based prosperity of St. Croix reached its glory at the end of the 1700's. Everywhere you travel on this lovely island you will discover sugar plantation ruins, and towns designated by the National Register of Historic Places as Historic Sites with rich fascinating reminders of the past.



THE UNITED STATES VIRGIN ISLANDS

OFFICE OF THE GOVERNOR
GOVERNMENT HOUSE

Charlotte Amalie, V.I. 00802
340-774-0001

June 8, 2006

MESSAGE FROM THE GOVERNOR

On behalf of the people and Government of the United States Virgin Islands, I am pleased to extend best wishes and congratulations to Lieutenant Governor Vargrave Richards the Office of the Lieutenant Governor for sponsoring the 2nd annual GIS conference themed: Technological Applications for Coastal Protection Partnering with our Caribbean and Insular Neighbors.

I am heartened that this year's conference, poised to expand on last year's dialogue relative to the integration and application of state-of-the art technology for coastal planning and mapping will promote awareness and improve preparedness for disastrous weather in the Territory. Lieutenant Governor Richard's insight and leadership role in providing this important forum and partnering with our Caribbean and Insular Neighbors to improve coastal protection during times of natural devastation is noteworthy.

May Almighty God bless the participants, sponsors and host of this worthwhile event. May He, with his infinite grace and mercy, grant the wisdom, foresight and resources needed, when possible to prevent loss of life and injury during times that test the faith and courage of us all.

A handwritten signature in cursive script that reads "Charles W. Turnbull".

Charles W. Turnbull
Governor



THE UNITED STATES
VIRGIN ISLANDS

Lieutenant Governor
Vargrave A. Richards

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**A MESSAGE FROM LIEUTENANT GOVERNOR
VARGRAVE A. RICHARDS**

Let me welcome all of you to the 2nd Annual Office of the Lieutenant Governor's GIS Conference themed: **"Technological Applications for Coastal Protection - Partnering with Our Caribbean and Insular Neighbors."** Allow me to also extend a hearty welcome to St. Croix, host island of this year's conference in the Virgin Islands.

This year we are honored to have FEMA and NOAA join us once again as partners in this process. My gratitude to our Department of Planning and Natural Resources and all other local agencies for your diligent collaboration towards the success of this undertaking.

Last year's conference was clearly a marked success and allowed everyone the opportunity to interact and dialogue with experts in the field. Everyone commented on the benefits of the information presented and their intent to integrate the information shared with their respective agencies.

We will continue the dialogue begun and look to the experts once again to share with us updates on technological advances for better coastal protection. We will continue to build important networks of expertise on this often neglected, but vital body of knowledge. We will also discuss the implementation of the CORS Stations and Height Modernization initiatives begun under the auspices of my Office. Additionally, the drafting of an Executive Order and implementation of a Charter Council to further GIS activities and policies will be presented. Discussions to benefit geospatial users in the application and modernization of positioning systems will be a main focus.

The case of Katrina and other natural disasters over recent years compels us to be more aggressive about collaboration, coordination and partnering for improved coastal protection.

Again, the Office of the Lieutenant Governor welcomes you to St. Croix and the Territory. Enjoy your time here, gather all the data that you need, but remember to spend some time shopping and relaxing at the wonderful Divi Divi Carina Resort beach and facilities.

My deepest gratitude to all sponsors and organizers of this vital conference for your tremendous support. Best regards for a productive and dynamic conference.

Sincerely,


Vargrave A. Richards
Lieutenant Governor



DONNA M. CHRISTENSEN
Deputy, Virgin Islands

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GREETINGS FROM DELEGATE DONNA M. CHRISTENSEN

I extend a warm Virgin Islands welcome to all of the conference participants, those that traveled long distances or made short hops from our neighboring and adjacent islands, to further support the goals and objectives that were established last year. It is really a proud moment to see that the Territorial Geographic Information Council has maintained its momentum and will be conducting its second annual conference.

As we begin the first month of the 2006 Hurricane Season, it is reassuring to see that this conference begins with the involvement and participation of two prominent co-sponsors: the National Oceanic and Atmospheric Administration (NOAA) and the Federal Emergency Management Administration (FEMA). Both agencies have incredible backgrounds and expertise in the areas that are to be addressed, along with the lessons they learned from our experiences with disastrous weather and the difficult experience they acquired during the 2005 Hurricane Season.

It goes without saying that I offer the services of my office in any way that it can help attain the goal of having the federal government work through the Territorial Geographic Information Council to coordinate Geographic Information Systems projects in the Territory and as we partner with our Caribbean neighbors.

Once again welcome to the second annual conference of the Territorial Geographic Information Council and may God inspire all for a productive and successful agenda.

Warm Regards,



Donna M. Christensen
Member of Congress



HONORABLE LORRAINE L. BERRY
Senate President

Legislature of the Virgin Islands

Capitol Building
St. Thomas, U.S. Virgin Islands

Office of the Senate President



June 22, 2006

Chair
• Committee of the Whole

Vice Chair
• Committee on Public Safety
Homeland Security Justice

Committee Member
• Committee on Rules and Judiciary
• Committee on Health, Hospitals and
Human Services
• Committee on Economic Development,
Planning and Environmental Protection


MESSAGE FROM THE SENATE PRESIDENT

On behalf of the Twenty-Sixth Legislature of the Virgin Islands, I wish to welcome members of the Federal Emergency Management Agency (FEMA), members of the National Oceanic and Atmospheric Administration (NOAA), participants of neighboring Caribbean Islands and Insular area representatives to this Second Annual GIS Conference. The Lt. Governor and his staff should be commended for hosting this important event that is important to the U.S. Virgin Islands, as we prepare for what is slated to be an active hurricane season.

The theme of the conference, namely **"Technological Applications for Coastal Protection: Partnering with our Caribbean and Insular Neighbors"** reflects the importance of using technology in partnership with our Insular and Caribbean partners to be constantly aware of the effects of storms to our coastal areas, and their impacts on our civilian population. It is impossible to prevent hurricanes, but with new technological advances it will become increasingly easier to alert our residents about the potential for widespread damage during natural disasters. Residents can also prepare, well in advance of a hurricane, or other natural disaster, for any potential impact to land or coastal areas, and prepare to evacuate these areas well in advance of a major storm.

It is important to continue to develop innovative ways to prevent coastal erosion in the Insular Caribbean regions. We understand the price we pay for living on islands, but with the proper warning systems, the latest technology, and the most qualified personnel available to us, we can prepare for, and survive the ravages of any storm that affects our immediate region.

I wish all the participants a productive conference, and look forward to interacting with all of you as our territory prepares for another active hurricane season.


Senator Lorraine L. Berry
President, Twenty-Sixth Legislature of the Virgin Islands
"Your Voice of Reason"

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Federal Emergency Management Agency

Region II

Jacob K. Javits Federal Building
26 Federal Plaza, Room 1307
New York, NY 10278-0002

June 6, 2006

On behalf of the Federal Emergency Management Agency (FEMA), I would like to commend Lieutenant Governor Vargrave A. Richards for convening the second Annual GIS Conference, "Partnering with our Caribbean and Insular Neighbors". FEMA is honored to partner with the United States Virgin Islands and the National Oceanic and Atmospheric Administration (NOAA) to bring the many participants together to share experiences and learn information that will help build a comprehensive technological alliance to mitigate the natural hazards that face residents of the Caribbean.

We welcome the participants to a conference built on last year's dynamic presentations and open participation and are eager to see the momentum that started in 2005, continue and build through and after this year's meeting. We also thank the Lieutenant Governor for inviting us to again participate.

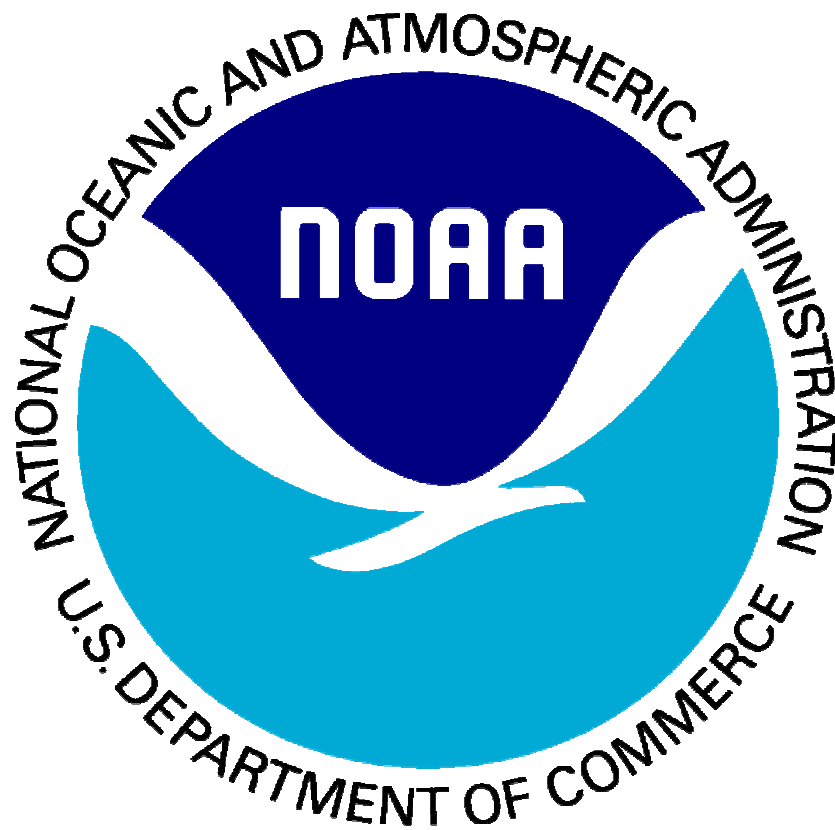
The goal of FEMA's Map Modernization Program is to update and digitize all the Flood Insurance Rate Maps (FIRMs) for the United States. In the USVI we have restudied all the coastal areas and some of the riverine areas. The new maps are a combination of restudy and redelineation and are expected to become final in 2007.

Again, we thank the Lieutenant Governor for the opportunity to participate in this conference and expect that it will be a successful and rich learning experience for all the participants.

Mary A. Colvin

Community Mitigation Programs Branch Chief
Mitigation Division
FEMA, Region II
26 Federal Plaza
New York, New York 10278-0002





A partner making a difference ...



GOVERNMENT OF THE UNITED STATES VIRGIN ISLANDS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

45 Mars Hill, Frederiksted
St. Croix, U.S. Virgin Islands 00840-4474

Office of the Commissioner

Telephone: (340) 773-1082
FAX: (340) 773-1716

A MESSAGE FROM THE COMMISSIONER

On behalf of the Department of Planning and Natural Resources, I wish to warmly welcome off-island conference attendees to the United States Virgin Islands, particularly St. Croix, and congratulate the Honorable Vargrave A. Richards, Lieutenant Governor of the Virgin Islands, on the Second GIS Conference: "Technological Applications for Coastal Protection - Partnering with our Caribbean and Insular Neighbors".

Once again, Lieutenant Governor Richards continues to demonstrate initiative in the organization of this conference and leadership in recognizing the great significance of GIS technology within the Government of the Virgin Islands and the Territory as a whole. Indeed, the fruits of the last conference, and the efforts of Lieutenant Governor Richards, resulted in the creation of the United States Virgin Islands Geospatial Information Council (VIGIC). This is a tremendous leap forward for the Territory.

GIS technology has been proven to be an effective decision making tool in minimizing the loss of life and property from natural and man-made disasters through its use in planning, mitigation, response and recovery. The formation of VIGIC will hopefully ensure that geospatial data be managed using accepted standards, uniform policies and transferable methodologies; that geospatial data are efficiently and effectively collected and stored; and the cost-effective and useful exchange and retrieval of geospatial information, both within and among the various local, public and private sector, and federal agencies, is provided to the people of the Virgin Islands.

Once again, the Department of Planning and Natural Resources is extremely excited to be a part of Second GIS Conference since there has been a long history of constructive engagement between the Office of the Lieutenant Governor and us. It is my belief that this conference will provide a dynamic opportunity to listen, share, and learn from the presentations. It will allow us to return to our respective purviews with invaluable information. Thank you for attending.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dean C. Plaskett".

Dean C. Plaskett, Esq.
Commissioner



NEVILLE JAMES
Senator

Legislature of the Virgin Islands

#100 Lagoon Homes Ste. 2
Frederiksted, U.S. Virgin Islands 00840-3912

CHAIRMAN
Economic Development,
Planning and Environmental Protection

MEMBER
Committee on Finance
Committee on Health
Hospitals and Human Services
Committee on Public Safety,
Homeland Security and Justice

June 9, 2006

Welcome to the U.S. Virgin Islands!

In my oversight responsibility as Chairman of the Committee on Economic Development, Planning & Environmental Protection it is a great pleasure to welcome you to the 2nd Annual GIS Conference - "Technological Applications for Coastal Protection – Partnering with our Caribbean and Insular Neighbors". It is heartening to see so many of you again, along with our friends from NOAA and FEMA as we continue to build on the foundation set in place from the 1st Annual GIS Conference in 2005.

As we face many global climactic changes, we must stay focused on managing our stressed and fragile resources. With our continued collaborative efforts and as GIS technology becomes more available; I am confident that the concerns facing our coastlines will be comprehensively addressed.

In conclusion, I again welcome the opportunity this conference provides, in terms of sharing expertise & experiences. This partnership came about through a communal vision; and with hard work & open lines of communication this vision will become an immeasurable asset for the U.S. Virgin Islands and our partnering Caribbean and Insular Neighbors.

Sincerely,

A handwritten signature in cursive script that reads "Neville James".

Neville James
Senator, St. Croix-District
26th Legislature of the U.S. Virgin Islands

Tel: (340) 712-2279

Fax: (340) 712-2384



Craig W. Barshinger

Legislature of the Virgin Islands

Office of Senator Craig W. Barshinger



Senator at Large 26th Legislature

- Delegee to the United States Congress
- Health, Hospitals and Human Services
Chair
- Labor and Agriculture Committee
Vice-Chair
- Public Safety, Homeland Security and
Justice Committee
Member
- Economic Planning and Environmental
Protection Committee
Member
- Government Operation and Oceans
Protection Committee
Member

A MESSAGE FROM THE SENATOR-AT-LARGE

It is with great pleasure that I take this opportunity to welcome all the attendees of the 2nd Annual GIS Conference. I express thanks to the Office of the Lieutenant Governor, the Federal Emergency Management Agency and the National Oceanic and Atmospheric Administration for their efforts in putting together this very important conference and providing us with the information necessary to protect our coastlines in these times of ever-changing weather patterns.

This year's theme – "Technological Applications for Coastal Protection: Partnering with our Caribbean and Insular Neighbors" – is appropriate. The lessons we have learned in the last year alone through Hurricane Katrina and other catastrophic storms has taught us that whatever happens to one locale impacts not only that area, but potentially the world.

The GIS conference provides us with new, exciting and life-saving ways of managing our terrestrial, coastal and marine resources. I look forward to the wealth of information that will be provided at this year's conference. The Virgin Islands is truly proud to host this landmark event.



Craig W. Barshinger
Senator-at-Large
26th Legislature of the Virgin Islands

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The Very Long Baseline Array (VLBA) is a system of ten radio-telescope antennas, each with a dish 25 meters (82 feet) in diameter and weighing 240 tons. From Mauna Kea on the Big Island of Hawaii to St. Croix in the U.S. Virgin Islands, the VLBA spans more than 5,000 miles, providing astronomers with the sharpest vision of any telescope on Earth or in space. Dedicated in 1993, the VLBA has an ability to see fine detail equivalent to being able to stand in New York and read a newspaper in Los Angeles. An overview of the VLBA briefly describes its equipment and design. Can be viewed at <http://www.VIBA.com/>



Image courtesy of NRAO/AUI



<http://www.photolib.noaa.gov/coastline/images/big/line1486.jpg>

Point Udall is the eastern most point of St. Croix. It is also the most eastern part of the United States. It was named in honor of Stewart Udall, United States Secretary of the Interior under Presidents John F. Kennedy and Lyndon Johnson. A sundial known as the Millennium Monument was designed by Bill Rich. It was built in for the 2000 New Year's celebration.

Conference Agenda

WEDNESDAY, June 21, 2006

6:00 pm to 8:00 pm

Early Registration – Carina Room

6:30 pm to 9:30 pm

Welcome Reception - Poolside

THURSDAY, June 21, 2006

8:00 am to 8:50 am

Continental Breakfast – Coral & Surf Room

9:00 am to 9:55 am

Opening Ceremony

Master of Ceremonies: Mr. Victor Somme, III
Director, CZM–DPNR

National Anthem

Invocation

Welcome Remarks

The Honorable Claudette Lewis
Assistant Commissioner
Department of Planning and Natural Resources

The Honorable Neville James
Chair, Economic Development and Environmental
Affairs, 26th Legislature of the Virgin islands

Commander Brian K. Taggart
Acting NGS Deputy Director/NOAA
Representing Mr. Challstrom
NGS Director/NOAA

OFFICIAL OPENING OF CONFERENCE

The Honorable Vargrave Richards
Lt. Governor, United States Virgin Islands

The Honorable Charles Turnbull
Governor, United States Virgin Islands

Conference Agenda

THURSDAY, June 22, 2006

10:00 am to 10:35 am

SESSION I

FEMA's Flood Map Modernization Program
Brian Shumon, FEMA

10:40 am to 11:15 am

SESSION II

Change Analysis of FEMA's Flood Maps
Lorin Lewis and Alexis Doward, DPNR

Break

11:30am to 12:05 pm

SESSION III

Caribbean Regional Association (CaRA)
Roy A. Watlington, UVI

12:05 pm to 1:30 pm

LUNCH – Coral & Surf Room

Coastal Erosion Vulnerability Assessment
Dr. David Smith, Smith Warner International

1:30 pm to 2:05 pm

SESSION IV

Modernization of Positioning System
Lt. Jacob Ramos, Coast Guard

2:10 pm to 2:45 pm

SESSION V

Nuts & Bolts of GIS Councils
William F. Johnson, NSGIC

Break

3:00 pm to 3:35 pm

SESSION VI

Geodetic Datums of the Virgin Islands
Dave Doyle, NOAA

3:40 pm to 4:15 pm

SESSION VII

Implementation of Information Technology
Kelly Harrigan, Sally Powers, Dr. Theresa Parris
Office of the Lieutenant Governor

Conference Agenda

THURSDAY, June 22, 2006

4:20 pm to 5:00 pm

SESSION VIII

Panel Discussion

Interagency Partnership Opportunities

FRIDAY, June 23, 2006

8:00 am to 8:50 am

Continental Breakfast – Coral & Surf Room

9:00 am to 9:35 am

SESSION IX

The Coast and Shoreline Change Analysis Project

Maryellen Sault, NOAA

9:40 am to 10:15 am

SESSION X

GIS Damage Assessment Tools Update

Rob Hofmann, ESRI

10:20 am to 10:55 am

SESSION XI

Hurricane Evacuation Planning Products for U.S. & Caribbean

Candida Bronson, U.S. Army Corp

Break

11:10 am to 11:45 am

SESSION XII

Hurricane Response/LIDAR

Michael Aslaksen, Acting Division Chief Remote Sensing

12:05 pm to 3:15 pm

TECHNICAL TOUR – Box Lunch

6:30 pm to 10:30 pm

CLOSING BANQUET - Coral & Surf Room

St. Croix



Biographies and Abstracts

Brian Shumon: FEMA's Flood Map Modernization Program

This presentation will discuss the goals of the Flood Map Modernization Program and the role of GIS in the Map Modernization process. This nation-wide program is using new geographic data and improved technologies to identify flood hazard areas more accurately than in the past.

Brian Shumon is a Map Modernization Specialist for FEMA Region II (New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands). He is currently working on the FEMA Flood Map Modernization Program. He is a geographer and has worked as a map specialist for the U.S. Census as well as FEMA for more than 8 years.

~

Lorin Lewis & Alex Doward: Change Analysis of FEMA's Digital Flood Maps

This presentation will demonstrate how the U.S. Virgin Islands Department of Planning and Natural Resources is integrating existing GIS data to review draft FEMA Flood Hazard Maps. An overview on areas in designated flood hazard zones by island will be provided.

Lorin Lewis is Plan Reviewer/Building Inspector and Flood Plain Coordinator for the St. Thomas / St. John District. As Flood Plain Coordinator, he is responsible for: Issuing flood hazard permits determining flood hazards assisting FEMA with ensuring the territory complies with the National Flood Insurance Program Rules and Regulations, and conducting Public Awareness Activities. Along with 15 years of experience in the construction field, Lorin is a certified ICBO 1 & 2 family building inspector, and a Registered/Licensed Architectural Draughtsman.

~

Prof. Roy A. Watlington: Caribbean Regional Association (CaRA)

With support from *OceanU.S.*, the University of the Virgin Islands has joined the University of Puerto Rico (Mayagüez) in organizing Caribbean Regional Association (CaRA). This presentation will provide an update on the establishment of the CaRA. CaRA's purpose is to bring together both users and producers of data and observations of the ocean and coastal waters in the Caribbean Exclusive Economic Zone of the United States, which include the waters of Puerto Rico, the U.S. Virgin Islands and Navassa.

Professor Roy A. Watlington, University of the Virgin Islands is Co-Principal Investigator and Sub-regional Coordinator of CaRA. He has been professor of physics and physical oceanography at the University of the Virgin Islands since 1982. Professor Watlington did his undergraduate work in Physics at Hunter College. His graduate degrees are in Science Education and Physics. He is the co-compiler of the book entitled "Disaster and Disruption in 1867: Hurricane Earthquake and Tsunami in the Danish West Indies."

Rob Hofmann: GIS Damage Assessment Tools Update

This presentation provides a brief overview of GIS use in the Hurricanes of 2004 and 2005. It will also provide an update on GIS field applications for damage assessment.

Rob Hofmann serves as the Environmental System Research Institute, Account Manager for South Florida and the U.S. Virgin Islands. He holds a Masters in Urban Planning (with emphasis in GIS for planning). He has extensive experience in using GIS for Hurricane response in Florida and after Hurricane Katrina in Mississippi.

He has twenty (20) years of GIS experience. In 1987, Rob worked with the Florida Power & Light (FPL). While at FPL he used GIS for Asset Management and Planning of the Electric Grid. Before going to ESRI, Rob was GIS Manager for FPL from 1998-2000.

~

William F. Johnson: Nuts and Bolts of GIS Councils

The presentation will cover lessons learned in GIS coordination over the past 10 years, and New York's experiences after 9/11.

William F. Johnson is Assistant Deputy Director & CIO for the New York State Office of Cyber Security and Critical Infrastructure Coordination. He functions as Operations Manager for the agency, overseeing both GIS and Cyber Security. He also Chairs the 18-member NYS GIS Coordinating Body which oversees the Statewide GIS Coordination Program. Previously, Bill was CSCIC's Manager of Geographic Information and Critical Infrastructure Coordination. Prior to the establishment of CSCIC in 2002, he was Deputy Director of the New York State Center for Geographic Information at the New York State Office for Technology, and before that, he was Director of Mapping and GIS for the New York State Department of Transportation. Bill has more than 21 years of experience with mapping and GIS in New York State, and has been very active in statewide GIS coordination for many years. He also served for seven years on the Board of Directors for the National States Geographic Information Council, including a term as President in 2003-2004. Bill holds a Masters degree in Geography from Michigan State University. He has also been a Certified Mapping Scientist, GIS/LIS, by the American Society of Photogrammetry and Remote Sensing.

~

Lieutenant Jacob Ramos: Modernization of Positioning System

The U.S. Coast Guard is developing a Nationwide **Differential Global Positioning System (DGPS)**. The U.S. Coast Guard Navigation Center (NAVCEN) operates the Coast Guard Maritime DGPS Service which is responsible for two control centers and over 60 remote broadcast sites. This presentation will provide an update on the Coast Guard's plan to construct a Nationwide DGPS site on the east Coast of Puerto Rico.

The predicted area of coverage includes the British Virgin Islands. Plots showing the predicted area of coverage for the future site will be presented.

Lieutenant Jacob Ramos has been in military service for twenty-three (23) years. His military career began as a Marine Corps Infantry Rifleman where he served from 1982 through 1986. In 1988, he enlisted in the United States Coast Guard where he served as Electronic Technician at: Coast Guard Cutter Hamilton WHEC-715, Coast Guard Group Hampton Roads and Coast Guard Detachment Roosevelt Roads. He currently serves as the Project Manager for the Nationwide Differential GPS, Coast Guard Navigation Center.

Candida Bronson: Hurricane Evacuation Planning Products for the U.S. and Caribbean

The Corps of Engineers has participated in the development of three useful tools for hurricane evacuation planning in the U.S. Virgin Islands. Hurrevac is a program used by emergency managers to evaluate the threat of approaching storms, calculate lead time for planning purposes, and link to current weather conditions. A brief introduction to the Hurrevac program will be presented, and additional information made available.

Candida Bronson is a Coastal Engineer and Planning Technical Leader for the Coastal and Navigation Section of the U.S. Army Corps of Engineers Planning Division. She also serves as the Hurricane Evacuation Program Manager for the U.S. Virgin Islands. As such, Ms. Bronson coordinates training opportunities for local emergency managers and technical improvements to products used in evacuation planning.

~

Dave Doyle: Geodetic Datums of the Virgin Islands

This program details fundamental geodetic surveying concepts of reference ellipsoids, geoid models, regional and global coordinate systems, including: Horizontal datums (e.g. Puerto Rico, NAD 83), vertical datums and global reference frames (ITRF, WGS 84) as they apply to the Virgin Islands.

Dave Doyle is the Chief Geodetic Surveyor of the National Geodetic Survey (NGS) of the U.S. Department of Commerce, where he is responsible for the development, technical design and management of high accuracy reference networks. He provides technical assistance in Geodesy to International, Federal, State and local surveying, mapping and GIS agencies. Since 1967 his experiences have included all phases of geodetic triangulation, astronomic positioning, geodetic leveling, GPS data collection, data analysis, datum transformations, network adjustments, and data publication.

Mr. Doyle is a Past President of the American Association for Geodetic Surveying, a Fellow member of the American Congress on Surveying and Mapping, a Charter member of the Geographic and Land Information Society, and the District of Columbia Association of Land Surveyors, and is active in the Maryland Society of Surveyors and the International Association of Geodesy.

Mike Aslaksen: Hurricane Response/LIDAR

NOAA's National Geodetic Survey's Remote Sensing Division is responsible for demarcating the United States and its territories coastal margins. This national shoreline is the critical baseline for demarcating marine territorial limits, including its Exclusive Economic Zone, and for the geographic reference needed to manage coastal resources. The method used today by NOAA to delineate and attribute shoreline is through stereo photogrammetry using tide-coordinated aerial photography. However several emerging technologies are being explored such as light detection and ranging (lidar), thermal, radar, and hyperspectral imaging technologies, which show promise for increasing efficiency for shoreline mapping within the Coastal Mapping Program.

In order to support NOAA's national security and emergency response requirements, the National Geodetic Survey (NGS) Remote Sensing Division has the capability to acquire and rapidly disseminate a variety of spatially-referenced datasets. During times of natural or human induced disasters, these capabilities are available for the collection and delivery of high resolution datasets to a variety of users, such as federal, state, and local government agencies. In our largest response effort, NOAA collected over 8,000 aerial images of the hardest hit areas in Alabama, Mississippi, and Louisiana after Hurricane Katrina made landfall. These images were made available to emergency personnel and the public on the NOAA/NGS web site (<http://www.ngs.noaa.gov/>).

Mike Aslaksen is currently the acting Chief of NOAA's National Geodetic Survey's Remote Sensing Division. Before taking the position of Chief, he served as staff cartographer, advising the Chief and serving as team lead for the Research and Development team. Mike has been with NOAA for 15 years.

~

Maryellen Sault: The Coast and Shoreline Change Analysis Program (CSCAP)

The **Coast and Shoreline Change Analysis Program (CSCAP)** is a relatively recent initiative in the Coastal Mapping Program. CSCAP enables NOAA's National Geodetic Survey personnel to analyze shoreline changes by comparing recent high resolution commercial satellite imagery with existing NOAA raster nautical charts and Electronic Navigational Charts (ENC). By digitally overlaying the satellite imagery with the chart data in a GIS environment, positional inaccuracies and changes in the shoreline and alongshore features (piers, jetties, etc.) can be easily detected. Corrections and updates can be compiled after re-georeferencing the satellite image using well defined ground control points. This newly compiled shoreline is uploaded to NOAA's Shoreline Data Explorer and then applied to NOAA charts and ENCs.

Maryellen Sault is a cartographer in the National Geodetic Survey (NGS) Remote Sensing Research Team. She earned a master's degree in Geology from the University of North Carolina at Wilmington. Over the past five years, Ms. Sault has applied her expertise in remote sensing to develop procedures for coastal feature change analysis using high resolution satellite imagery. Her current research interests include hyperspectral imagery, synthetic aperture radar, and data fusion.

Kelly Harrigan: Implementation of Information Technology

This presentation will discuss Network Infrastructure: Voice and Data Converged Network, Challenges of implementing a Wide Area Network in the Virgin Islands, (hardware acquisition, server room implementation, Working with local vendors), and Helpful Hints on preparing and training employees for the implementation of new technology.

Proprietary Database: Acquisition and implementation of proprietary database solutions, and Challenges of working with off-island database vendors.

Public Interface: Web based interface for public searches (The successes of the Lt. Governor's Office).

Kelly Harrigan was recruited in May 2003 to be Director of Management Information Services for the Office of Lieutenant Governor. Her primary goal is to fully automate and interconnect every office within the Lieutenant Governor's purview and integrate proprietary databases that will maximize employee productivity and improve services to the general public.

Ms. Harrigan earned a Bachelor's degree in communications from Syracuse University. She began her work experience in communications in the field of wireless PCS (Personalized Communication Services) when it was still an emerging technology. Ms. Harrigan has worked as a network engineer and has applied and managed several different cutting edge technologies such as VoIP (Voice Over Internet Protocol), ATM (Asynchronous Transfer Mode), TCP/IP (Transmission Control Protocol) and service provider networks using advanced routing algorithms. She has also developed databases, managed collocations facilities and network operations, and has been integrally involved in e-commerce.

Sally Powers: VI Property Revaluation

The court ordered revaluation of all property for property tax purposes began in July, 2004. The project, VI Property Revaluation, had several components: Installation of new systems: CAVU parcel management and tax collections, Sigma Systems Technology property, characteristics database and property valuation, GIS update and integration with CAVU parcel management and Sigma property database. Recollection of all property data: Commercial, Houses, Condominiums and Timeshares. Revaluation of all property based on new data: Cost approach, Sales comparison approach and Income approach.

Sally Powers is a Manager of BearingPoint, Inc. She has more than twenty-five years of property valuation, database management, and assessment administration experience. Some highlights include: Project management, including initial implementation of a market value based property tax in a transitional economy, installations of specialized assessment administration software, and numerous successful tax base revaluations in developed countries, computer Estimated Valuation (CEV), including specification and calibration of statistical market models from sales data; statistical and spreadsheet analysis for income valuation of income producing property and hotel valuation Database design, development and maintenance in client/server and desktop environments, public administration, running a City valuation department work force, and managing initial valuations and revaluations in domestic and international locations. Ms. Powers has worked in the United States, Canada, Mexico, Lithuania, Serbia, Slovenia, South Africa, Kosovo, and the Virgin Islands.

Sally Powers Attained Degrees from: M.S., Finance, Boston College; B.A., Anthropology, The University of Chicago

Theresa Anduze-Parris, PhD.: "Perception"

Theresa Anduze-Parris, PhD., is the GIS Coordinator for the Office of the Lieutenant Governor – Division of the Tax Assessor. With the foundation of GIS situated, Dr Parris is tasked with its continued growth in the office territory wide. Presently, Dr. Parris restructured the workflow and is a team player in establishing the foundation for VIGIC (United States Virgin Islands Geospatial Information Council, *“to encourage effective and efficient government through coordinated development of geospatial information and technologies to ensure that information may be integrated at all levels of government.”*).

Dr. Parris worked for the University of the Virgin Islands building the infrastructure for the St. Croix Campus for close to two decades as Information Technology Administrator and taught for ten of those years as a part-time instructor before moving on. Dr. Parris owned TAP Technology for two years contributing to the economy with her professional experience.

A proud graduate of NOVA Southeastern University, Ph.D., Information Systems, University of the Virgin Islands, M.B.A., and Aquinas College, Management/Computer Science. With more than two decades of technological operational and management experience, Dr. Parris has developed an eye for inefficiencies within technology and for restructuring infrastructures to handle the transition and growth of technology.

~

David A. Y. Smith, Ph.D., P. Eng., Managing Director Smith Warner International Ltd.

David Smith, Ph.D., P. Eng., has over 25 years experience in the field of Coastal Engineering. In that period, he lectured in Civil Engineering Hydraulics and Fluid Mechanics at the University of the West Indies, Trinidad. Following that, he led the Coastal Engineering Department of a leading Canadian Ports and Marine consulting company. During that time, he worked on a number of coastal related projects in North America, Africa and the Far East. From 1991-1995 he was the Project Coordinator for the South and West Coast Coastal Conservation Project in Barbados. In that role, he coordinated the activities of a multi-disciplinary team of professionals, whose disciplines ranged from marine ecology through coastal processes and oceanography, to land use issues.

Since 1995, Dr. Smith has been Managing Director of Smith Warner International, Ltd. In this role, he has been responsible for the undertaking of a number of coastal, oceanographic, hazard mitigation/management and marine environmental projects. Under his stewardship, SWI has garnered a reputation throughout the Caribbean for the high calibre of its personnel, the professionalism and the technical excellence of its work, and its strong Caribbean focus and sensitivity.

Continuously Operating Reference Station (CORS) Installation Update

The installation of two new CORS in the U.S. Virgin Islands is an example of how partners collaborating helps in finding solutions to problems. In 2004, NOAA's National Geodetic Survey (NGS) Staff initiated discussions on improving the positioning infrastructure of the Territory. Lieutenant Governor Vargrave Richards dedicated funding from his office to support this effort. In 2005, the Office of the Lieutenant Governor arranged an agreement with the University of the Virgin Islands (UVI) to provide technical assistance on this project.

March 2006

After visits to various locations on St. Thomas and St. Croix, NGS Staff conducted reconnaissance on the University of the Virgin Islands (UVI) St. Thomas and St. Croix campuses. NGS staff with assistance from UVI staff identified a location for the CORS antenna on each campus.

The equipment to be installed by NGS staff with assistance from UVI staff includes:

1. Trimble NetRS GPS receiver/antenna
2. Paroscientific MET3A high precision sensor



3. Electronic power backup system
4. Lightning arrestor
5. GPS antenna and MET3A mounting devices

After the installation of the CORS, UVI will provide the following support for the operation of the tracking system:

1. Provide electricity to the tracking system
2. Provide security to the tracking system
3. Provide internet connection to the GPS receiver for uploading data to NGS
4. Check the system operating status and work with NGS staff should problems arise (NGS will provide training to UVI staff).

DEFINING FLOODING

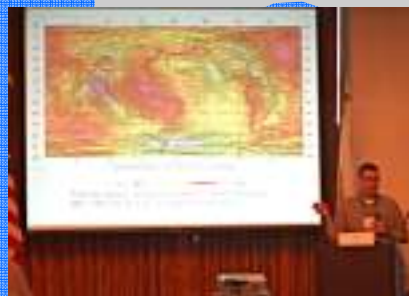
Coastal Resource Managers have observed a tendency for community and elected officials, members of the public and others to confuse flooding and storm surge. These terms are defined below:

- **Coastal Flooding:** The inundation of land areas along the coast caused by higher than normal tides.
- **Flood:** The inundation of a normally dry area caused by an increased water level in a river, stream or other watercourse, or the ponding of water at or near the point where rain has fallen.
- **Storm Surge:** An abnormal rise in sea level accompanying a hurricane or other intense storm determined by the difference between the height of the observe water level and the predicted tide.

While storm surge has been the number one cause of hurricane-related deaths in the past, many people have also died from inland flooding associated with tropical systems over the past 30 years. For more information go to www.nhc.noaa.gov/HAW2/english/intro.shtml.

Source: Coastal Resource Managers. **Special Issue: Lessons from Katrina.** NOAA 2006.

GIS Conference '05



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